Voltage Dependent Resistor

惠州市嵩隆力上電子有限公司

VDR

•HUIZHOU SHI SONGLONG LISHANG ELECTRONICS CO.,LTD

•Overall circuit protection solution provider

Ver. 2019

•wwvdrsas.com

产品目录

METAL OXIDE VARISTOR

FEATURES

* Wide operating voltage (V1mA) range from 18V to 1800V.
* Fast responding to transient over-voltage.
* Large absorbing transient energy capability.
* Low clamping ratio and no follow-on current.
* UL1449 TYPE5 / IEC 61051-1 2 -2
* IEC 62368-1:2018/G.8.1 /IEC 60950-1:2005/AMD1:2009/AMD2:2013, Annex Q
* GB8898 GB4943.1 GB/T10193-1997 GB/T10194-1997
* Safety number UL+CUL E317616 VDE40028836 CQC 05D-20D

APPLICATION

*Transistor, Diode, IC, Thyristor or Triac semiconductor protection.
* Surge protection in consumer electronics.
* Surge protection in industrial electronics.
* Surge protection in electronic home appliances, gas and petroleum appliances.
* Relay and electromagnetic valve surge absorption.

General Characteristics Definition

*Operating Temperature:	(-40 ℃ ~+85 ℃) & (-40 ℃ ~+125 ℃)
*Storage Temperature:	(-40 °C ~ +125 °C~) & (-40 ℃ ~+150 ℃)
*Working Surface Temperature:	+115 °C
*Insulation Resistance:	> 100M
*Coating (Epoxy Resin):	Flame-Retardant to UL 94 V-0

Material

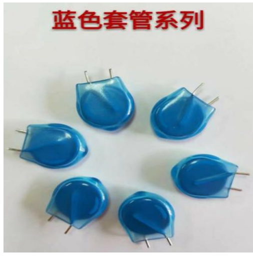
*Coating:	Epoxy Resin
*Lead Wire:	The Copper Wire
*Electrode:	Silver Solder
*Disk:	Zinc Oxide

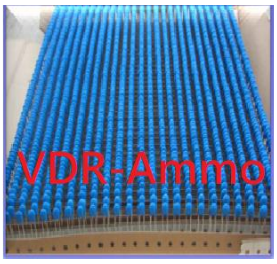
PART NUMBER CODE

VDR □□ □ □□□ K □□□□ - □□

- VDR: Brand Mark
- □□: Element Diameter
- □: Type: D: Disk; S: Square
- □□□: Varistor Voltage
- K: Tolerance : K±10%, L±15%, M±20%
- □□□□:
  - Sapce:bulk & 85℃
  - J :High Surge
  - PH: Super Energy
  - 1□:Combinatorial wave
  - 2□:All-phase Times
  - Y:High and low feet
  - I:Inner bend
  - CB:Outer bend
  - H:125℃ Temperature
  - Short leg : NO : □.□
  - EC:4KV/2KA 40Tmes
  - SC:6KV/3KA 40Tmes
- □□:
  - TA : Ammo
  - TR : Reel
  - T1:Transparent sleeve
  - T2:Black sleeve
  - T3&T4:Blue sleeve
  - G : Horizontal Reel
  - T:Pin fold 90^{0}
  - U:Upper voltage
  - D:Lower voltage

Product Display





Manufacturing process Display



Main testing equipment Display



ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V0.1mA(V)	IP (A)	VC(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
05D180L	05D180LJ	11	14	18(15.3~20.7)	1	40	100	250	0.4	0.6	0.01	1400
05D220K	05D220KJ	14	18	22(19.8~24.2)	1	48	100	250	0.5	0.7	0.01	1150
05D270K	05D270KJ	17	22	27(24.3~29.7)	1	60	100	250	0.6	0.9	0.01	930
05D330K	05D330KJ	20	26	33(29.7~36.3)	1	73	100	250	0.8	1.1	0.01	760
05D390K	05D390KJ	25	31	39(35.1~42.9)	1	80	100	250	0.9	1.2	0.01	640
05D470K	05D470KJ	30	38	47(42.3~51.7)	1	104	100	250	1.1	1.5	0.01	530
05D560K	05D560KJ	35	45	56(50.4~61.6)	1	123	100	250	1.3	1.8	0.01	450
05D680K	05D680KJ	40	56	68(61.2~74.8)	1	145	100	250	1.6	2.2	0.01	370
05D820K	05D820KJ	50	65	82(73.8~90.2)	5	150	400	800	2.5	4.0	0.1	300
05D101K	05D101KJ	60	85	100(90~110)	5	177	400	800	3.0	4.1	0.1	250
05D121K	05D121KJ	75	100	120(108~132)	5	210	400	800	4.0	4.9	0.1	210
05D151K	05D151KJ	95	125	150(135~165)	5	260	400	800	4.1	6.5	0.1	165
05D181K	05D181KJ	115	150	180(162~198)	5	320	400	800	4.9	7.5	0.1	140
05D201K	05D201KJ	130	170	200(185~225)	5	340	400	800	6.5	8.5	0.1	125
05D221K	05D221KJ	140	180	220(198~242)	5	380	400	800	7.5	9.0	0.1	110
05D241K	05D241KJ	150	200	240(216~264)	5	415	400	800	8.0	10.5	0.1	100
05D271K	05D271KJ	175	225	270(243~297)	5	475	400	800	8.5	11.0	0.1	95
05D301K	05D301KJ	190	250	300(270~330)	5	520	400	800	9.0	12.0	0.1	85
05D331K	05D331KJ	210	275	330(297~363)	5	570	400	800	9.5	13.0	0.1	75
05D361K	05D361KJ	230	300	360(324~396)	5	620	400	800	10.0	16.0	0.1	70
05D391K	05D391KJ	250	320	390(351~429)	5	675	400	800	12.0	17.0	0.1	65
05D431K	05D431KJ	275	350	430(387~473)	5	745	400	800	13.0	20.0	0.1	60
05D471K	05D471KJ	300	385	470(423~517)	5	810	400	800	15.0	21.0	0.1	55
05D511K	05D511KJ	320	415	510(459~561)	5	845	400	800	16.0	22.5	0.1	50
05D561K	05D561KJ	350	460	560(504~616)	5	920	400	800	16.5	24.0	0.1	45
05D621K	05D621KJ	385	505	620(558~682)	5	1025	400	800	21.0	25.0	0.1	40
05D681K	05D681KJ	420	560	680(612~748)	5	1120	400	800	22.0	29.0	0.1	35
05D751K	05D751KJ	460	615	750(675~825)	5	1240	400	800	22.4	32.0	0.1	30

1.VDR-05D180L to VDR-05D471K have **VDE** 125 degree working temperature certification No: 40028836

2.VDR-05D180L to VDR-05D681K have **UL** Security Regulation Certification No: E317616

3.VDR-05D180L to VDR-05D751K have **CQC** Security Regulation Certification No: 12001076477

ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP (A)	VC(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
07D180L	07D180LJ	11	14	18(15.3~20.7)	2.5	36	250	500	0.9	2.0	0.02	2800
07D220K	07D220KJ	14	18	22(19.8~24.2)	2.5	43	250	500	1.1	2.4	0.02	2300
07D270K	07D270KJ	17	22	27(24.3-29.7)	2.5	53	250	500	1.4	3.0	0.02	1800
07D330K	07D330KJ	20	26	33(29.7~36.3)	2.5	65	250	500	1.7	3.5	0.02	1500
07D390K	07D390KJ	25	31	39(35.1~42.9)	2.5	77	250	500	2.1	4.0	0.02	1300
07D470K	07D470KJ	30	38	47(42.3~51.7)	2.5	93	250	500	2.5	5.0	0.02	1100
07D560K	07D560KJ	35	45	56(50.4~61.6)	2.5	110	250	500	3.1	6.0	0.02	890
07D680K	07D680KJ	40	56	68(61.2~74.8)	2.5	135	250	500	3.6	7.0	0.02	740
07D820K	07D820KJ	50	65	82(73.8~90.2)	10	135	1200	1750	5.5	10	0.25	600
07D101K	07D101KJ	60	85	100(90~110)	10	165	1200	1750	6.5	12	0.25	500
07D121K	07D121KJ	75	100	120(108~132)	10	200	1200	1750	7.8	12	0.25	420
07D151K	07D151KJ	95	125	150(135~165)	10	250	1200	1750	9.7	13	0.25	330
07D181K	07D181KJ	115	150	180(162~198)	10	300	1200	1750	11.7	16	0.25	280
07D201K	07D201KJ	130	170	200(185~225)	10	340	1200	1750	13	17	0.25	250
07D221K	07D221KJ	140	180	220(198~242)	10	360	1200	1750	14	19	0.25	230
07D241K	07D241KJ	150	200	240(216~264)	10	395	1200	1750	15	21	0.25	210
07D271K	07D271KJ	175	225	270(243~297)	10	455	1200	1750	18	24	0.25	185
07D301K	07D301KJ	190	250	300(270~330)	10	505	1200	1750	20	26	0.25	165
07D331K	07D331KJ	210	275	330(297~363)	10	550	1200	1750	23	28	0.25	150
07D361K	07D361KJ	230	300	360(324~396)	10	595	1200	1750	25	32	0.25	140
07D391K	07D391KJ	250	320	390(351~429)	10	650	1200	1750	25	35	0.25	130
07D431K	07D431KJ	275	350	430(387~473)	10	710	1200	1750	28	40	0.25	115
07D471K	07D471KJ	300	385	470(423~517)	10	775	1200	1750	30	42	0.25	105
07D511K	07D511KJ	320	415	510(459~561)	10	845	1200	1750	30	45	0.25	100
07D561K	07D561KJ	350	460	560(504~616)	10	920	1200	1750	30	49	0.25	90
07D621K	07D621KJ	385	505	620(558~682)	10	1025	1200	1750	33	55	0.25	80
07D681K	07D681KJ	420	560	680(612~748)	10	1120	1200	1750	33	60	0.25	75
07D751K	07D751KJ	460	615	750(675~825)	10	1240	1200	1750	65	67	0.25	70
07D781K	07D781KJ	485	640	780(702~858)	10	1290	1200	1750	65	67	0.25	70
07D821K	07D821KJ	510	670	820(738~902)	10	1355	1200	1750	65	70	0.25	60

1.VDR-07D180L to VDR-07D561K have **VDE** 125 degree working temperature certification No: 40028836

2.VDR-07D180L to VDR-07D681K have **UL+CUL** Security Regulation Certification No: E317616

3.VDR-07D751 to VDR-07D821K have **UL** Security Regulation Certification No: E317616

4.VDR-07D820KH to VDR-07D681KH have **UL+CUL** 125 degree working temperature certification No: E317616

5.VDR-07D180L to VDR-07D821K have **CQC** Security Regulation Certification No: 12001076478

6.VDR-07D180L to VDR-07D821K have **CQC** 125 degree working temperature certification No: 19001211522

ELECTRICAL CHARACTERISTIC

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current	Energy 10/1000μS	Rated Powe	Typical Capacitance (Reference)
Standard	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)	1.2/50us & 8/20us combinationof wave,2KV /1KA sub 0 , 90 , 180 , 270 four phases, each phases of positive and negative 5 times Total	(J) High Surge	(W)	@1KHzPF
07D820KBC	50	65	82(73.8~90.2)	10	135	40 times	12	0.25	600
07D101KBC	60	85	100(90~110)	10	165	40 times	14	0.25	500
07D121KBC	75	100	120(108~132)	10	200	40 times	14	0.25	420
07D151KBC	95	125	150(135~165)	10	250	40 times	16	0.25	330
07D181KBC	115	150	180(162~198)	10	300	40 times	19	0.25	280
07D201KBC	130	170	200(185~225)	10	340	40 times	20	0.25	250
07D221KBC	140	180	220(198~242)	10	360	40 times	23	0.25	230
07D241KBC	150	200	240(216~264)	10	395	40 times	25	0.25	210
07D271KBC	175	225	270(243~297)	10	455	40 times	29	0.25	185
07D301KBC	190	250	300(270~330)	10	505	40 times	31	0.25	165
07D331KBC	210	275	330(297~363)	10	550	40 times	34	0.25	150
07D361KBC	230	300	360(324~396)	10	595	40 times	38	0.25	140
07D391KBC	250	320	390(351~429)	10	650	40 times	42	0.25	130
07D431KBC	275	350	430(387~473)	10	710	40 times	48	0.25	115
07D471KBC	300	385	470(423~517)	10	775	40 times	50	0.25	105
07D511KBC	320	415	510(459~561)	10	845	40 times	54	0.25	100
07D561KBC	350	460	560(504~616)	10	920	40 times	59	0.25	90
07D621KBC	385	505	620(558~682)	10	1025	40 times	66	0.25	80
07D681KBC	420	560	680(612~748)	10	1120	40 times	72	0.25	75
07D751KBC	460	615	750(675~825)	10	1240	40 times	81	0.25	70
07D781KBC	485	640	780(702~858)	10	1290	40 times	81	0.25	70
07D821KBC	510	670	820(738~902)	10	1355	40 times	84	0.25	60

1.VDR-07D180L to VDR-07D561K have **VDE** 125 degree working temperature certification No: 40028836

2.VDR-07D180L to VDR-07D681K have **UL+CUL** Security Regulation Certification No: E317616

3.VDR-07D751 to VDR-07D821K have **UL** Security Regulation Certification No: E317616

4.VDR-07D820KH to VDR-07D681KH have **UL+CUL** 125 degree working temperature certification No: E317616

5.VDR-07D180L to VDR-07D821K have **CQC** Security Regulation Certification No: 12001076478

6.VDR-07D180L to VDR-07D821K have **CQC** 125 degree working temperature certification No: 19001211522

ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP (A)	VC (V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
10D180L	10D180LJ	11	14	18(15.3~20.7)	5	36	500	1000	2.1	3	0.05	5600
10D220K	10D220KJ	14	18	22(19.8~24.2)	5	43	500	1000	2.5	5	0.05	4500
10D270K	10D270KJ	17	22	27(24.3~29.7)	5	53	500	1000	3.0	6	0.05	3700
10D330K	10D330KJ	20	26	33(29.7~36.3)	5	65	500	1000	4.0	7	0.05	3000
10D390K	10D390KJ	25	31	39(35.1~42.9)	5	77	500	1000	4.6	9	0.05	2400
10D470K	10D470KJ	30	38	47(42.3~51.7)	5	93	500	1000	5.5	11	0.05	2100
10D560K	10D560KJ	35	45	56(50.4~61.6)	5	110	500	1000	7.0	13	0.05	1800
10D680K	10D680KJ	40	56	68(61.2~74.8)	5	135	500	1000	8.2	15	0.05	1500
10D820K	10D820KJ	50	65	82(73.8~90.2)	25	135	2500	3500	12	17	0.4	1200
10D101K	10D101KJ	60	85	100(90~110)	25	165	2500	3500	15	18	0.4	1000
10D121K	10D121KJ	75	100	120(108~132)	25	200	2500	3500	18	21	0.4	830
10D151K	10D151KJ	95	125	150(135~165)	25	250	2500	3500	22	25	0.4	670
10D181K	10D181KJ	115	150	180(162~198)	25	300	2500	3500	27	30	0.4	560
10D201K	10D201KJ	130	170	200(185~225)	25	340	2500	3500	30	35	0.4	500
10D221K	10D221KJ	140	180	220(198~242)	25	360	2500	3500	32	39	0.4	450
10D241K	10D241KJ	150	200	240(216~264)	25	395	2500	3500	35	42	0.4	420
10D271K	10D271KJ	175	225	270(243~297)	25	455	2500	3500	37	49	0.4	370
10D301K	10D301KJ	190	250	300(270~330)	25	505	2500	3500	40	54	0.4	330
10D331K	10D331KJ	210	275	330(297~363)	25	550	2500	3500	43	58	0.4	300
10D361K	10D361KJ	230	300	360(324~396)	25	595	2500	3500	47	65	0.4	280
10D391K	10D391KJ	250	320	390(351~429)	25	650	2500	3500	60	70	0.4	260
10D431K	10D431KJ	275	350	430(387~473)	25	710	2500	3500	65	80	0.4	230
10D471K	10D471KJ	300	385	470(423~517)	25	775	2500	3500	67	85	0.4	210
10D511K	10D511KJ	320	415	510(459~561)	25	845	2500	3500	69	90	0.4	200
10D561K	10D561KJ	350	460	560(504~616)	25	920	2500	3500	70	92	0.4	180
10D621K	10D621KJ	385	505	620(558~682)	25	1025	2500	3500	72	95	0.4	160
10D681K	10D681KJ	420	560	680(612~748)	25	1120	2500	3500	75	98	0.4	150
10D751K	10D751KJ	460	615	750(675~825)	25	1240	2500	3500	77	100	0.4	140
10D781K	10D781KJ	485	640	780(702~858)	25	1290	2500	3500	80	105	0.4	130
10D821K	10D821KJ	510	670	820(738~902)	25	1355	2500	3500	85	110	0.4	120
10D911K	10D911KJ	550	745	910(819~1001)	25	1500	2500	3500	93	130	0.4	110
10D102K	10D102KJ	625	825	1000(900~1100)	25	1650	2500	3500	102	140	0.4	100
10D112K	10D112KJ	680	895	1100(990~1210)	25	1815	2500	3500	115	150	0.4	90

1.VDR-10D180L to VDR-10D112K have **VDE** 85 &125 degree working temperature certification No: 40028836
2.VDR-10D180L to VDR-10D112K have **UL+CUL** 85 &125 degree working temperature certification No: E317616
3.VDR-10D180L to VDR-10D112K have **CQC** Security Regulation Certification No: 12001076479
4.VDR-10D180L to VDR-10D112K have **CQC** 125 degree working temperature certification No: 19001211524

ELECTRICAL CHARACTERISTIC

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current 1.2/50us & 8/20us combinationof wave,4KV /2KA sub 0 , 90 , 180 , 270 four phases, each phases of positive and negative 5 times Total	Energy 10/1000μS	Rated Powe	Typical Capacitance (Reference)
Standard	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)		(J) High Surge	(W)	@1KHzPF
10D820KEC	50	65	82(73.8~90.2)	25	135	40 times	17	0.4	1200
10D101KEC	60	85	100(90~110)	25	165	40 times	18	0.4	1000
10D121KEC	75	100	120(108~132)	25	200	40 times	21	0.4	830
10D151KEC	95	125	150(135~165)	25	250	40 times	25	0.4	670
10D181KEC	115	150	180(162~198)	25	300	40 times	30	0.4	560
10D201KEC	130	170	200(185~225)	25	340	40 times	35	0.4	500
10D221KEC	140	180	220(198~242)	25	360	40 times	39	0.4	450
10D241KEC	150	200	240(216~264)	25	395	40 times	42	0.4	420
10D271KEC	175	225	270(243~297)	25	455	40 times	49	0.4	370
10D301KEC	190	250	300(270~330)	25	505	40 times	54	0.4	330
10D331KEC	210	275	330(297~363)	25	550	40 times	58	0.4	300
10D361KEC	230	300	360(324~396)	25	595	40 times	65	0.4	280
10D391KEC	250	320	390(351~429)	25	650	40 times	70	0.4	260
10D431KEC	275	350	430(387~473)	25	710	40 times	80	0.4	230
10D471KEC	300	385	470(423~517)	25	775	40 times	85	0.4	210
10D511KEC	320	415	510(459~561)	25	845	40 times	90	0.4	200
10D561KEC	350	460	560(504~616)	25	920	40 times	92	0.4	180
10D621KEC	385	505	620(558~682)	25	1025	40 times	95	0.4	160
10D681KEC	420	560	680(612~748)	25	1120	40 times	98	0.4	150
10D751KEC	460	615	750(675~825)	25	1240	40 times	100	0.4	140
10D781KEC	485	640	780(702~858)	25	1290	40 times	105	0.4	130
10D821KEC	510	670	820(738~902)	25	1355	40 times	110	0.4	120

1.VDR-10D180L to VDR-10D112K have **VDE** 85 &125 degree working temperature certification No: 40028836

2.VDR-10D180L to VDR-10D112K have **UL+CUL** 85 &125 degree working temperature certification No: E317616

3.VDR-10D180L to VDR-10D112K have **CQC** Security Regulation Certification No: 12001076479

4.VDR-10D180L to VDR-10D112K have **CQC** 125 degree working temperature certification No: 19001211524

ELECTRICAL CHARACTERISTIC

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current 1.2/50us & 8/20us combinationof wave,6KV /3KA sub 0 , 90 , 180 , 270 four phases, Total	Energy 10/1000μS	Rated Powe	Typical Capacitance (Reference)
Standard	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)		(J) High Surge	(W)	@1KHzPF
10D181KSC	115	150	180(162~198)	25	300	40 times	30	0.4	560
10D201KSC	130	170	200(185~225)	25	340	40 times	35	0.4	500
10D221KSC	140	180	220(198~242)	25	360	40 times	39	0.4	450
10D241KSC	150	200	240(216~264)	25	395	40 times	42	0.4	420
10D271KSC	175	225	270(243~297)	25	455	40 times	49	0.4	370
10D301KSC	190	250	300(270~330)	25	505	40 times	54	0.4	330
10D331KSC	210	275	330(297~363)	25	550	40 times	58	0.4	300
10D361KSC	230	300	360(324~396)	25	595	40 times	65	0.4	280
10D391KSC	250	320	390(351~429)	25	650	40 times	70	0.4	260
10D431KSC	275	350	430(387~473)	25	710	40 times	80	0.4	230
10D471KSC	300	385	470(423~517)	25	775	40 times	85	0.4	210
10D511KSC	320	415	510(459~561)	25	845	40 times	90	0.4	200
10D561KSC	350	460	560(504~616)	25	920	40 times	92	0.4	180
10D621KSC	385	505	620(558~682)	25	1025	40 times	95	0.4	160
10D681KSC	420	560	680(612~748)	25	1120	40 times	98	0.4	150
10D751KSC	460	615	750(675~825)	25	1240	40 times	100	0.4	140
10D781KSC	485	640	780(702~858)	25	1290	40 times	105	0.4	130
10D821KSC	510	670	820(738~902)	25	1355	40 times	110	0.4	120

1.VDR-10D180L to VDR-10D112K have **VDE** 85 &125 degree working temperature certification No: 40028836

2.VDR-10D180L to VDR-10D112K have **UL+CUL** 85 &125 degree working temperature certification No: E317616

3.VDR-10D180L to VDR-10D112K have **CQC** Security Regulation Certification No: 12001076479

4.VDR-10D180L to VDR-10D112K have **CQC** 125 degree working temperature certification No: 19001211524

ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)	I(A) Standard	(A) High Surge	I(J) Standard	I(J) High Surge	(W)	@1KHzPF
14D180L	14D180LJ	11	14	18(15.3~20.7)	10	36	1000	2000	4	7	0.1	11000
14D220K	14D220KJ	14	18	22(19.8~24.2)	10	43	1000	2000	5	8	0.1	9100
14D270K	14D270KJ	17	22	27(24.3~29.7)	10	53	1000	2000	6	10	0.1	7400
14D330K	14D330KJ	20	26	33(29.7~36.3)	10	65	1000	2000	8	12	0.1	6100
14D390K	14D390KJ	25	31	39(35.1~42.9)	10	77	1000	2000	9	13	0.1	5100
14D470K	14D470KJ	30	38	47(42.3~51.7)	10	93	1000	2000	10	17	0.1	4300
14D560K	14D560KJ	35	45	56(50.4~61.6)	10	110	1000	2000	11	20	0.1	3600
14D680K	14D680KJ	40	56	68(61.2~74.8)	10	135	1000	2000	14	24	0.1	2900
14D820K	14D820KJ	50	65	82(73.8~90.2)	50	135	4500	6000	22	27	0.6	2400
14D101K	14D101KJ	60	85	100(90~110)	50	165	4500	6000	28	33	0.6	2000
14D121K	14D121KJ	75	100	120(108~132)	50	200	4500	6000	32	40	0.6	1700
14D151K	14D151KJ	95	125	150(135~165)	50	250	4500	6000	40	53	0.6	1300
14D181K	14D181KJ	115	150	180(162~198)	50	300	4500	6000	50	60	0.6	1100
14D201K	14D201KJ	130	170	200(185~225)	50	340	4500	6000	57	70	0.6	1000
14D221K	14D221KJ	140	180	220(198~242)	50	360	4500	6000	60	78	0.6	830
14D241K	14D241KJ	150	200	240(216~264)	50	395	4500	6000	63	84	0.6	740
14D271K	14D271KJ	175	225	270(243~297)	50	455	4500	6000	70	99	0.6	670
14D301K	14D301KJ	190	250	300(270~330)	50	505	4500	6000	77	108	0.6	610
14D331K	14D331KJ	210	275	330(297~363)	50	550	4500	6000	85	115	0.6	560
14D361K	14D361KJ	230	300	360(324~396)	50	595	4500	6000	93	130	0.6	510
14D391K	14D391KJ	250	320	390(351~429)	50	650	4500	6000	100	140	0.6	460
14D431K	14D431KJ	275	350	430(387~473)	50	710	4500	6000	115	155	0.6	230
14D471K	14D471KJ	300	385	470(423~517)	50	775	4500	6000	125	175	0.6	430
14D511K	14D511KJ	320	415	510(459~561)	50	845	4500	6000	126	180	0.6	390
14D561K	14D561KJ	350	460	560(504~616)	50	920	4500	6000	127	185	0.6	360
14D621K	14D621KJ	385	505	620(558~682)	50	1025	4500	6000	128	190	0.6	320
14D681K	14D681KJ	420	560	680(612~748)	50	1120	4500	6000	130	200	0.6	290
14D751K	14D751KJ	460	615	750(675~825)	50	1240	4500	6000	143	210	0.6	270
14D781K	14D781KJ	485	640	780(702~858)	50	1290	4500	6000	148	220	0.6	260
14D821K	14D821KJ	510	670	820(738~902)	50	1355	4500	6000	157	235	0.6	240
14D911K	14D911KJ	550	745	910(819~1001)	50	1500	4500	6000	175	255	0.6	220
14D102K	14D102KJ	625	825	1000(900~1100)	50	1650	4500	6000	190	280	0.6	200
14D112K	14D112KJ	680	895	1100(990~1210)	50	1815	4500	6000	213	310	0.6	180
14D122K	14D122KJ	750	990	1200(1080~1320)	50	1980	4500	6000	232	324	0.6	160
14D142K	14D142KJ	880	1140	1400(1260~1540)	50	2310	4500	6000	238	327	0.6	150
14D162K	14D162KJ	1000	1280	1600(1400~1760)	50	2640	4500	6000	243	331	0.6	140
14D182K	14D182KJ	1100	1465	1800(1620~1980)	50	2970	4500	6000	250	335	0.6	130

1.VDR-14D270K to VDR-14D751K have **VDE** 85 &125 degree working temperature certification No: 40028836

2.VDR-14D180L to VDR-14D182K have **UL+CUL** 85 &125 degree working temperature certification No: E317616

3.VDR-14D180L to VDR-14D182K have **CQC** Security Regulation Certification No: 12001078540

4.VDR-14D180L to VDR-14D112K have **CQC** 125 degree working temperature certification No: 19001211516

ELECTRICAL CHARACTERISTIC

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current	Energy 10/1000μS	Rated Powe	Typical Capacitance (Reference)
Standard	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)	1.2/50us & 8/20us combinationof wave,6KV /3KA sub 0 , 90 , 180 , 270 four phases, each phases of positive and negative 5 times Total	(J) High Surge	(W)	@1KHzPF
14D820KSC	50	65	82(73.8~90.2)	50	135	40 times	27	0.6	2400
14D101KSC	60	85	100(90~110)	50	165	40 times	33	0.6	2000
14D121KSC	75	100	120(108~132)	50	200	40 times	40	0.6	1700
14D151KSC	95	125	150(135~165)	50	250	40 times	53	0.6	1300
14D181KSC	115	150	180(162~198)	50	300	40 times	60	0.6	1100
14D201KSC	130	170	200(185~225)	50	340	40 times	70	0.6	1000
14D221KSC	140	180	220(198~242)	50	360	40 times	78	0.6	830
14D241KSC	150	200	240(216~264)	50	395	40 times	84	0.6	740
14D271KSC	175	225	270(243~297)	50	455	40 times	99	0.6	670
14D301KSC	190	250	300(270~330)	50	505	40 times	108	0.6	610
14D331KSC	210	275	330(297~363)	50	550	40 times	115	0.6	560
14D361KSC	230	300	360(324~396)	50	595	40 times	130	0.6	510
14D391KSC	250	320	390(351~429)	50	650	40 times	140	0.6	460
14D431KSC	275	350	430(387~473)	50	710	40 times	155	0.6	230
14D471KSC	300	385	470(423~517)	50	775	40 times	175	0.6	430
14D511KSC	320	415	510(459~561)	50	845	40 times	180	0.6	390
14D561KSC	350	460	560(504~616)	50	920	40 times	185	0.6	360
14D621KSC	385	505	620(558~682)	50	1025	40 times	190	0.6	320
14D681KSC	420	560	680(612~748)	50	1120	40 times	200	0.6	290
14D751KSC	460	615	750(675~825)	50	1240	40 times	210	0.6	270
14D781KSC	485	640	780(702~858)	50	1290	40 times	220	0.6	260
14D821KSC	510	670	820(738~902)	50	1355	40 times	235	0.6	240

1.VDR-14D270K to VDR-14D751K have **VDE** 85 &125 degree working temperature certification No: 40028836

2.VDR-14D180L to VDR-14D182K have **UL+CUL** 85 &125 degree working temperature certification No: E317616

3.VDR-14D180L to VDR-14D182K have **CQC** Security Regulation Certification No: 12001078540

4.VDR-14D180L to VDR-14D112K have **CQC** 125 degree working temperature certification No: 19001211516

ELECTRICAL CHARACTERISTIC

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current 1.2/50us & 8/20us combinationof wave,6KV /3KA sub 0 , 90 , 180 , 270 four phases, each phases of positive and negative 5 times Total	Energy 10/1000µS	Rated Powe	Typical Capacitance (Reference)
Standard	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)		(J) High Surge	(W)	@1KHzPF
14D820KSD	50	65	82(73.8~90.2)	50	135	60 times	32	0.6	2400
14D101KSD	60	85	100(90~110)	50	165	60 times	40	0.6	2000
14D121KSD	75	100	120(108~132)	50	200	60 times	48	0.6	1700
14D151KSD	95	125	150(135~165)	50	250	60 times	64	0.6	1300
14D181KSD	115	150	180(162~198)	50	300	60 times	72	0.6	1100
14D201KSD	130	170	200(185~225)	50	340	60 times	84	0.6	1000
14D221KSD	140	180	220(198~242)	50	360	60 times	94	0.6	830
14D241KSD	150	200	240(216~264)	50	395	60 times	101	0.6	740
14D271KSD	175	225	270(243~297)	50	455	60 times	119	0.6	670
14D301KSD	190	250	300(270~330)	50	505	60 times	130	0.6	610
14D331KSD	210	275	330(297~363)	50	550	60 times	138	0.6	560
14D361KSD	230	300	360(324~396)	50	595	60 times	156	0.6	510
14D391KSD	250	320	390(351~429)	50	650	60 times	168	0.6	460
14D431KSD	275	350	430(387~473)	50	710	60 times	186	0.6	230
14D471KSD	300	385	470(423~517)	50	775	60 times	210	0.6	430
14D511KSD	320	415	510(459~561)	50	845	60 times	216	0.6	390
14D561KSD	350	460	560(504~616)	50	920	60 times	222	0.6	360
14D621KSD	385	505	620(558~682)	50	1025	60 times	228	0.6	320
14D681KSD	420	560	680(612~748)	50	1120	60 times	240	0.6	290
14D751KSD	460	615	750(675~825)	50	1240	60 times	252	0.6	270
14D781KSD	485	640	780(702~858)	50	1290	60 times	264	0.6	260
14D821KSD	510	670	820(738~902)	50	1355	60 times	282	0.6	240

1.VDR-14D270K to VDR-14D751K have **VDE** 85 &125 degree working temperature certification No: 40028836

2.VDR-14D180L to VDR-14D182K have **UL+CUL** 85 &125 degree working temperature certification No: E317616

3.VDR-14D180L to VDR-14D182K have **CQC** Security Regulation Certification No: 12001078540

4.VDR-14D180L to VDR-14D112K have **CQC** 125 degree working temperature certification No: 19001211516

ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP (A)	VC (V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
20D180L	20D180LJ	11	14	18(15.3~20.7)	20	36	2000	3000	11	13	0.2	28500
20D220K	20D220KJ	14	18	22(19.8~24.2)	20	43	2000	3000	14	16	0.2	18500
20D270K	20D270KJ	17	22	27(24.3-29.7)	20	53	2000	3000	16	19	0.2	13000
20D330K	20D330KJ	20	26	33(29.7~36.3)	20	65	2000	3000	23	24	0.2	11500
20D390K	20D390KJ	25	31	39(35.1~42.9)	20	77	2000	3000	26	28	0.2	8500
20D470K	20D470KJ	30	38	47(42.3~51.7)	20	93	2000	3000	30	34	0.2	7400
20D560K	20D560KJ	35	45	56(50.4~61.6)	20	110	2000	3000	41	46	0.2	6500
20D680K	20D680KJ	40	56	68(61.2~74.8)	20	135	2000	3000	46	49	0.2	5800
20D820K	20D820KJ	50	65	82(73.8~90.2)	100	135	6500	10000	38	56	1.0	4900
20D101K	20D101KJ	60	85	100(90~110)	100	165	6500	10000	45	70	1.0	4000
20D121K	20D121KJ	75	100	120(108~132)	100	200	6500	10000	55	85	1.0	3300
20D151K	20D151KJ	95	125	150(135~165)	100	250	6500	10000	70	106	1.0	2700
20D181K	20D181KJ	115	150	180(162~198)	100	300	6500	10000	85	130	1.0	2200
20D201K	20D201KJ	130	170	200(185~225)	100	340	6500	10000	95	140	1.0	2000
20D221K	20D221KJ	140	180	220(198~242)	100	360	6500	10000	100	155	1.0	1800
20D241K	20D241KJ	150	200	240(216~264)	100	395	6500	10000	108	168	1.0	1650
20D271K	20D271KJ	175	225	270(243~297)	100	455	6500	10000	127	190	1.0	1500
20D301K	20D301KJ	190	250	300(270~330)	100	505	6500	10000	136	210	1.0	1300
20D331K	20D331KJ	210	275	330(297~363)	100	550	6500	10000	150	228	1.0	1200
20D361K	20D361KJ	230	300	360(324~396)	100	595	6500	10000	163	255	1.0	1100
20D391K	20D391KJ	250	320	390(351~429)	100	650	6500	10000	180	275	1.0	1000
20D431K	20D431KJ	275	350	430(387~473)	100	710	6500	10000	190	305	1.0	930
20D471K	20D471KJ	300	385	470(423~517)	100	775	6500	10000	220	350	1.0	850
20D511K	20D511KJ	320	415	510(459~561)	100	845	6500	10000	225	360	1.0	780
20D561K	20D561KJ	350	460	560(504~616)	100	920	6500	10000	230	380	1.0	710
20D621K	20D621KJ	385	505	620(558~682)	100	1025	6500	10000	235	390	1.0	650
20D681K	20D681KJ	420	560	680(612~748)	100	1120	6500	10000	240	400	1.0	600
20D751K	20D751KJ	460	615	750(675~825)	100	1240	6500	10000	255	420	1.0	530
20D781K	20D781KJ	485	640	780(702~858)	100	1290	6500	10000	265	440	1.0	510
20D821K	20D821KJ	510	670	820(738~902)	100	1355	6500	10000	282	460	1.0	500
20D911K	20D911KJ	550	745	910(819~1001)	100	1500	6500	10000	310	510	1.0	440
20D102K	20D102KJ	625	825	1000(900~1100)	100	1650	6500	10000	342	565	1.0	400
20D112K	20D112KJ	680	895	1100(990~1210)	100	1815	6500	10000	383	620	1.0	360
20D122K	20D122KJ	750	990	1200(1080~1320)	100	1980	6500	10000	408	660	1.0	350
20D142K	20D142KJ	880	1140	1400(1260~1540)	100	2310	6500	10000	532	784	1.0	340
20D162K	20D162KJ	1000	1280	1600(1400~1760)	100	2640	6500	10000	606	896	1.0	330
20D182K	20D182KJ	1100	1465	1800(1620~1980)	100	2970	6500	10000	625	990	1.0	320

1.VDR-20D270K to VDR-14D911K have **VDE** 85 &125 degree working temperature certification No: 40028836
2.VDR-14D180L to VDR-14D182K have **UL+CUL** 85 &125 degree working temperature certification No: E317616
3.VDR-14D180L to VDR-14D182K have **CQC** Security Regulation Certification No: 12001076476
4.VDR-14D180L to VDR-14D112K have **CQC** 125 degree working temperature certification No: 19001211523

ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000µS		Typical Capacitance (Reference)
High Surge	High Surge	AC (V)	DC (V)	V1mA(V)	IP (A)	VC(V)	I(A) J2 High Surge	I(A) J3 High Surge	(J) J2 High Surge	(J) J3 High Surge	@1KHzPF
20D180LJ2	20D180LJ3	11	14	18(15.3~20.7)	20	36	4000	5000	14	14	28500
20D220KJ2	20D220KJ3	14	18	22(19.8~24.2)	20	43	4000	5000	17	18	18500
20D270KJ2	20D270KJ3	17	22	27(24.3-29.7)	20	53	4000	5000	20	21	13000
20D330KJ2	20D330KJ3	20	26	33(29.7~36.3)	20	65	4000	5000	25	26	11500
20D390KJ2	20D390KJ3	25	31	39(35.1~42.9)	20	77	4000	5000	29	31	8500
20D470KJ2	20D470KJ3	30	38	47(42.3~51.7)	20	93	4000	5000	36	37	7400
20D560KJ2	20D560KJ3	35	45	56(50.4~61.6)	20	110	4000	5000	48	51	6500
20D680KJ2	20D680KJ3	40	56	68(61.2~74.8)	20	135	4000	5000	51	54	5800
20D820KJ2	20D820KJ3	50	65	82(73.8~90.2)	100	135	12000	13000	59	62	4900
20D101KJ2	20D101KJ3	60	85	100(90~110)	100	165	12000	13000	74	77	4000
20D121KJ2	20D121KJ3	75	100	120(108~132)	100	200	12000	13000	89	94	3300
20D151KJ2	20D151KJ3	95	125	150(135~165)	100	250	12000	13000	111	117	2700
20D181KJ2	20D181KJ3	115	150	180(162~198)	100	300	12000	13000	137	143	2200
20D201KJ2	20D201KJ3	130	170	200(185~225)	100	340	12000	13000	147	154	2000
20D221KJ2	20D221KJ3	140	180	220(198~242)	100	360	12000	13000	163	171	1800
20D241KJ2	20D241KJ3	150	200	240(216~264)	100	395	12000	13000	176	185	1650
20D271KJ2	20D271KJ3	175	225	270(243~297)	100	455	12000	13000	200	209	1500
20D301KJ2	20D301KJ3	190	250	300(270~330)	100	505	12000	13000	221	231	1300
20D331KJ2	20D331KJ3	210	275	330(297~363)	100	550	12000	13000	239	251	1200
20D361KJ2	20D361KJ3	230	300	360(324~396)	100	595	12000	13000	268	281	1100
20D391KJ2	20D391KJ3	250	320	390(351~429)	100	650	12000	13000	289	303	1000
20D431KJ2	20D431KJ3	275	350	430(387~473)	100	710	12000	13000	320	336	930
20D471KJ2	20D471KJ3	300	385	470(423~517)	100	775	12000	13000	368	385	850
20D511KJ2	20D511KJ3	320	415	510(459~561)	100	845	12000	13000	378	396	780
20D561KJ2	20D561KJ3	350	460	560(504~616)	100	920	12000	13000	399	418	710
20D621KJ2	20D621KJ3	385	505	620(558~682)	100	1025	12000	13000	410	429	650
20D681KJ2	20D681KJ3	420	560	680(612~748)	100	1120	12000	13000	420	440	600
20D751KJ2	20D751KJ3	460	615	750(675~825)	100	1240	12000	13000	441	462	530
20D781KJ2	20D781KJ3	485	640	780(702~858)	100	1290	12000	13000	462	484	510
20D821KJ2	20D821KJ3	510	670	820(738~902)	100	1355	12000	13000	483	506	500
20D911KJ2	20D911KJ3	550	745	910(819~1001)	100	1500	12000	13000	536	561	440
20D102KJ2	20D102KJ3	625	825	1000(900~1100)	100	1650	12000	13000	593	622	400
20D112KJ2	20D112KJ3	680	895	1100(990~1210)	100	1815	12000	13000	651	682	360
20D122KJ2	20D122KJ3	750	990	1200(1080~1320)	100	1980	12000	13000	693	726	350
20D142KJ2	20D142KJ3	880	1140	1400(1260~1540)	100	2310	12000	13000	823	862	340
20D162KJ2	20D162KJ3	1000	1280	1600(1400~1760)	100	2640	12000	13000	941	986	330
20D182KJ2	20D182KJ3	1100	1465	1800(1620~1980)	100	2970	12000	13000	1040	1089	320

1.VDR-20D270K to VDR-20D911K have **VDE** 85 &125 degree working temperature certification No: 40028836
2.VDR-20D180L to VDR-20D182K have **UL+CUL** 85 &125 degree working temperature certification No: E317616
3.VDR-20D180L to VDR-20D182K have **CQC** Security Regulation Certification No: 12001076476
4.VDR-20D180L to VDR-20D112K have **CQC** 125 degree working temperature certification No: 19001211523

ELECTRICAL CHARACTERISTIC

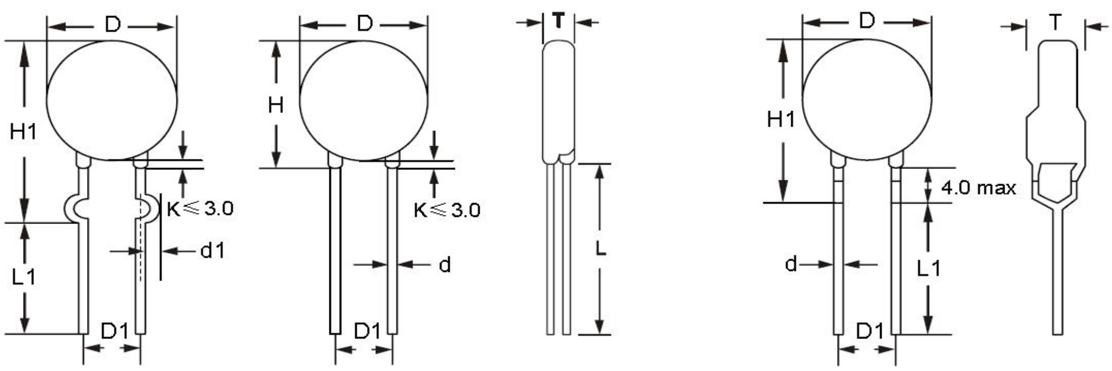
Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current	Energy 10/1000μS	Rated Powe
Standard	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)	1.2/50us & 8/20us combinationof wave,10KV /5KA sub 0 , 90 , 180 , 270 four phases, each phases of positive and negative 5 times Total	(J) High Surge	(W)
20D820KYC	50	65	82(73.8~90.2)	100	135	40 times	62	1.0
20D101KYC	60	85	100(90~110)	100	165	40 times	77	1.0
20D121KYC	75	100	120(108~132)	100	200	40 times	94	1.0
20D151KYC	95	125	150(135~165)	100	250	40 times	117	1.0
20D181KYC	115	150	180(162~198)	100	300	40 times	143	1.0
20D201KYC	130	170	200(185~225)	100	340	40 times	154	1.0
20D221KYC	140	180	220(198~242)	100	360	40 times	171	1.0
20D241KYC	150	200	240(216~264)	100	395	40 times	185	1.0
20D271KYC	175	225	270(243~297)	100	455	40 times	209	1.0
20D301KYC	190	250	300(270~330)	100	505	40 times	231	1.0
20D331KYC	210	275	330(297~363)	100	550	40 times	251	1.0
20D361KYC	230	300	360(324~396)	100	595	40 times	281	1.0
20D391KYC	250	320	390(351~429)	100	650	40 times	303	1.0
20D431KYC	275	350	430(387~473)	100	710	40 times	336	1.0
20D471KYC	300	385	470(423~517)	100	775	40 times	385	1.0
20D511KYC	320	415	510(459~561)	100	845	40 times	396	1.0
20D561KYC	350	460	560(504~616)	100	920	40 times	418	1.0
20D621KYC	385	505	620(558~682)	100	1025	40 times	429	1.0
20D681KYC	420	560	680(612~748)	100	1120	40 times	440	1.0
20D751KYC	460	615	750(675~825)	100	1240	40 times	462	1.0
20D781KYC	485	640	780(702~858)	100	1290	40 times	484	1.0
20D821KYC	510	670	820(738~902)	100	1355	40 times	506	1.0

1.VDR-20D270K to VDR-20D911K have **VDE** 85 &125 degree working temperature certification No: 40028836

2.VDR-20D180L to VDR-20D182K have **UL+CUL** 85 &125 degree working temperature certification No: E317616

3.VDR-20D180L to VDR-20D182K have **CQC** Security Regulation Certification No: 12001076476

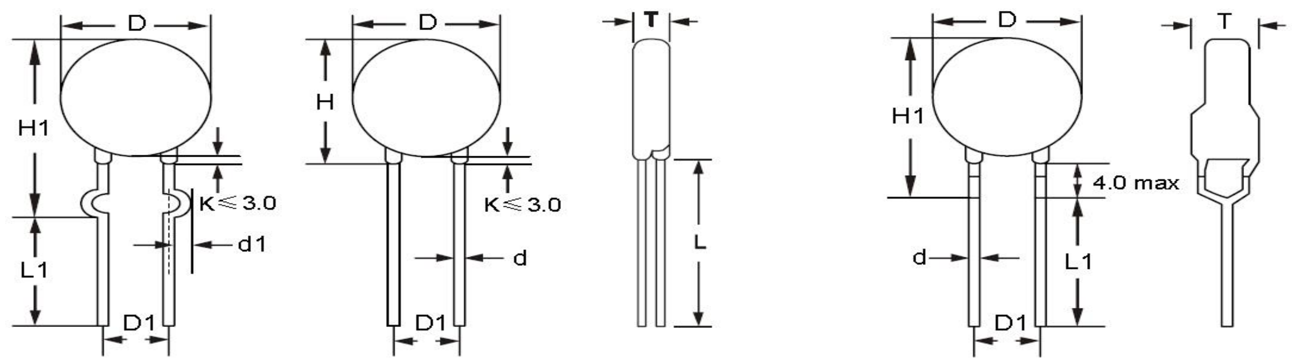
4.VDR-20D180L to VDR-20D112K have **CQC** 125 degree working temperature certification No: 19001211523



ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
25D820K	25D820KJ	50	65	82(73.8~90.2)	150	135	15000	18000	80	88	1.2	7700
25D101K	25D101KJ	60	85	100(90~110)	150	165	15000	18000	100	110	1.2	6300
25D121K	25D121KJ	75	100	120(108~132)	150	200	15000	18000	120	132	1.2	5200
25D151K	25D151KJ	95	125	150(135~165)	150	250	15000	18000	160	176	1.2	4300
25D181K	25D181KJ	115	150	180(162~198)	150	300	15000	18000	175	193	1.2	3500
25D201K	25D201KJ	130	170	200(185~225)	150	340	15000	18000	190	209	1.2	3200
25D221K	25D221KJ	140	180	220(198~242)	150	360	15000	18000	200	220	1.2	2900
25D241K	25D241KJ	150	200	240(216~264)	150	395	15000	18000	220	242	1.2	2650
25D271K	25D271KJ	175	225	270(243~297)	150	455	15000	18000	255	281	1.2	2400
25D301K	25D301KJ	190	250	300(270~330)	150	505	15000	18000	275	303	1.2	2100
25D331K	25D331KJ	210	275	330(297~363)	150	550	15000	18000	300	330	1.2	1900
25D361K	25D361KJ	230	300	360(324~396)	150	595	15000	18000	360	396	1.2	1750
25D391K	25D391KJ	250	320	390(351~429)	150	650	15000	18000	380	418	1.2	1600
25D431K	25D431KJ	275	350	430(387~473)	150	710	15000	18000	400	440	1.2	1500
25D471K	20D471KJ	300	385	470(423~517)	150	775	15000	18000	420	462	1.2	1400
25D511K	25D511KJ	320	415	510(459~561)	150	845	15000	18000	440	484	1.2	1250
25D561K	25D561KJ	350	460	560(504~616)	150	920	15000	18000	450	495	1.2	1150
25D621K	25D621KJ	385	505	620(558~682)	150	1025	15000	18000	460	506	1.2	1050
25D681K	25D681KJ	420	560	680(612~748)	150	1120	15000	18000	460	506	1.2	950
25D751K	25D751KJ	460	615	750(675~825)	150	1240	15000	18000	510	561	1.2	875
25D781K	25D781KJ	485	640	780(702~858)	150	1290	15000	18000	530	583	1.2	850
25D821K	25D821KJ	510	670	820(738~902)	150	1355	15000	18000	570	627	1.2	800
25D911K	25D911KJ	550	745	910(819~1001)	150	1500	15000	18000	620	682	1.2	700
25D102K	25D102KJ	625	825	1000(900~1100)	150	1650	15000	18000	685	754	1.2	650
25D112K	25D112KJ	680	895	1100(990~1210)	150	1815	15000	18000	700	770	1.2	600
25D122K	25D122KJ	750	990	1200(1080~1320)	150	1980	15000	18000	720	792	1.2	550
25D142K	25D142KJ	880	1140	1400(1260~1540)	150	2310	15000	18000	740	814	1.2	500
25D162K	25D162KJ	1000	1280	1600(1400~1760)	150	2640	15000	18000	770	847	1.2	450
25D182K	25D182KJ	1100	1465	1800(1620~1980)	150	2970	15000	18000	850	935	1.2	400

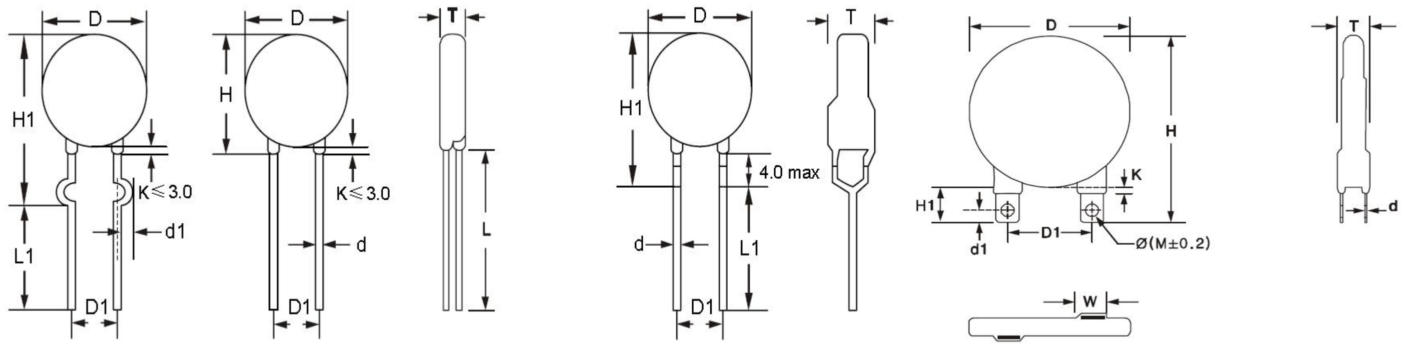
1. VDR-25D201K-VDR25D911K UL Security Certification No: E317616
2. VDR-25D The standard line diameter is 1.0 mm and the foot distance is 10 mm.



ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
32D201K	32D201KJ	130	170	200(185~225)	200	340	25000	30000	250	275	1.6	5200
32D221K	32D221KJ	140	180	220(198~242)	200	360	25000	30000	270	297	1.6	5150
32D241K	32D241KJ	150	200	240(216~264)	200	395	25000	30000	290	319	1.6	5100
32D271K	32D271KJ	175	225	270(243~297)	200	455	25000	30000	300	330	1.6	4800
32D301K	32D301KJ	190	250	300(270~330)	200	505	25000	30000	330	363	1.6	4550
32D331K	32D331KJ	210	275	330(297~363)	200	550	25000	30000	360	396	1.6	4300
32D361K	32D361KJ	230	300	360(324~396)	200	595	25000	30000	380	418	1.6	3900
32D391K	32D391KJ	250	320	390(351~429)	200	650	25000	30000	400	440	1.6	3200
32D431K	32D431KJ	275	350	430(387~473)	200	710	25000	30000	430	473	1.6	3100
32D471K	32D471KJ	300	385	470(423~517)	200	775	25000	30000	460	506	1.6	2800
32D511K	32D511KJ	320	415	510(459~561)	200	845	25000	30000	510	561	1.6	2700
32D561K	32D561KJ	350	460	560(504~616)	200	920	25000	30000	540	594	1.6	2550
32D621K	32D621KJ	385	505	620(558~682)	200	1025	25000	30000	570	627	1.6	2400
32D681K	32D681KJ	420	560	680(612~748)	200	1120	25000	30000	600	660	1.6	2200
32D751K	32D751KJ	460	615	750(675~825)	200	1240	25000	30000	620	682	1.6	2000
32D781K	32D781KJ	485	640	780(702~858)	200	1290	25000	30000	660	726	1.6	1900
32D821K	32D821KJ	510	670	820(738~902)	200	1355	25000	30000	700	770	1.6	1800
32D911K	32D911KJ	550	745	910(819~1001)	200	1500	25000	30000	750	825	1.6	1300
32D102K	32D102KJ	625	825	1000(900~1100)	200	1650	25000	30000	780	858	1.6	1200
32D112K	32D112KJ	680	895	1100(990~1210)	200	1815	25000	30000	810	891	1.6	1000
32D122K	32D122KJ	750	990	1200(1080~1320)	200	1980	25000	30000	910	1001	1.6	920
32D142K	32D142KJ	880	1140	1400(1260~1540)	200	2310	25000	30000	960	1056	1.6	800
32D162K	32D162KJ	1000	1280	1600(1400~1760)	200	2640	25000	30000	1020	1122	1.6	700
32D182K	32D182KJ	1100	1465	1800(1620~1980)	200	2970	25000	30000	1080	1188	1.6	600

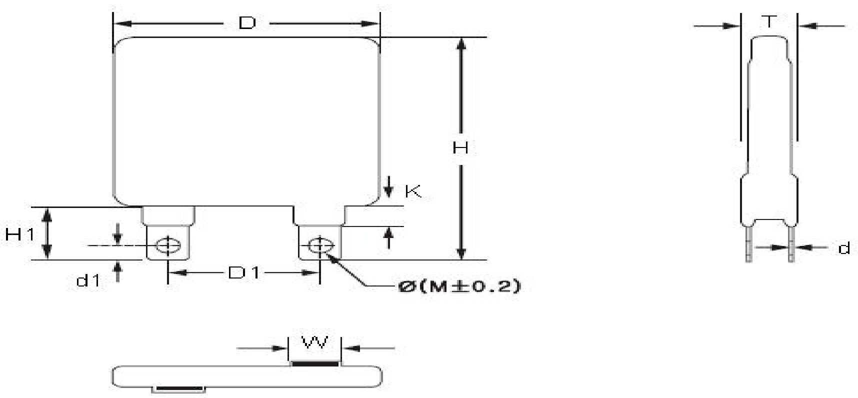
1. 32D201K-32D182K UL+CUL Security Certification No: E317616
2. 32D The standard line diameter is 1.2 mm and the foot distance is 20 mm.



ELECTRICAL CHARACTERISTIC

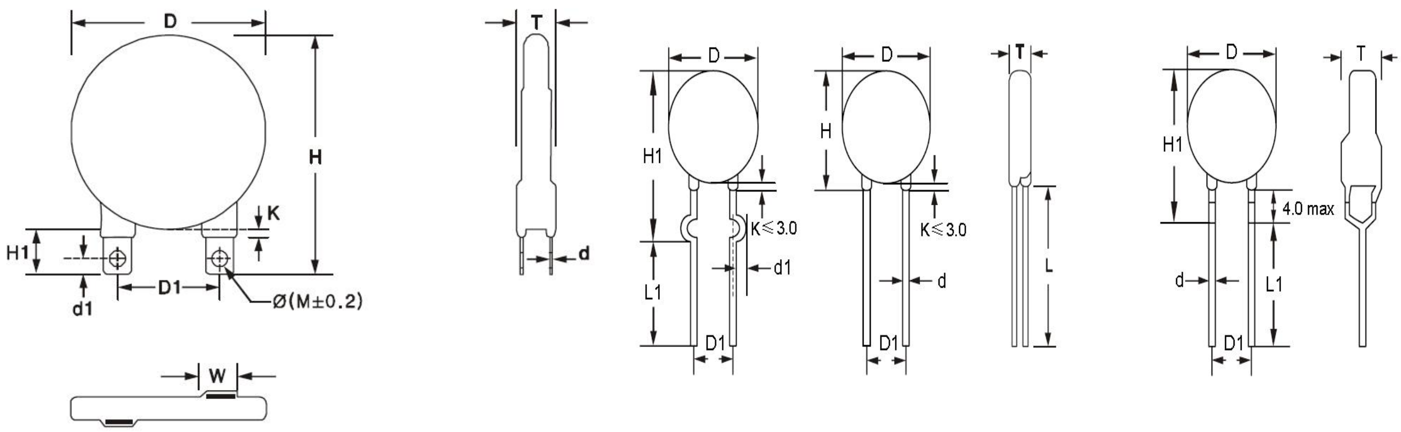
Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
34S130	34S130J	130	170	200(185~225)	300	340	40000	50000	330	363	2.1	8000
34S140	34S140J	140	180	220(198~242)	300	360	40000	50000	360	396	2.1	7800
34S150	34S150J	150	200	240(216~264)	300	395	40000	50000	390	429	2.1	7600
34S175	34S175J	175	225	270(243~297)	300	455	40000	50000	420	462	2.1	7200
34S190	34S190J	190	250	300(270~330)	300	505	40000	50000	460	506	2.1	7000
34S210	34S210J	210	275	330(297~363)	300	550	40000	50000	500	550	2.1	6400
34S230	34S230J	230	300	360(324~396)	300	595	40000	50000	510	561	2.1	6000
34S250	34S250J	250	320	390(351~429)	300	650	40000	50000	530	583	2.1	4800
34S275	34S275J	275	350	430(387~473)	300	710	40000	50000	600	660	2.1	4600
34S300	34S300J	300	385	470(423~517)	300	775	40000	50000	650	715	2.1	4100
34S320	34S320J	320	415	510(459~561)	300	845	40000	50000	700	770	2.1	4000
34S350	34S350J	350	460	560(504~616)	300	920	40000	50000	730	803	2.1	3800
34S385	34S385J	385	505	620(558~682)	300	1025	40000	50000	780	858	2.1	3600
34S420	34S420J	420	560	680(612~748)	300	1120	40000	50000	810	891	2.1	3300
34S460	34S460J	460	615	750(675~825)	300	1240	40000	50000	850	935	2.1	3000
34S485	34S485J	485	640	780(702~858)	300	1290	40000	50000	930	1023	2.1	2850
34S510	34S510J	510	670	820(738~902)	300	1355	40000	50000	970	1067	2.1	2700
34S550	34S550J	550	745	910(819~1001)	300	1500	40000	50000	1050	1155	2.1	2100
34S625	34S625J	625	825	1000(900~1100)	300	1650	40000	50000	1120	1232	2.1	1700
34S680	34S680J	680	895	1100(990~1210)	300	1815	40000	50000	1250	1375	2.1	1520
34S750	34S750J	750	990	1200(1080~1320)	300	1980	40000	50000	1340	1474	2.1	1400
34S880	34S880J	880	1140	1400(1260~1540)	300	2310	40000	50000	1400	1540	2.1	1200
34S1000	34S1000J	1000	1280	1600(1400~1760)	300	2640	40000	50000	1500	1650	2.1	1100
34S1100	34S1100J	1100	1465	1800(1620~1980)	300	2970	40000	50000	1600	1760	2.1	1000

1. 34S130-34S680 UL Security Certification No: E317616
2. 34S The standard line diameter is 1.2 mm and the foot distance is 20 mm.
3. 34S is suitable for electrodes.
4. 34S SPD is composed of two chips in parallel. The surge can reach 60KA-10KA.



ELECTRICAL CHARACTERISTIC

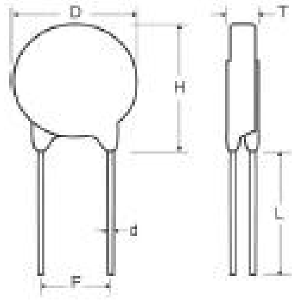
Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP(A)	VC(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
40D201K	40D201KJ	130	170	200(185~225)	300	340	40000	50000	370	407	2.1	8400
40D221K	40D221KJ	140	180	220(198~242)	300	360	40000	50000	400	440	2.1	8200
40D241K	40D241KJ	150	200	240(216~264)	300	395	40000	50000	430	473	2.1	8000
40D271K	40D271KJ	175	225	270(243~297)	300	455	40000	50000	470	517	2.1	7600
40D301K	40D301KJ	190	250	300(270~330)	300	505	40000	50000	510	561	2.1	7300
40D331K	40D331KJ	210	275	330(297~363)	300	550	40000	50000	550	605	2.1	6700
40D361K	40D361KJ	230	300	360(324~396)	300	595	40000	50000	570	627	2.1	6200
40D391K	40D391KJ	250	320	390(351~429)	300	650	40000	50000	590	649	2.1	5100
40D431K	40D431KJ	275	350	430(387~473)	300	710	40000	50000	660	726	2.1	4900
40D471K	40D471KJ	300	385	470(423~517)	300	775	40000	50000	720	792	2.1	4300
40D511K	40D511KJ	320	415	510(459~561)	300	845	40000	50000	770	847	2.1	4200
40D561K	40D561KJ	350	460	560(504~616)	300	920	40000	50000	810	891	2.1	4000
40D621K	40D621KJ	385	505	620(558~682)	300	1025	40000	50000	860	946	2.1	3800
40D681K	40D681KJ	420	560	680(612~748)	300	1120	40000	50000	900	990	2.1	3500
40D751K	40D751KJ	460	615	750(675~825)	300	1240	40000	50000	940	1034	2.1	3200
40D781K	40D781KJ	485	640	780(702~858)	300	1290	40000	50000	980	1078	2.1	3000
40D821K	40D821KJ	510	670	820(738~902)	300	1355	40000	50000	1080	1188	2.1	2900
40D911K	40D911KJ	550	745	910(819~1001)	300	1500	40000	50000	1150	1265	2.1	2200
40D102K	40D102KJ	625	825	1000(900~1100)	300	1650	40000	50000	1260	1386	2.1	1800
40D112K	40D112KJ	680	895	1100(990~1210)	300	1815	40000	50000	1380	1518	2.1	1600
40D122K	40D122KJ	750	990	1200(1080~1320)	300	1980	40000	50000	1460	1606	2.1	1500
40D142K	40D142KJ	880	1140	1400(1260~1540)	300	2310	40000	50000	1550	1705	2.1	1300
40D162K	40D162KJ	1000	1280	1600(1400~1760)	300	2640	40000	50000	1700	1870	2.1	1150
40D182K	40D182KJ	1100	1465	1800(1620~1980)	300	2970	40000	50000	1800	1980	2.1	1250



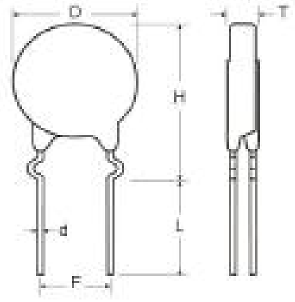
D5 to D25 Dimensions

產品尺寸

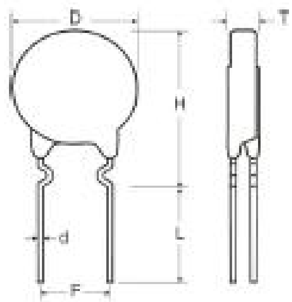
S: Straight Lead



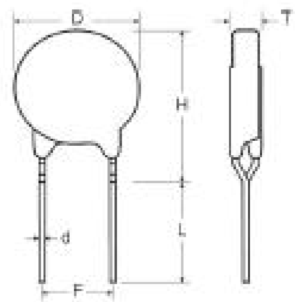
C: Out Crimped Lead



I: Inner Crimped Lead



Y: Y Kink Lead



Unit: mm

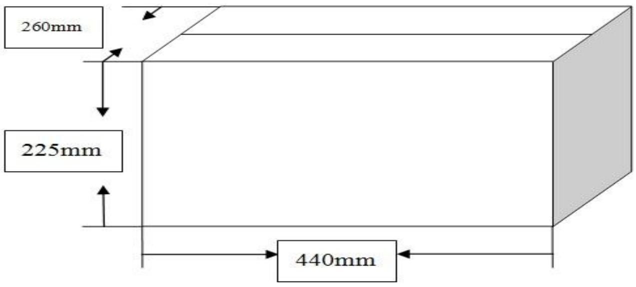
Size	D max	H max		d ±0.05	F ±0.8	L min
Lead	All	S	C/I/Y	All	All	All
D05	7	10	13	0.6	5	20
D07	9	12	15	0.6	5	20
D10	13	16	19.5	0.8	5	20
					7.5	
D14	17	20	23	0.8	7.5	20
D20	23	27	30	0.8	7.5	20
				1.0	10	
D25	28	31	35	1.0	12.5	20

T Thickness (Max.) unit: mm

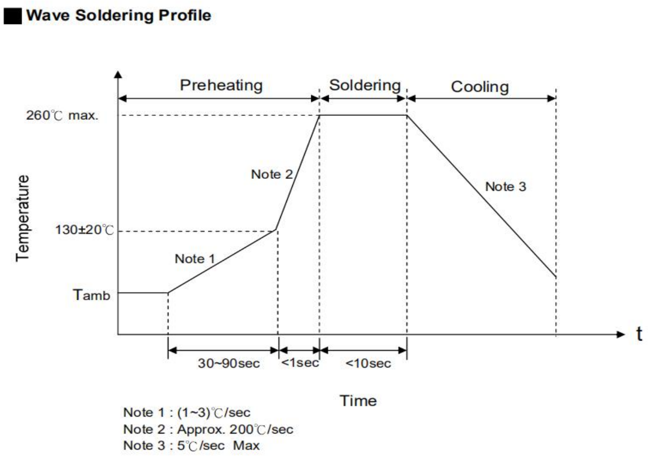
Part Code	D05	D07	D10	D14	D20	D25
182K	---	---	12.5	12.5	15.6	16.6
152K	---	---	11.0	11.0	13.2	13.5
122K	---	---	---	---	---	11.5
112K	---	---	8.5	8.5	10.1	10.8
102K	---	---	8.3	8.3	9.5	10.5
911K	---	---	8.1	8.1	9.0	9.6
821K	---	6.9	7.9	7.9	8.5	9.1
781K	---	6.7	7.7	7.7	8.4	8.7
751K	6.5	6.5	7.5	7.5	8.2	8.5
681K	6.4	6.4	7.1	7.1	7.8	8.3
621K	6.4	6.4	7.1	7.1	7.5	7.6
561K	6.2	6.2	6.7	6.7	7.0	7.3
511K	5.8	5.8	6.4	6.4	6.8	7.0
471K	5.6	5.6	6.1	6.1	6.6	6.8
431K	5.3	5.3	5.9	5.9	6.4	6.5
391K	5.1	5.1	5.7	5.7	6.2	6.3
361K	5.0	5.0	5.5	5.5	6.2	6.2
331K	4.8	4.8	5.3	5.3	5.9	6.1
301K	4.7	4.7	5.1	5.1	5.7	6.1
271K	4.5	4.5	5.0	5.0	5.6	6.0
251K	4.4	4.4	4.9	4.9	5.5	---
241K	4.3	4.3	4.8	4.8	5.4	5.7
221K	4.2	4.2	4.7	4.7	5.3	5.6
201K	4.1	4.1	4.5	4.5	5.0	5.5
181K	4.1	4.1	4.5	4.5	5.0	---
151K	4.8	4.8	5.2	5.2	5.6	---
121K	4.5	4.5	4.9	4.9	5.3	---
101K	4.3	4.3	4.7	4.7	5.1	---
820K	4.1	4.1	4.5	4.5	4.9	---
680K	4.5	5.2	5.3	5.3	5.8	---
560K	4.5	5.0	5.1	5.1	5.7	---
470K	4.5	4.9	5.0	5.0	5.6	---
390K	4.5	4.8	4.9	4.9	5.5	---
330K	4.5	4.9	5.0	5.0	5.4	---
270K	4.5	4.7	4.8	4.8	5.3	---
220K	4.5	4.6	4.7	4.7	5.2	---
180L	4.5	4.5	4.6	4.6	5.1	---
120M	4.3	4.3	4.5	4.5	---	---
8R0M	4.3	4.3	---	---	---	---

Packing details

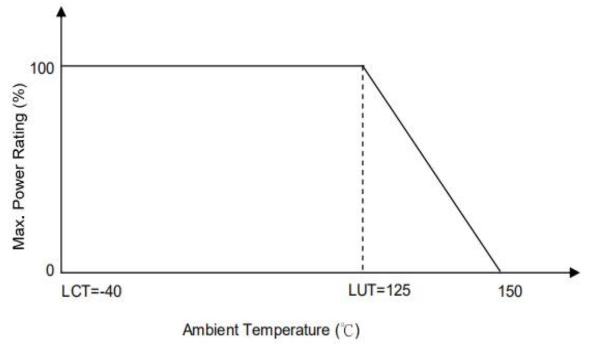
规格	批号	型号	单位	每袋数量	小箱装数量		大箱包装数量	
05D	全部	180L~751K	pcs	1000	*10袋	10000	2小箱	2000
07D	全部	180L~821K	pcs	1000	*10袋	10000	2小箱	20000
10D	全部	180L~112K	pcs	500	*10袋	5000	2小箱	10000
14D	全部	180L~182K	pcs	500	*10袋	5000	2小箱	10000
20D	全部	180L~821K	pcs	250	*10袋	2500	2小箱	5000
25D	全部	820K~182K	pcs	100	*5袋	500	2小箱	1000
32D	全部	201K~182K	pcs	100	*5袋	500	2小箱	1000
34S	全部	201K~182K	pcs		1小箱	16	5小箱	80
40D	全部	201K~182K	pcs		1小箱	16	5小箱	80
05D-G	全部	180L~751K	pcs		1小箱	1000	20小箱	20000
07D-G	全部	180L~821K	pcs		1小箱	1000	16小箱	16000
10D-G	全部	180L~112K	pcs		1小箱	1000	12小箱	12000



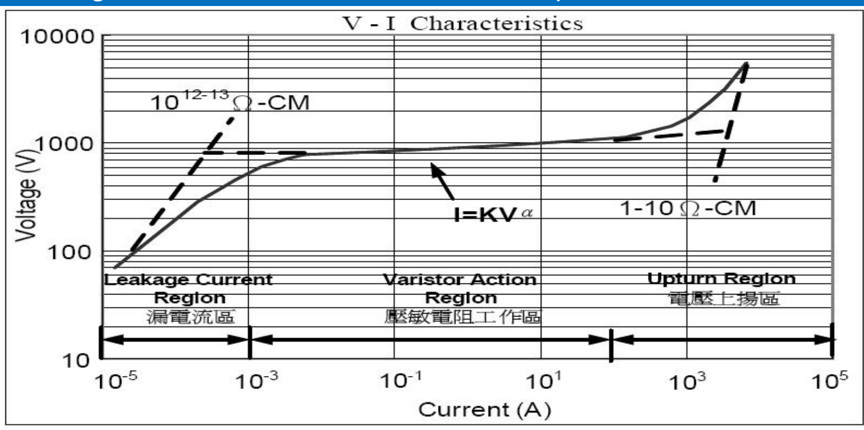
Soldering Recommendation 焊接建议 & Power Derating Curve 功率降额曲线



When operating temperature exceeds125 , the power, the Max. continuous operation Voltage, the Max. Surge Current and the Max. Energy should be derated as below figure, the derated coefficient is -4%



The maximum voltage between two terminals with the specification standard impulse current.



Taping and Dimensions

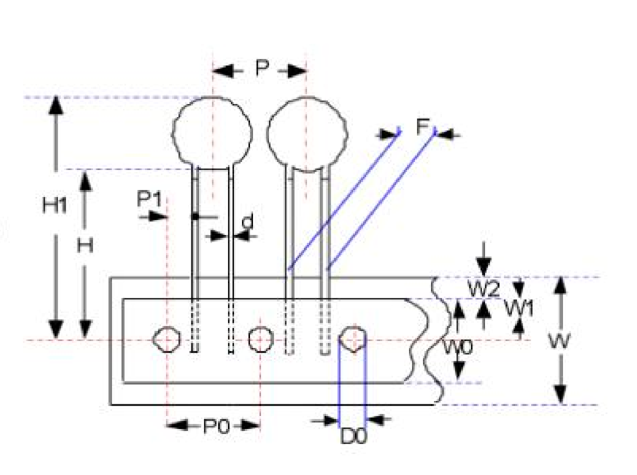


图1 不跳格

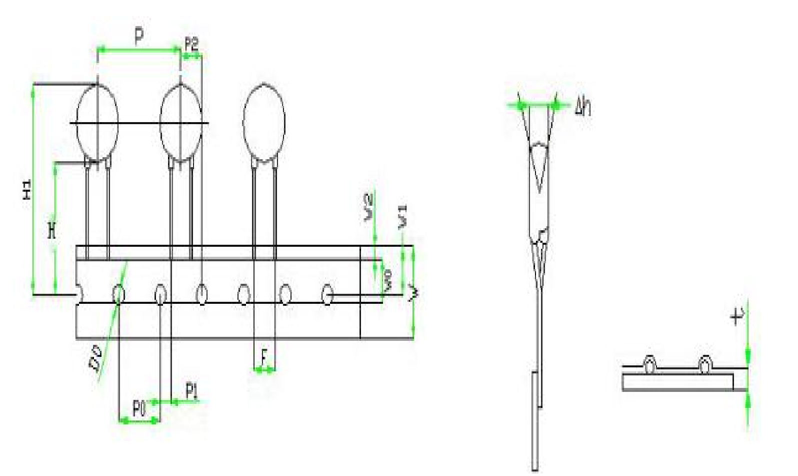


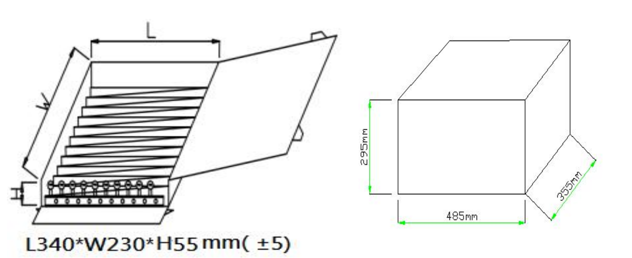
图2 跳格

编带代码	本体尺寸	P_0	F	P	P_1	H		H_1	d	W_0	W_1	W2	W	h	D_0	t
		±0.3	±1	±1	±1	直脚	K脚	Max	±0.05	±1	±0.75	Max	±1	Max	±0.2	±0.2
P_0: 12.7	05D	12.7	5.0	12.7	3.55	20±2	16±2	28	0.6	10	9	3	18	2	4	0.45
	07D	12.7	5.0	12.7	3.55	20±2	16±2	30	0.6	10	9	3	18	2	4	0.45
	10D	12.7	7.5	12.7	3.55	20±2	16±2	33.5	0.8	10	9	3	18	2	4	0.45
	14D	12.7	7.5	25.4	8.55	20±2	16±2	38	0.8	10	9	3	18	2	4	0.45
	20D	12.7	10.0	25.4	7.2	20±2	16±2	40.5	1.0	10	9	3	18	2	4	0.45
P0: 15.0	07D	15.0	5.0	15.0	4.7	20±2	16±2	30	0.6	10	9	3	18	2	4	0.45
	10D	15.0	7.5	15.0	3.35	20±2	16±2	33.5	0.8	10	9	3	18	2	4	0.45
	14D	15.0	7.5	30.0	3.35	20±2	16±2	38	0.8	10	9	3	18	2	4	0.45
	20D	15.0	10.0	30.0	9.5	20±2	16±2	40.5	1.0	10	9	3	18	2	4	0.45

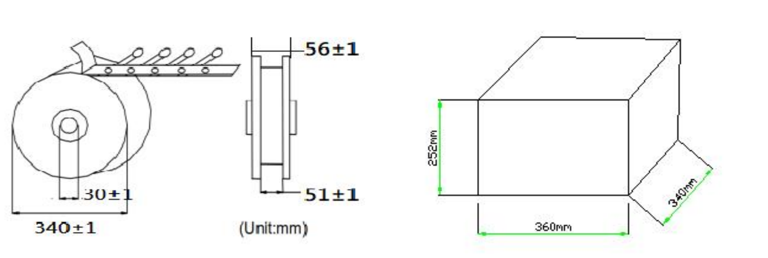
注：05D&07D&10D 不跳格，14D以上跳格。

Packaging

■ Ammo Packing（TA）



■ **Reel Packing （TR）**



Quantities Per Packing 包装数量 Unit:pcs

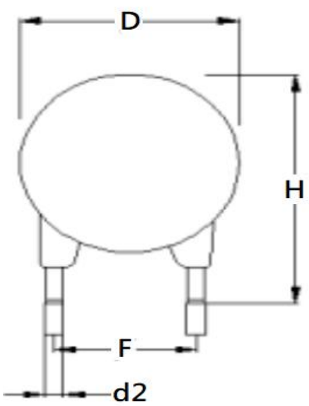
Part No.		Ammo	Reel
05D	180L-241K	2000	-
	271K-681K	1500	-
07D	180L-241K	2000	2000
	271K-681K	1000	1500
10D	180L-681K	1000	1000
	751K-112K	800	800

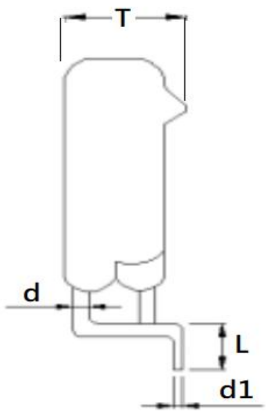
Part No.		Ammo	Reel
14D	180L-681K	500	500
	751K-112K	400	400
20D	180L-471K	500	500

Period of Storage: 1 year. 贮存期：1年。

ELECTRICAL CHARACTERISTIC

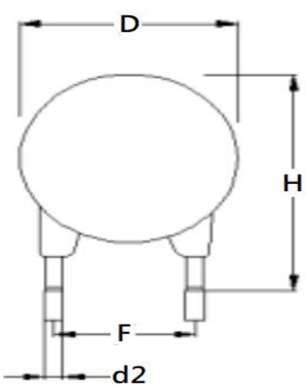
Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V0.1mA(V)	IP(A)	VC(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
05D180L	05D180LJ	11	14	18(15.3~20.7)	1	40	100	250	0.4	0.6	0.01	1400
05D220K	05D220KJ	14	18	22(19.8~24.2)	1	48	100	250	0.5	0.7	0.01	1150
05D270K	05D270KJ	17	22	27(24.3-29.7)	1	60	100	250	0.6	0.9	0.01	930
05D330K	05D330KJ	20	26	33(29.7~36.3)	1	73	100	250	0.8	1.1	0.01	760
05D390K	05D390KJ	25	31	39(35.1~42.9)	1	80	100	250	0.9	1.2	0.01	640
05D470K	05D470KJ	30	38	47(42.3~51.7)	1	104	100	250	1.1	1.5	0.01	530
05D560K	05D560KJ	35	45	56(50.4~61.6)	1	123	100	250	1.3	1.8	0.01	450
05D680K	05D680KJ	40	56	68(61.2~74.8)	1	145	100	250	1.6	2.2	0.01	370
05D820K	05D820KJ	50	65	82(73.8~90.2)	5	150	400	800	2.5	4.0	0.1	300
05D101K	05D101KJ	60	85	100(90~110)	5	177	400	800	3.0	4.1	0.1	250
05D121K	05D121KJ	75	100	120(108~132)	5	210	400	800	4.0	4.9	0.1	210
05D151K	05D151KJ	95	125	150(135~165)	5	260	400	800	4.1	6.5	0.1	165
05D181K	05D181KJ	115	150	180(162~198)	5	320	400	800	4.9	7.5	0.1	140
05D201K	05D201KJ	130	170	200(185~225)	5	340	400	800	6.5	8.5	0.1	125
05D221K	05D221KJ	140	180	220(198~242)	5	380	400	800	7.5	9.0	0.1	110
05D241K	05D241KJ	150	200	240(216~264)	5	415	400	800	8.0	10.5	0.1	100
05D271K	05D271KJ	175	225	270(243~297)	5	475	400	800	8.5	11.0	0.1	95
05D301K	05D301KJ	190	250	300(270~330)	5	520	400	800	9.0	12.0	0.1	85
05D331K	05D331KJ	210	275	330(297~363)	5	570	400	800	9.5	13.0	0.1	75
05D361K	05D361KJ	230	300	360(324~396)	5	620	400	800	10.0	16.0	0.1	70
05D391K	05D391KJ	250	320	390(351~429)	5	675	400	800	12.0	17.0	0.1	65
05D431K	05D431KJ	275	350	430(387~473)	5	745	400	800	13.0	20.0	0.1	60
05D471K	05D471KJ	300	385	470(423~517)	5	810	400	800	15.0	21.0	0.1	55
05D511K	05D511KJ	320	415	510(459~561)	5	845	400	800	16.0	22.5	0.1	50
05D561K	05D561KJ	350	460	560(504~616)	5	920	400	800	16.5	24.0	0.1	45
05D621K	05D621KJ	385	505	620(558~682)	5	1025	400	800	21.0	25.0	0.1	40

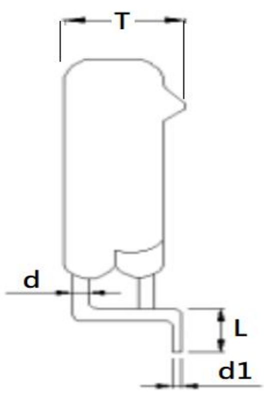




ELECTRICAL CHARACTERISTIC

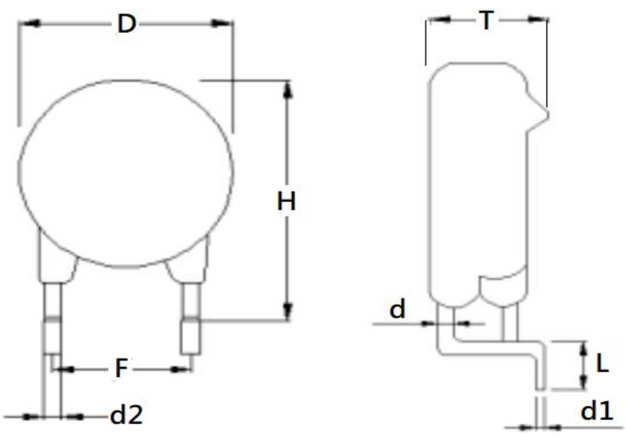
Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP (A)	VC(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
07D180L	07D180LJ	11	14	18(15.3~20.7)	2.5	36	250	500	0.9	2.0	0.02	2800
07D220K	07D220KJ	14	18	22(19.8~24.2)	2.5	43	250	500	1.1	2.4	0.02	2300
07D270K	07D270KJ	17	22	27(24.3-29.7)	2.5	53	250	500	1.4	3.0	0.02	1800
07D330K	07D330KJ	20	26	33(29.7~36.3)	2.5	65	250	500	1.7	3.5	0.02	1500
07D390K	07D390KJ	25	31	39(35.1~42.9)	2.5	77	250	500	2.1	4.0	0.02	1300
07D470K	07D470KJ	30	38	47(42.3~51.7)	2.5	93	250	500	2.5	5.0	0.02	1100
07D560K	07D560KJ	35	45	56(50.4~61.6)	2.5	110	250	500	3.1	6.0	0.02	890
07D680K	07D680KJ	40	56	68(61.2~74.8)	2.5	135	250	500	3.6	7.0	0.02	740
07D820K	07D820KJ	50	65	82(73.8~90.2)	10	135	1200	1750	5.5	10	0.25	600
07D101K	07D101KJ	60	85	100(90~110)	10	165	1200	1750	6.5	12	0.25	500
07D121K	07D121KJ	75	100	120(108~132)	10	200	1200	1750	7.8	12	0.25	420
07D151K	07D151KJ	95	125	150(135~165)	10	250	1200	1750	9.7	13	0.25	330
07D181K	07D181KJ	115	150	180(162~198)	10	300	1200	1750	11.7	16	0.25	280
07D201K	07D201KJ	130	170	200(185~225)	10	340	1200	1750	13	17	0.25	250
07D221K	07D221KJ	140	180	220(198~242)	10	360	1200	1750	14	19	0.25	230
07D241K	07D241KJ	150	200	240(216~264)	10	395	1200	1750	15	21	0.25	210
07D271K	07D271KJ	175	225	270(243~297)	10	455	1200	1750	18	24	0.25	185
07D301K	07D301KJ	190	250	300(270~330)	10	505	1200	1750	20	26	0.25	165
07D331K	07D331KJ	210	275	330(297~363)	10	550	1200	1750	23	28	0.25	150
07D361K	07D361KJ	230	300	360(324~396)	10	595	1200	1750	25	32	0.25	140
07D391K	07D391KJ	250	320	390(351~429)	10	650	1200	1750	25	35	0.25	130
07D431K	07D431KJ	275	350	430(387~473)	10	710	1200	1750	28	40	0.25	115
07D471K	07D471KJ	300	385	470(423~517)	10	775	1200	1750	30	42	0.25	105
07D511K	07D511KJ	320	415	510(459~561)	10	845	1200	1750	30	45	0.25	100
07D561K	07D561KJ	350	460	560(504~616)	10	920	1200	1750	30	49	0.25	90
07D621K	07D621KJ	385	505	620(558~682)	10	1025	1200	1750	33	55	0.25	80
07D681K	07D681KJ	420	560	680(612~748)	10	1120	1200	1750	33	60	0.25	75
07D751K	07D751KJ	460	615	750(675~825)	10	1240	1200	1750	65	67	0.25	70
07D781K	07D781KJ	485	640	780(702~858)	10	1290	1200	1750	65	67	0.25	70
07D821K	07D821KJ	510	670	820(738~902)	10	1355	1200	1750	65	70	0.25	60





ELECTRICAL CHARACTERISTIC

Part Number		Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current		Energy 10/1000μS		Rated Powe	Typical Capacitance (Reference)
Standard	High Surge	AC (V)	DC (V)	V1mA(V)	IP (A)	VC (V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHzPF
10D180L	10D180LJ	11	14	18(15.3~20.7)	5	36	500	1000	2.1	3	0.05	5600
10D220K	10D220KJ	14	18	22(19.8~24.2)	5	43	500	1000	2.5	5	0.05	4500
10D270K	10D270KJ	17	22	27(24.3~29.7)	5	53	500	1000	3.0	6	0.05	3700
10D330K	10D330KJ	20	26	33(29.7~36.3)	5	65	500	1000	4.0	7	0.05	3000
10D390K	10D390KJ	25	31	39(35.1~42.9)	5	77	500	1000	4.6	9	0.05	2400
10D470K	10D470KJ	30	38	47(42.3~51.7)	5	93	500	1000	5.5	11	0.05	2100
10D560K	10D560KJ	35	45	56(50.4~61.6)	5	110	500	1000	7.0	13	0.05	1800
10D680K	10D680KJ	40	56	68(61.2~74.8)	5	135	500	1000	8.2	15	0.05	1500
10D820K	10D820KJ	50	65	82(73.8~90.2)	25	135	2500	3500	12	17	0.4	1200
10D101K	10D101KJ	60	85	100(90~110)	25	165	2500	3500	15	18	0.4	1000
10D121K	10D121KJ	75	100	120(108~132)	25	200	2500	3500	18	21	0.4	830
10D151K	10D151KJ	95	125	150(135~165)	25	250	2500	3500	22	25	0.4	670
10D181K	10D181KJ	115	150	180(162~198)	25	300	2500	3500	27	30	0.4	560
10D201K	10D201KJ	130	170	200(185~225)	25	340	2500	3500	30	35	0.4	500
10D221K	10D221KJ	140	180	220(198~242)	25	360	2500	3500	32	39	0.4	450
10D241K	10D241KJ	150	200	240(216~264)	25	395	2500	3500	35	42	0.4	420
10D271K	10D271KJ	175	225	270(243~297)	25	455	2500	3500	37	49	0.4	370
10D301K	10D301KJ	190	250	300(270~330)	25	505	2500	3500	40	54	0.4	330
10D331K	10D331KJ	210	275	330(297~363)	25	550	2500	3500	43	58	0.4	300
10D361K	10D361KJ	230	300	360(324~396)	25	595	2500	3500	47	65	0.4	280
10D391K	10D391KJ	250	320	390(351~429)	25	650	2500	3500	60	70	0.4	260
10D431K	10D431KJ	275	350	430(387~473)	25	710	2500	3500	65	80	0.4	230
10D471K	10D471KJ	300	385	470(423~517)	25	775	2500	3500	67	85	0.4	210
10D511K	10D511KJ	320	415	510(459~561)	25	845	2500	3500	69	90	0.4	200
10D561K	10D561KJ	350	460	560(504~616)	25	920	2500	3500	70	92	0.4	180
10D621K	10D621KJ	385	505	620(558~682)	25	###	2500	3500	72	95	0.4	160
10D681K	10D681KJ	420	560	680(612~748)	25	###	2500	3500	75	98	0.4	150



MULTILAYER CHIP VARISTOR

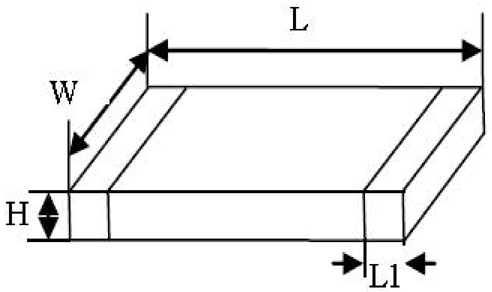
For ESD / Surge ProtectionFeatures Size

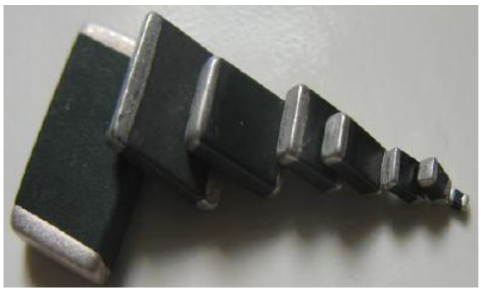
Features

- ●Series size from 0402 to 2220,(3220)08CH
- ●Working Voltage from 2V to 560V dc
- ●Low cap design (0.2pf) for fast data transmission
- ●Fast response time (<0.5ns)
- ●Low leakage current
- ●High surge current ability
- ●Suitable for ESD protection
- ●Bidirectional clamping, high energy
- ●Wide Operating temperature range from -55℃-125℃
- ●Good Temperature Coefficient

Size

Model	0402 (1005)	0603 (1608)	0805 (2012)	0806 (2015)	1206 (3216)	1210 (3225)	1812 (4532)	2220 (5650)	3220(8050)
L	1.00±0.15	1.60±0.20	2.00±0.20	2.20±0.20	3.20±0.30	3.20±0.30	4.50±0.35	5.60±0.40	8.00±0.40
W	0.50±0.15	0.80±0.20	1.20±0.20	1.70±0.20	1.60±0.20	2.50±0.30	3.20±0.30	5.00±0.40	5.00±0.40
H	0.70max	0.90max	1.30max	1.80max	1.60max	2.00max	2.40max	3.50max	3.50max





High surge absorption series

MVR	0603	—		8R0	G
Series name	Chip size 0603(1608) 0805(2012) 0806(2015) 1206(3216) 1210(3225) 1812(4532) 2220(5750) 3220(8050) 4032(1080)			Varistor voltage (Breakdown voltage 8R0=8V 270=27V 471=470V	High surge absorption series

MULTILAYER CHIP VARISTOR For ESD / Surge ProtectionFeatures Size

0603 Size

Part Number		Working Voltage AC	Working Voltage DC	Breakdown Voltage @ 1mA DC		Peak Current 8/20uS	Clamping Voltage 8/20uS		Surge Voltage
		VAC	VDC		VB	Ip	A	V	V
0603	MVR0603-3R3G	1.4	2	3	2.4-3.6	20A	1	9	100V
	MVR0603-5R0G	2.4	3.3	5	4.0-6.0	20A	1	12	
	MVR0603-8R0G	4	5.5	5.5	6.6-9.9	30A	1	18	
	MVR0603-120G	7	9	12	10.2-13.8	30A	1	24	
	MVR0603-180G	11	14	18	15.3-21.7	30A	1-10	30	
	MVR0603-220G	12	16	22	19.8-24.2	30A	1-10	36	
	MVR0603-240G	14	18	24	21.6-26.4	30A	1-10	38	
	MVR0603-270G	17	22	27	24.3-29.7	30A	1-10	44	
	MVR0603-300G	18	24	30	27.2-33.0	30A	1-10	48	
	MVR0603-330G	20	26	33	29.7-36.3	30A	1-10	54	
	MVR0603-360G	22	28	36	32.7-39.6	30A	1-10	59	
	MVR0603-390G	25	30	39	35.1-42.9	30A	1-10	65	
	MVR0603-420G	26	33	42	38.1-46.2	30A	1-10	72	
	MVR0603-470G	30	38	47	42.3-51.7	30A	1-10	77	

0805 Size

Part Number		Working Voltage AC	Working Voltage DC	Breakdown Voltage @ 1mA DC		Peak Current 8/20uS	Clamping Voltage 8/20uS		Surge Voltage
		VAC	VDC		VB	Ip	A	V	V
0805	MVR0805-3R3G	1.4	2	3	2.4-3.6	80A	1-10	9	300V
	MVR0805-5R0G	2.4	3.3	5	4.0-6.0	80A	1-10	12	
	MVR0805-8R0G	4	5.5	5.5	6.6-9.9	80A	1-10	18	
	MVR0805-120G	7	9	12	10.2-13.8	100A	1-10	24	
	MVR0805-180G	11	14	18	15.3-21.7	100A	1-10	30	
	MVR0805-220G	12	16	22	19.8-24.2	100A	1-10	36	
	MVR0805-240G	14	18	24	21.6-26.4	100A	1-10	38	
	MVR0805-270G	17	22	27	24.3-29.7	100A	1-10	44	
	MVR0805-300G	18	24	30	27.2-33.0	100A	1-10	48	
	MVR0805-330G	20	26	33	29.7-36.3	100A	1-10	54	
	MVR0805-360G	22	28	36	32.7-39.6	100A	1-10	59	
	MVR0805-390G	25	30	39	35.1-42.9	100A	1-10	65	
	MVR0805-420G	26	33	42	38.1-46.2	100A	1-10	72	
	MVR0805-470G	30	38	47	42.3-51.7	100A	1-10	77	
	MVR0805-560G	35	45	56	50.4-61.6	80A	1-10	90	
0805	MVR0805-121G	75	100	120	108-132	100A	1-10	200	≥600V
	MVR0805-171G	110	140	170	154-187	100A	1-10	300	
	MVR0805-201G	140	180	220	198-242	100A	1-10	360	
	MVR0805-241G	150	200	240	216-264	100A	1-10	395	
	MVR0805-271G	175	225	270	243-297	100A	1-10	455	
	MVR0805-361G	230	300	360	324-396	100A	1-10	595	
	MVR0805-391G	250	320	270	351-429	200A	1-10	650	
	MVR0805-431G	275	350	430	387-473	200A	1-10	710	
	MVR0805-471G	300	385	470	423-517	500A	1-10	775	

MULTILAYER CHIP VARISTOR For ESD / Surge ProtectionFeatures Size

0806 Size

Part Number		Working Voltage AC	Working Voltage DC	Breakdown Voltage @ 1mA DC		Peak Current 8/20uS	Clamping Voltage 8/20uS		Surge Voltage
		VAC	VDC		VB	Ip	A	V	V
0806	MVR0806-241G	150	200	240	216-264	200A	1-10	395	≥600V
	MVR0806-271G	175	225	270	243-297	200A	1-10	455	
	MVR0806-431G	275	350	430	387-473	200A	1-10	710	

1206 Size

Part Number		Working Voltage AC	Working Voltage DC	Breakdown Voltage @ 1mA DC		Peak Current 8/20uS	Clamping Voltage 8/20uS		Surge Voltage
		VAC	VDC		VB	Ip	A	V	V
1206	MVR1206-5R0G	2.4	3.3	5	4.0-6.0	100A/200A	1-10	12	≥500V
	MVR1206-8R0G	4	5.5	5.5	6.6-9.9	100A/200A	1-10	18	
	MVR1206-120G	7	9	12	10.2-13.8	120A/200A	1-10	24	
	MVR1206-180G	11	14	18	15.3-21.7	120A/200A	1-10	30	
	MVR1206-220G	12	16	22	19.8-24.2	120A/200A	1-10	36	
	MVR1206-240G	14	18	24	21.6-26.4	120A/200A	1-10	38	
	MVR1206-270G	17	22	27	24.3-29.7	120A/200A	1-10	44	
	MVR1206-300G	18	24	30	27.2-33.0	120A/200A	1-10	48	
	MVR1206-330G	20	26	33	29.7-36.3	120A/200A	1-10	54	
	MVR1206-360G	22	28	36	32.7-39.6	120A/200A	1-10	59	
	MVR1206-390G	25	30	39	35.1-42.9	120A/200A	1-10	65	
	MVR1206-420G	26	33	42	38.1-46.2	120A/200A	1-10	72	
	MVR1206-470G	30	38	47	42.3-51.7	120A/200A	1-10	77	
	MVR1206-560G	35	45	56	50.4-61.6	120A/200A	1-10	90	
	MVR1206-680G	40	56	68	61.2-74.8	120A/200A	1-10	110	
	MVR1206-760G	45	60	76	69.1-83.6	120A/200A	1-10	126	
	MVR1206-820G	50	65	82	73.8-90.2	120A/200A	1-10	135	
	MVR1206-101G	60	85	100	90-110	100A/200A	1-10	165	
1206 High V	MVR1206-121G	75	100	120	108-132	200A	1-10	200	≥600V
	MVR1206-171G	110	140	170	154-187	200A	1-10	300	
	MVR1206-201G	130	170	200	185-225	200A	1-10	340	
	MVR1206-221G	140	180	220	198-242	200A	1-10	360	
	MVR1206-241G	150	200	240	216-264	200A	1-10	395	
	MVR1206-271G	175	225	270	243-297	200A	1-10	455	
	MVR1206-391G	250	320	270	351-429	200A	1-10	650	
	MVR1206-431G	275	350	430	387-473	200A	1-10	710	
	MVR1206-471G	300	385	470	423-517	200A	1-10	775	
	MVR1206-391H	250	320	270	351-429	350A	1-10	650	≥1000V
	MVR1206-431H	275	350	430	387-473	350A	1-10	710	

MULTILAYER CHIP VARISTOR For ESD / Surge ProtectionFeatures Size

1210 Size

Part Number		Working Voltage		Breakdown Voltage		Peak Current	Clamping Voltage		Surge Voltage
		AC	DC	@ 1mA DC		8/20uS	8/20uS		
		VAC	VDC		VB	Ip	A	V	V
1210	MVR1210-5R0G/H	2.4	3.3	5	4.0-6.0	250A/400A	1-10	12	600V & 1000V
	MVR1210-8R0G/H	4	5.5	5.5	6.6-9.9	250A/400A	1-10	18	
	MVR1210-120G/H	7	9	12	10.2-13.8	250A/400A	1-10	24	
	MVR1210-180G/H	11	14	18	15.3-21.7	250A/400A	1-10	30	
	MVR1210-220G/H	12	16	22	19.8-24.2	250A/400A	1-10	36	
	MVR1210-240G/H	14	18	24	21.6-26.4	250A/400A	1-10	38	
	MVR1210-270G/H	17	22	27	24.3-29.7	250A/400A	1-10	44	
	MVR1210-300G/H	18	24	30	27.2-33.0	250A/400A	1-10	48	
	MVR1210-330G/H	20	26	33	29.7-36.3	250A/400A	1-10	54	
	MVR1210-360G/H	22	28	36	32.7-39.6	250A/400A	1-10	59	
	MVR1210-390G/H	25	30	39	35.1-42.9	250A/400A	1-10	65	
	MVR1210-420G/H	26	33	42	38.1-46.2	250A/400A	1-10	72	
	MVR1210-470G/H	30	38	47	42.3-51.7	250A/400A	1-10	77	
	MVR1210-560G/H	35	45	56	50.4-61.6	250A/400A	1-10	90	
	MVR1210-680G/H	40	56	68	61.2-74.8	250A/400A	1-10	110	
	MVR1210-760G/H	45	60	76	69.1-83.6	250A/400A	1-10	126	
	MVR1210-820G/H	50	65	82	73.8-90.2	250A/400A	1-10	135	
	MVR1210-101G/H	60	85	100	90-110	250A/400A	1-10	165	
1210 High V	MVR1210-121G	75	100	120	108-132	200A	1-10	200	600V & 1300V
	MVR1210-171G	110	140	170	154-187	200A	1-10	300	
	MVR1210-201G	130	170	200	185-225	200A	1-10	340	
	MVR1210-221G	140	180	220	198-242	200A	1-10	360	
	MVR1210-241G	150	200	240	216-264	200A	1-10	395	
	MVR1210-271G	175	225	270	243-297	200A	1-10	455	
	MVR1210-391G	250	320	270	351-429	200A	1-10	650	
	MVR1210-431G	275	350	430	387-473	200A	1-10	710	
	MVR1210-471G	300	385	470	423-517	200A	1-10	775	
	MVR1210-221H	140	180	220	198-242	400A	1-10	360	1000V
	MVR1210-241H	150	200	240	216-264	400A	1-10	395	
	MVR1210-271H	175	225	270	243-297	500A	1-10	455	
	MVR1210-391H	250	320	270	351-429	500A	1-10	650	
	MVR1210-431H	275	350	430	387-473	500A	1-10	710	
	MVR1210-471H	300	385	470	423-517	500A	1-10	775	

MULTILAYER CHIP VARISTOR For ESD / Surge ProtectionFeatures Size

1812 Size

Part Number		Working Voltage		Breakdown Voltage		Peak Current	Clamping Voltage		Surge Voltage
		AC	DC	@ 1mA DC		8/20uS	8/20uS		
		VAC	VDC		VB	Ip	A	V	V
1812	MVR1812-8R0G/H	4	5.5	5.5	6.6-9.9	500A/800A	1-10	18	1000V & 2000V
	MVR1812-120G/H	7	9	12	10.2-13.8	500A/800A	1-10	24	
	MVR1812-180G/H	11	14	18	15.3-21.7	500A/800A	1-10	30	
	MVR1812-220G/H	12	16	22	19.8-24.2	500A/800A	1-10	36	
	MVR1812-240G/H	14	18	24	21.6-26.4	500A/800A	1-10	38	
	MVR1812-270G/H	17	22	27	24.3-29.7	500A/800A	1-10	44	
	MVR1812-300G/H	18	24	30	27.2-33.0	500A/800A	1-10	48	
	MVR1812-330G/H	20	26	33	29.7-36.3	500A/800A	1-10	54	
	MVR1812-360G/H	22	28	36	32.7-39.6	500A/800A	1-10	59	
	MVR1812-390G/H	25	30	39	35.1-42.9	500A/800A	1-10	65	
	MVR1812-420G/H	26	33	42	38.1-46.2	500A/800A	1-10	72	
	MVR1812-470G/H	30	38	47	42.3-51.7	500A/800A	1-10	77	
	MVR1812-560G/H	35	45	56	50.4-61.6	500A/800A	1-10	90	
	MVR1812-680G/H	40	56	68	61.2-74.8	500A/800A	1-10	110	
	MVR1812-760G/H	45	60	76	69.1-83.6	500A/800A	1-10	126	
	MVR1812-820G/H	50	65	82	73.8-90.2	500A/800A	1-10	135	
	MVR1812-101G/H	60	85	100	90-110	500A/800A	1-10	165	
	MVR1812-121G/H	75	100	120	108-132	500A/800A	1-10	200	
1812 High V	MVR1812-171G	110	140	170	154-187	500A	1-10	300	1000V
	MVR1812-201G	130	170	200	185-225	500A	1-10	340	
	MVR1812-221G	140	180	220	198-242	500A	1-10	360	
	MVR1812-241G	150	200	240	216-264	500A	1-10	395	
	MVR1812-271G	175	225	270	243-297	500A	1-10	455	
	MVR1812-391G	250	320	270	351-429	500A	1-10	650	
	MVR1812-431G	275	350	430	387-473	500A	1-10	710	
	MVR1812-471G	300	385	470	423-517	500A	1-10	775	
	MVR1812-511G	320	415	510	459-561	400A	1-10	845	
	MVR1812-221H	140	180	220	198-242	800A	1-10	360	2000V
	MVR1812-241H	150	200	240	216-264	1000A	1-10	395	
	MVR1812-271H	175	225	270	243-297	1000A	1-10	455	
	MVR1812-391H	250	320	270	351-429	1000A	1-10	650	
	MVR1812-431H	275	350	430	387-473	1000A	1-10	710	
	MVR1812-471H	300	385	470	423-517	1000A	1-10	775	

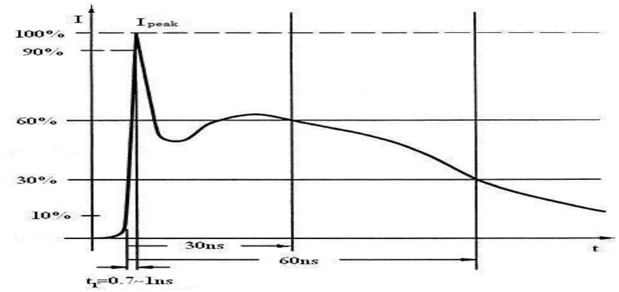
2220 Size

Part Number		Working Voltage AC (VAC)	Working Voltage DC (VDC)	Breakdown Voltage @ 1mA DC	Breakdown Voltage @ 1mA DC VB	Peak Current 8/20uS Ip	Clamping Voltage 8/20uS A	Clamping Voltage 8/20uS V	Surge Voltage V
2220	MVR2220-240G/H	14	18	24	21.6-26.4	800A/1200A	1-10	38	2000V & 2500V
	MVR2220-270G/H	17	22	27	24.3-29.7	800A/1200A	1-10	44	
	MVR2220-300G/H	18	24	30	27.2-33.0	800A/1200A	1-10	48	
	MVR2220-330G/H	20	26	33	29.7-36.3	800A/1200A	1-10	54	
	MVR2220-360G/H	22	28	36	32.7-39.6	800A/1200A	1-10	59	
	MVR2220-390G/H	25	30	39	35.1-42.9	800A/1200A	1-10	65	
	MVR2220-420G/H	26	33	42	38.1-46.2	800A/1200A	1-10	72	
	MVR2220-470G/H	30	38	47	42.3-51.7	800A/1200A	1-10	77	
	MVR2220-560G/H	35	45	56	50.4-61.6	800A/1200A	1-10	90	
	MVR2220-680G/H	40	56	68	61.2-74.8	800A/1200A	1-10	110	
	MVR2220-760G/H	45	60	76	69.1-83.6	800A/1200A	1-10	126	
	MVR2220-820G/H	50	65	82	73.8-90.2	800A/1200A	1-10	135	
	MVR2220-101G/H	60	85	100	90-110	800A/1200A	1-10	165	
2220 High V	MVR2220-201G	130	170	200	185-225	500A	5-10	340	1000V
	MVR2220-221G	140	180	220	198-242	500A	5-10	360	
	MVR2220-241G	150	200	240	216-264	500A	5-10	395	
	MVR2220-271G	175	225	270	243-297	500A	5-10	455	
	MVR2220-391G	250	320	270	351-429	500A	5-10	650	
	MVR2220-431G	275	350	430	387-473	500A	5-10	710	
	MVR2220-471G	300	385	470	423-517	500A	5-10	775	
	MVR2220-511G	320	415	510	459-561	400A	5-10	845	
	MVR2220-221H	140	180	220	198-242	800A	5-10	360	
	MVR2220-241H	150	200	240	216-264	1000A	5-10	395	
	MVR2220-271H	175	225	270	243-297	1000A	5-10	455	
	MVR2220-391H	250	320	390	351-429	1000A	5-10	650	
	MVR2220-431H	275	350	430	387-473	1000A	5-10	710	
	MVR2220-471H	300	385	470	423-517	1000A	5-10	775	
	MVR2220-511H	320	415	510	459-561	1000A	5-10	845	
	MVR2220-561H	350	460	620	558-682	1000A	5-10	920	2000V
	MVR2220-391H152	250	320	390	351-429	1500A	5-10	650	
	MVR2220-391H202	250	320	390	351-429	2000A	5-10	650	
	MVR2220-471H152	300	385	470	423-517	1500A	5-10	710	
	MVR2220-471H202	300	385	470	423-517	2000A	5-10	710	

3220 Size

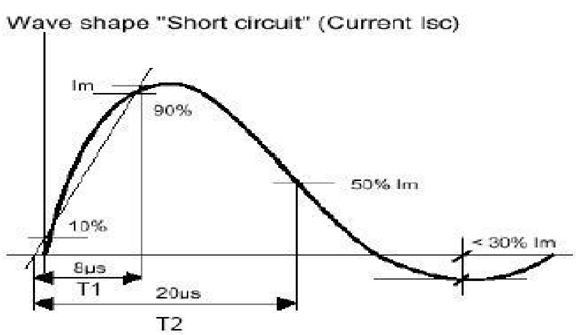
Part Number		Working Voltage AC	Working Voltage DC	Breakdown Voltage @ 1mA DC		Peak Current 8/20uS	Clamping Voltage 8/20uS		Surge Voltage
		VAC	VDC		VB	Ip	A	V	V
3220 High V	MVR3220-201G	130	170	200	185-225	500A	5-10	340	2000V & 2500V
	MVR3220-221G	140	180	220	198-242	500A	5-10	360	
	MVR3220-241G	150	200	240	216-264	500A	5-10	395	
	MVR3220-271G	175	225	270	243-297	500A	5-10	455	
	MVR3220-391G	250	320	270	351-429	500A	5-10	650	
	MVR3220-431G	275	350	430	387-473	450A	5-10	710	
	MVR3220-471G	300	385	470	423-517	450A	5-10	775	
	MVR3220-511G	320	415	510	459-561	450A	5-10	845	
	MVR3220-221H	140	180	220	198-242	800A	5-10	360	2000V
	MVR3220-241H	150	200	240	216-264	1000A	5-10	395	
	MVR3220-271H	175	225	270	243-297	1000A	5-10	455	
	MVR3220-391H	250	320	270	351-429	1000A	5-10	650	
	MVR3220-431H	275	350	430	387-473	1000A	5-10	710	
	MVR3220-471H	300	385	470	423-517	1000A	5-10	775	
	MVR3220-511H	320	415	510	459-561	1000A	5-10	845	
	MVR3220-561H	350	460	620	558-682	1000A	5-10	920	
	MVR3220-471H152	300	385	470	423-517	1500A	5-20	710	3000V
	MVR3220-471H302	300	385	470	423-517	3000A	5-20	710	6000V

ESD Wave Form



SEVERITY LEVEL	AIRDIRCHARGE	DIRECT ISCHARGE
1	2 kV	2 kV
2	4 kV	4 kV
3	8 kV	6 kV
4	15 kV	8 kV

IEC61000-4-2 Compliant ESD Current Pulse Waveform



SEVERITY LEVEL	T1	T2
1	8 µS	20 µS

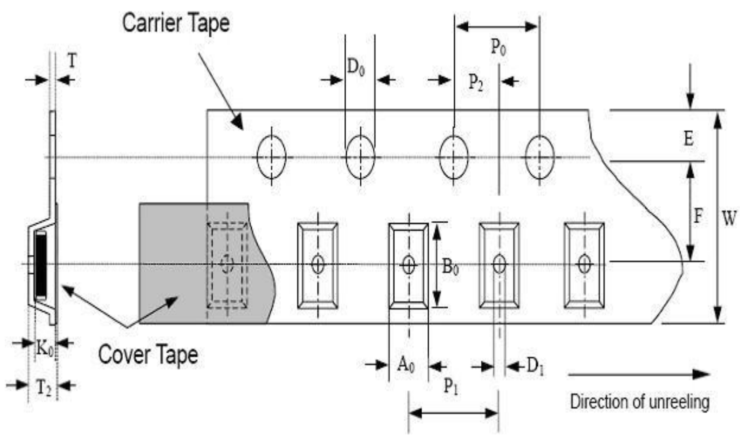
MULTILAYER CHIP VARISTOR For ESD / Surge ProtectionFeatures Size

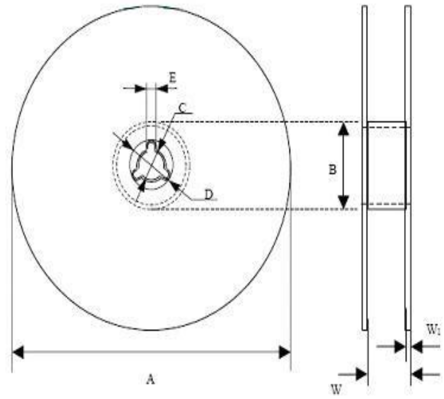
Packaging Specification

Carrier tape transparent cover tape should be heat-sealed
to carry the products, and the reel should be used to reel the carrier tape.

The adhesion of the heat-sealed cover tape shall be 40 + 20/ − 15 grams.

Both the head and the end portion of taping shall be empty for reel package and SMT auto-pickup machine.
And a normal paper tape shall be connected in the head of taping for the operator handle.





Type	A_0	B_0	K_0	T	T_2	D_0	D_1	P_1	P_2	P_0	W	E	F
	±0.10	±0.10	±0.10	±0.05	±0.05	+0.1-0.0	±0.05	±0.10	±0.05	±0.05	±0.20	±0.10	±0.05
0402	1.08	1.88	1.04	0.22	0.87	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
0603	1.08	1.88	1.04	0.22	1.17	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
0805	1.42	2.30	1.04	0.22	1.26	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
0806	2.00	2.50	1.90	0.22	2.12	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1206	1.88	3.50	1.27	0.20	1.49	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1210	2.18	3.46	1.45	0.22	1.77	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1812	3.66	4.95	1.74	0.25	1.99	1.50	1.50	8.00	2.00	4.00	12.00	1.75	5.50
2220	5.10	5.97	2.80	0.25	3.05	1.50	1.50	8.00	2.00	4.00	12.00	1.75	5.50
2225	5.10	6.57	2.80	0.25	3.05	1.50	1.50	8.00	2.00	4.00	12.00	1.75	5.50
3220	5.50	8.50	2.80	0.30	3.50	1.50	1.50	8.00	2.00	4.00	16.00	1.75	7.50

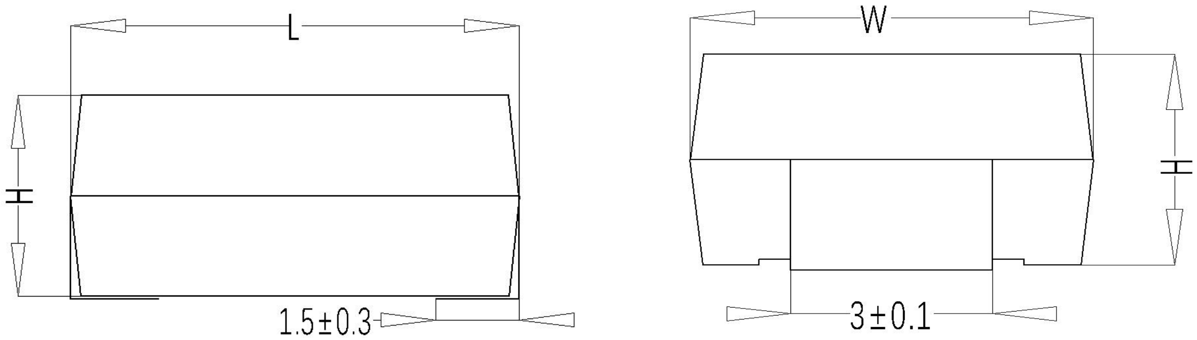
type	A	B	C	D	E	W	W_1
0402	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0.50	1.5±0.15
0603	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0.50	1.5±0.15
0805	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0.50	1.5±0.15
0806	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0.50	1.5±0.15
1206	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0.50	1.5±0.15
1210	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0.50	1.5±0.15
1812	178.0±1.0	60.0±0.5	13.5±0.1	21.0±0.2	2.0±0.5	13.6±0.2	1.5±0.15
2220	178.0±1.0	60.0±0.5	13.5±0.1	21.0±0.2	2.0±0.5	13.6±0.2	1.5±0.15
2225	178.0±1.0	60.0±0.5	13.5±0.1	21.0±0.2	2.0±0.5	13.6±0.2	1.5±0.15
3220	178.0±1.0	60.0±0.5	13.5±0.1	21.0±0.2	2.0±0.5	13.6±0.2	1.5±0.15

Type		0402	0603	0805	0806	1206	1210	1812	2220	3220
quantity	paper	10000	4000	-	-	-	-	-	-	-
	plastic	-	-	3000	2000	3000	3000	500/1000	500/1000	1000
Minimum		-	4000	3000	2000	3000	3000	500/1000	500/1000	1000

General parameters & Structure and size

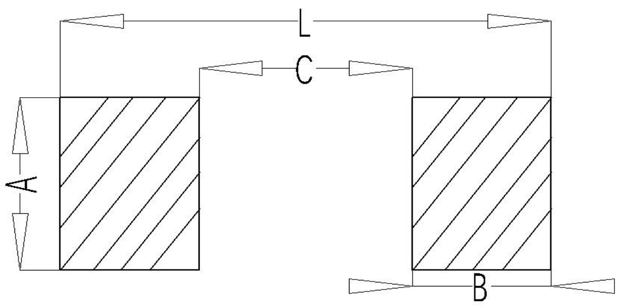
Parameter name	Parameter value	UNIT
working temperature	-55 — +125	℃
Storage temperature	-55 — +125	℃
Withstand voltage	≥2.5	KVRMS
Insulation resistance	≥100	MΩ

Structure and size



size	Varistor voltage range (V)	L	W	H
3225	V_{1ma}=201—681	8.2±0.3	6.3±0.3	4.3±0.3
	V_{1ma}=751—821			5.2±0.3
4032	V_{1ma}=201—681	11.0±0.3	8.2±0.1	4.8±0.3
	V_{1ma}=751—821			5.5±0.3

Welding size



SIZE	A	B	C	L
3225	3.5	2.8	4.5	10.1
4032	3.5	2.8	6.5	12.1

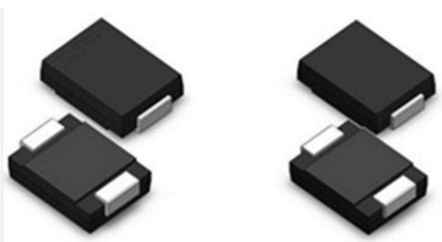
Electrical characteristics (Standard)

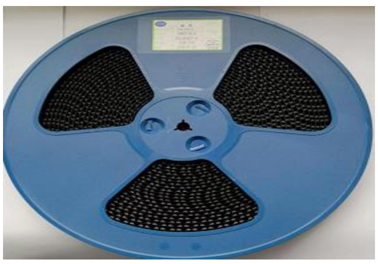
Model	Varistor voltage (@1mA DC)	Maximum Clamping Voltage		Maximum Allowable Voltage （8/20 ）		Max Surge 8/20μs	Energy (10/1000μs)	Rated Powe	Typical Capacitance (Reference) @1KHZ
	V_{1mA} (V)	V_{AC} (V)	V_{DC} (V)	Vp (V)	Ip (A)	I max (A)	W max (J)	P (W)	C(pF)
3225K201	200(180-220)	130	170	340	10	1200	15	0.25	200
3225K221	220(198-242)	140	180	360	10	1200	18	0.25	180
3225K241	240(216-264)	150	200	395	10	1200	18.5	0.25	170
3225K271	270(243-297)	175	225	455	10	1200	21	0.25	150
3225K361	360(324-396)	230	300	595	10	1200	23	0.25	115
3225K391	390(351-429)	250	320	650	10	1200	25	0.25	105
3225K431	430(387-473)	275	350	710	10	1200	29	0.25	95
3225K471	470(423-517)	300	385	775	10	1200	30	0.25	90
3225K511	510(459-561)	320	410	845	10	1200	33	0.25	85
3225K561	560(504-616)	350	450	930	10	1200	33	0.25	80
3225K621	620(558-682)	395	510	1020	10	1200	35	0.25	78
3225K681	680(612-748)	420	560	1120	10	1200	35	0.25	75
3225K751	750(675-825)	460	615	1235	10	1200	50	0.25	70
3225K781	780(702-858)	485	640	1290	10	1200	51	0.25	65
3225K821	820(738-902)	510	670	1355	10	1200	52	0.25	60

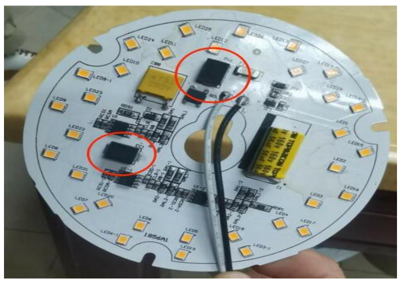
1.3225K201 to 3225K821 have TUV 125 degree working temperature certification No: B115439 001

2.3225K201 to 3225K821 have UL+CUL 125 degree working temperature certification No: E525940

3.3225K201 to 3225K821 have CQC 125 degree working temperature certification No: 22001333055







Electrical characteristics (High energy)

Model	Varistor voltage (@1mA DC)	Maximum Clamping Voltage		Maximum Allowable Voltage (8/20)		Max Surge 8/20μs	Energy (10/1000μs)	Rated Powe	Typical Capacitance (Reference) @1KHZ
	V1mA (V)	VAC (V)	VDC (V)	Vp (V)	Ip (A)	I max (A)	W max (J)	P (W)	C(pF)
3225K201-H	200(180-220)	130	170	340	10	1750	17	0.25	200
3225K221-H	220(198-242)	140	180	360	10	1750	19	0.25	180
3225K241-H	240(216-264)	150	200	395	10	1750	21	0.25	170
3225K271-H	270(243-297)	175	225	455	10	1750	24	0.25	150
3225K361-H	360(324-396)	230	300	595	10	1750	26	0.25	115
3225K391-H	390(351-429)	250	320	650	10	1750	28	0.25	105
3225K431-H	430(387-473)	275	350	710	10	1750	32	0.25	95
3225K471-H	470(423-517)	300	385	775	10	1750	35	0.25	90
3225K511-H	510(459-561)	320	410	845	10	1750	40	0.25	85
3225K561-H	560(504-616)	350	450	930	10	1750	42	0.25	80
3225K621-H	620(558-682)	395	510	1020	10	1750	45	0.25	78
3225K681-H	680(612-748)	420	560	1120	10	1750	49	0.25	75
3225K751-H	750(675-825)	460	615	1235	10	1750	55	0.25	70
3225K781-H	780(702-858)	485	640	1290	10	1750	60	0.25	65
3225K821-H	820(738-902)	510	670	1355	10	1750	67	0.25	60

1.3225K201 to 3225K821 have TUV 125 degree working temperature certification No: B115439 001

2.3225K201 to 3225K821 have UL+CUL 125 degree working temperature certification No: E525940

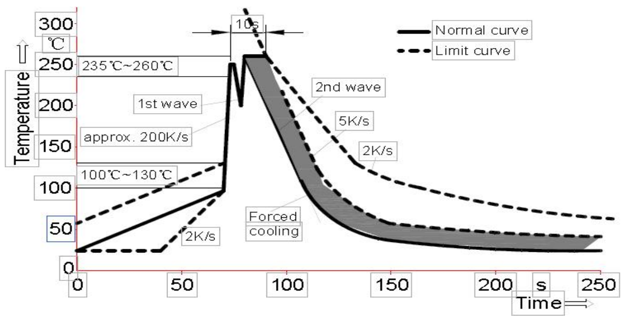
3.3225K201 to 3225K821 have CQC 125 degree working temperature certification No: 22001333055

SOLDERING GUIDELINES

The usage of mild, non-activated fluxes for soldering is recommended, as well as proper cleaning of the PCB.

The components are suitable for reflow soldering per JEDEC J-STD-020C.

- Wave soldering



Temperature characteristics at component terminal with dual-wave soldering

Electrical characteristics (Combined wave 1.2/50+8/20μs)

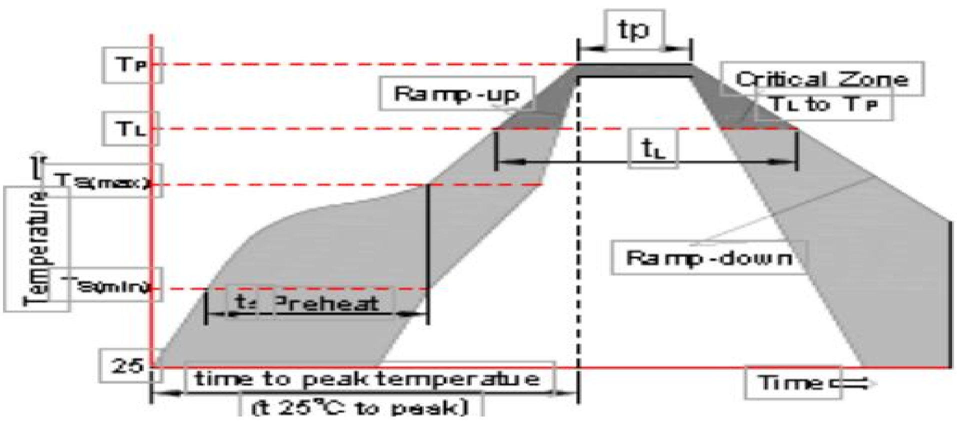
Model	Varistor voltage (@1mA DC)	Maximum Clamping Voltage		Maximum Allowable Voltage (8/20)		Surge 2KV/1KA 1.2/50+8/20μs (times)	Energy (10/1000μs)	Rated Powe	Typical Capacitance (Reference) @1KHZ
	V1mA (V)	VAC (V)	VDC (V)	Vp (V)	Ip (A)	I max1750A 8/2μs(1time)	W max (J)	P (W)	C(pF)
3225K201-BC	200(180-220)	130	170	340	10	40	17	0.25	200
3225K221-BC	220(198-242)	140	180	360	10	40	19	0.25	180
3225K241-BC	240(216-264)	150	200	395	10	40	21	0.25	170
3225K271-BC	270(243-297)	175	225	455	10	40	21	0.25	150
3225K361-BC	360(324-396)	230	300	595	10	40	35	0.25	115
3225K391-BC	390(351-429)	250	320	650	10	40	39	0.25	105
3225K431-BC	430(387-473)	275	350	710	10	40	40	0.25	95
3225K471-BC	470(423-517)	300	385	775	10	40	42	0.25	90
3225K511-BC	510(459-561)	320	410	845	10	40	45	0.25	85
3225K561-BC	560(504-616)	350	450	930	10	40	49	0.25	80
3225K621-BC	620(558-682)	395	510	1020	10	40	55	0.25	78
3225K681-BC	680(612-748)	420	560	1120	10	40	60	0.25	75
3225K751-BC	750(675-825)	460	615	1235	10	40	67	0.25	70
3225K781-BC	780(702-858)	485	640	1290	10	40	67	0.25	65
3225K821-BC	820(738-902)	510	670	1355	10	40	80	0.25	60

1.3225K201 to 3225K821 have TUV 125 degree working temperature certification No: B115439 001

2.3225K201 to 3225K821 have UL+CUL 125 degree working temperature certification No: E525940

3.3225K201 to 3225K821 have CQC 125 degree working temperature certification No: 22001333055

Reflow Soldering



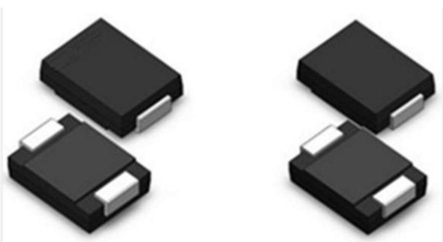
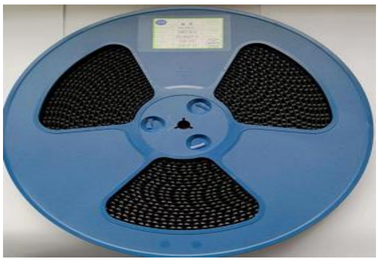
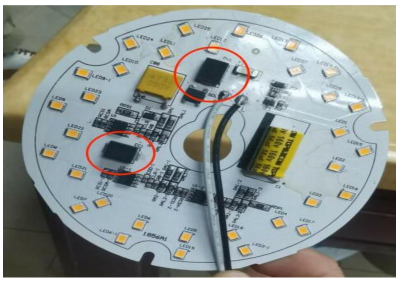
Electrical characteristics (Standard)

Model	Varistor voltage (@1mA DC)	Maximum Clamping Voltage		Maximum Allowable Voltage (8/20)		Max Surge 8/20μs	Energy (10/1000μs)	Rated Powe	Typical Capacitance (Reference) @1KHZ
	V1mA (V)	VAC (V)	VDC (V)	Vp (V)	Ip (A)	I max (A)	W max (J)	P (W)	C(pF)
4032K201	200(180-220)	130	170	340	25	2500	25	0.4	500
4032K221	220(198-242)	140	180	360	25	2500	27	0.4	450
4032K241	240(216-264)	150	200	395	25	2500	30	0.4	420
4032K271	270(243-297)	175	225	455	25	2500	35	0.4	370
4032K301	300(270-330)	195	250	500	25	2500	40	0.4	330
4032K331	330(297-363)	210	275	550	25	2500	42	0.4	300
4032K361	360(324-396)	230	300	595	25	2500	45	0.4	280
4032K391	390(351-429)	250	320	650	25	2500	50	0.4	260
4032K431	430(387-473)	275	350	710	25	2500	55	0.4	230
4032K471	470(423-517)	300	385	775	25	2500	60	0.4	210
4032K511	510(459-561)	320	410	845	25	2500	67	0.4	200
4032K561	560(504-616)	350	450	930	25	2500	69	0.4	180
4032K621	620(558-682)	395	510	1020	25	2500	70	0.4	160
4032K681	680(612-748)	420	560	1120	25	2500	72	0.4	150
4032K751	750(675-825)	460	615	1235	25	2500	75	0.4	130

1.4032K201 to 3225K751 have TUV 125 degree working temperature certification No: B115439 002

2.4032K201 to 3225K751 have UL+CUL 125 degree working temperature certification No: E525940

3.4032K201 to 3225K751 have CQC 125 degree working temperature certification No: 22001333056

Electrical characteristics (High energy)

Model	Varistor voltage (@1mA DC)	Maximum Clamping Voltage		Maximum Allowable Voltage （8/20 ）		Max Surge 8/20μs	Energy (10/1000μs)	Rated Powe	Typical Capacitance (Reference) @1KHZ
	V_{1mA} (V)	V_{AC} (V)	V_{DC} (V)	Vp (V)	Ip (A)	I max (A)	W max (J)	P (W)	C(pF)
4032K201-H	200(180-220)	130	170	340	25	3500	35	0.4	500
4032K221-H	220(198-242)	140	180	360	25	3500	39	0.4	450
4032K241-H	240(216-264)	150	200	395	25	3500	42	0.4	420
4032K271-H	270(243-297)	175	225	455	25	3500	49	0.4	370
4032K301-H	300(270-330)	195	250	500	25	3500	54	0.4	330
4032K331-H	330(297-363)	210	275	550	25	3500	58	0.4	300
4032K361-H	360(324-396)	230	300	595	25	3500	65	0.4	280
4032K391-H	390(351-429)	250	320	650	25	3500	70	0.4	260
4032K431-H	430(387-473)	275	350	710	25	3500	80	0.4	230
4032K471-H	470(423-517)	300	385	775	25	3500	85	0.4	210
4032K511-H	510(459-561)	320	410	845	25	3500	90	0.4	200
4032K561-H	560(504-616)	350	450	930	25	3500	92	0.4	180
4032K621-H	620(558-682)	395	510	1020	25	3500	95	0.4	160
4032K681-H	680(612-748)	420	560	1120	25	3500	98	0.4	150
4032K751-H	750(675-825)	460	615	1235	25	3500	100	0.4	130

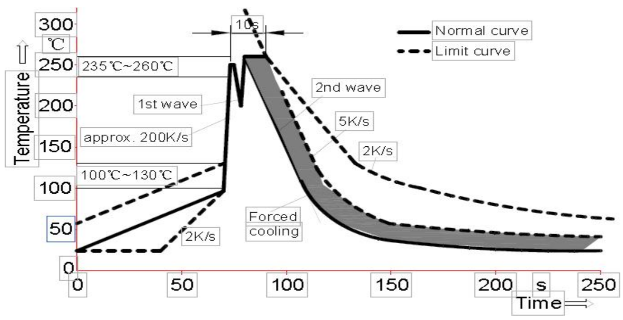
1.4032K201 to 3225K751 have TUV 125 degree working temperature certification No: B115439 002
2.4032K201 to 3225K751 have UL+CUL 125 degree working temperature certification No: E525940
3.4032K201 to 3225K751 have CQC 125 degree working temperature certification No: 22001333056

SOLDERING GUIDELINES

The usage of mild, non-activated fluxes for soldering is recommended, as well as proper cleaning of the PCB.

The components are suitable for reflow soldering per JEDEC J-STD-020C.

- Wave soldering



Temperature characteristics at component terminal with dual-wave soldering

Electrical characteristics (Combined wave 1.2/50+8/20μs)

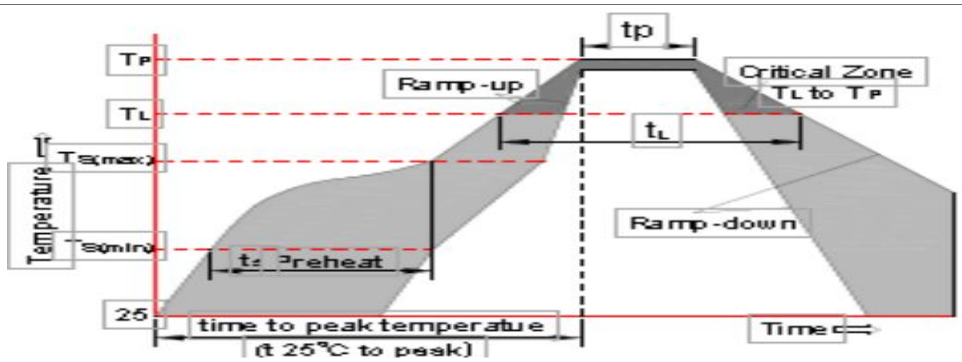
Model	Varistor voltage (@1mA DC)	Maximum Clamping Voltage		Maximum Allowable Voltage (8/20)		Surge 2KV/1KA 1.2/50+8/20μs (times)	Energy (10/1000μs)	Rated Powe	Typical Capacitance (Reference) @1KHZ
	V1mA (V)	VAC (V)	VDC (V)	Vp (V)	Ip (A)	I max1750A 8/2μs(1time)	W max (J)	P (W)	C(pF)
4032K201-EC	200(180-220)	130	170	340	25	40	25	0.4	500
4032K221-EC	220(198-242)	140	180	360	25	40	27	0.4	450
4032K241-EC	240(216-264)	150	200	395	25	40	30	0.4	420
4032K271-EC	270(243-297)	175	225	455	25	40	35	0.4	370
4032K301-EC	300(270-330)	195	250	500	25	40	40	0.4	330
4032K331-EC	330(297-363)	210	275	550	25	40	42	0.4	300
4032K361-EC	360(324-396)	230	300	595	25	40	45	0.4	280
4032K391-EC	390(351-429)	250	320	650	25	40	50	0.4	260
4032K431-EC	430(387-473)	275	350	710	25	40	55	0.4	230
4032K471-EC	470(423-517)	300	385	775	25	40	60	0.4	210
4032K511-EC	510(459-561)	320	410	845	25	40	67	0.4	200
4032K561-EC	560(504-616)	350	450	930	25	40	69	0.4	180
4032K621-EC	620(558-682)	395	510	1020	25	40	70	0.4	160
4032K681-EC	680(612-748)	420	560	1120	25	40	72	0.4	150
4032K751-EC	750(675-825)	460	615	1235	25	40	75	0.4	130

1.4032K201 to 3225K751 have TUV 125 degree working temperature certification No: B115439 002

2.4032K201 to 3225K751 have UL+CUL 125 degree working temperature certification No: E525940

3.4032K201 to 3225K751 have CQC 125 degree working temperature certification No: 22001333056

Reflow Soldering

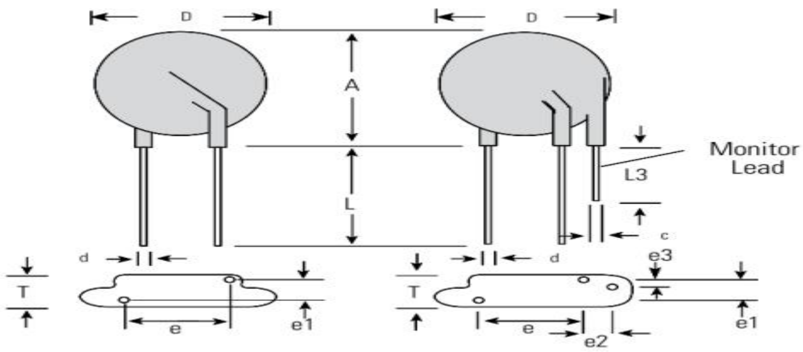


Electrical Characteristics φ14 Series（Thermally Protected Varistors）

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge current	Maximum Energy (10/1000μs)	Rated Power	Dimension Tmax	Dimension e 1 max
	V_{AC}(V)	V_{DC}(V)	V_{1mA}(V)	I_P(A)	V_C(V)	8/20uS(A)	(J)	(W)	(mm)	(mm)
VDR14(N/M/E)181K	115	150	180(162-198)	50	300	6000	56	0.6	9	4
VDR14(N/M/E)201K	130	170	200(180-220)	50	340	6000	70	0.6	9	4
VDR14(N/M/E)221K	140	180	220(198-242)	50	360	6000	78	0.6	9	4
VDR14(N/M/E)241K	150	200	240(216-264)	50	395	6000	84	0.6	9	4
VDR14(N/M/E)271K	175	225	270(243-297)	50	455	6000	99	0.6	9	4
VDR14(N/M/E)301K	190	250	300(270-330)	50	500	6000	108	0.6	9.5	4.5
VDR14(N/M/E)331K	210	275	330(297-363)	50	550	6000	115	0.6	9.5	4.5
VDR14(N/M/E)361K	230	300	360(324-396)	50	595	6000	130	0.6	9.5	4.5
VDR14(N/M/E)391K	250	320	390(351-429)	50	650	6000	140	0.6	9.5	4.5
VDR14(N/M/E)431K	275	350	430(387-473)	50	710	6000	155	0.6	9.5	4.5
VDR14(N/M/E)471K	300	385	470(423-517)	50	775	6000	175	0.6	11	5.5
VDR14(N/M/E)511K	320	415	510(459-561)	50	845	6000	180	0.6	11	5.5
VDR14(N/M/E)561K	350	460	560(504-616)	50	925	6000	185	0.6	11	5.5
VDR14(N/M/E)621K	385	505	620(558-682)	50	1025	6000	190	0.6	11	5.5
VDR14(N/M/E)681K	420	560	680(612-748)	50	1120	6000	200	0.6	11	5.5
VDR14(N/M/E)751K	460	615	750(675-825)	50	1240	6000	210	0.6	11	8
VDR14(N/M/E))781 K	485	640	780(702-858)	50	1290	6000	220	0.6	12	8
VDR14(N/M/E)821K	510	670	820(738-902)	50	1355	6000	235	0.6	12	8
VDR14(N/M/E)911K	550	745	910(819-1001)	50	1500	6000	255	0.6	12	8
VDR14(N/M/E)102K	625	825	1000(900-1100)	50	1650	6000	280	0.6	13	8
VDR14(N/M/E)112K	680	895	1100(990-1210)	50	1815	6000	310	0.6	13	10
VDR14(N/M/E)122K	750	990	1200(1080-1320)	50	1980	6000	324	0.6	13	10

Notes: Leakage Current (@83% of V1mA):IR≤25μA

Dimensions



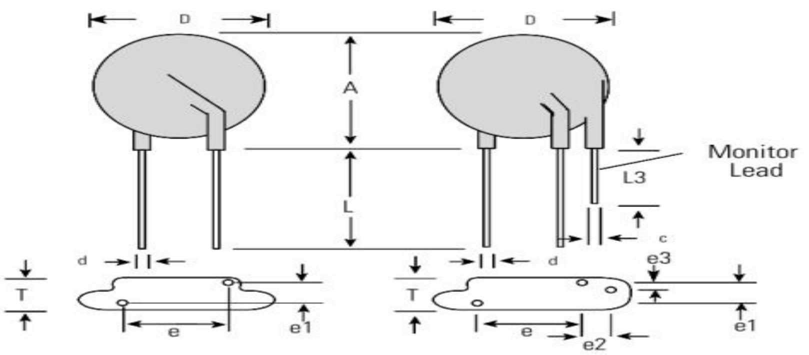
Symbol	D	A	e ±1	e 2	e 3	L	L3	d	c
	max.	max.		(±1)	max.	min.	min.	±0.05	±0.05
N series（mm）	17	22	7.5	n/a	n/a	25.4	n/a	0.8	n/a
M/E series（mm）	17	22	7.5	5	2	25.4	6	0.8	0.8

Electrical Characteristics φ20 Series（Thermally Protected Varistors）

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge current	Maximum Energy (10/1000μs)	Rated Power	Dimension Tmax	Dimension e 1 max
	V_{AC}(V)	V_{DC}(V)	V_{1mA}(V)	I_P(A)	V_C(V)	8/20uS(A)	(J)	(W)	(mm)	(mm)
VDR20(N/M/E)181K	115	150	180(162-198)	100	300	10000	110	1	9	4
VDR20(N/M/E)201K	130	170	200(180-220)	100	340	10000	140	1	9	4
VDR20(N/M/E)221K	140	180	220(198-242)	100	360	10000	155	1	9	4
VDR20(N/M/E)241K	150	200	240(216-264)	100	395	10000	170	1	9	4
VDR20(N/M/E)271K	175	225	270(243-297)	100	455	10000	190	1	9	4
VDR20(N/M/E)301K	190	250	300(270-330)	100	500	10000	205	1	9.5	4.5
VDR20(N/M/E)331K	210	275	330(297-363)	100	550	10000	215	1	9.5	4.5
VDR20(N/M/E)361K	230	300	360(324-396)	100	595	10000	225	1	9.5	4.5
VDR20(N/M/E)391K	250	320	390(351-429)	100	650	10000	240	1	9.5	4.5
VDR20(N/M/E)431K	275	350	430(387-473)	100	710	10000	270	1	9.5	5.5
VDR20(N/M/E)471K	300	385	470(423-517)	100	775	10000	350	1	11	5.5
VDR20(N/M/E)511K	320	415	510(459-561)	100	845	10000	380	1	11	5.5
VDR20(N/M/E)561K	350	460	560(504-616)	100	925	10000	400	1	11	5.5
VDR20(N/M/E)621K	385	505	620(558-682)	100	1025	10000	425	1	11	6
VDR20(N/M/E)681K	420	560	680(612-748)	100	1120	10000	435	1	11	6
VDR20(N/M/E)751K	460	615	750(675-825)	100	1240	10000	455	1	11	7
VDR20(N/M/E)781K	485	640	780(702-858)	100	1290	10000	461	1	12	7
VDR20(N/M/E)821K	510	670	820(738-902)	100	1355	10000	475	1	12	7
VDR20(N/M/E)911K	550	745	910(819-1001)	100	1500	10000	500	1	12	8
VDR20(N/M/E)102K	625	825	1000(900-1100)	100	1650	10000	560	1	13	8
VDR20(N/M/E)112K	680	895	1100(990-1210)	100	1815	10000	610	1	13	9
VDR20(N/M/E)122K	750	990	1200(1080-1320)	100	1980	10000	650	1	13	9

Notes: Leakage Current (@83% of V1mA):IR≤25μA

Dimensions



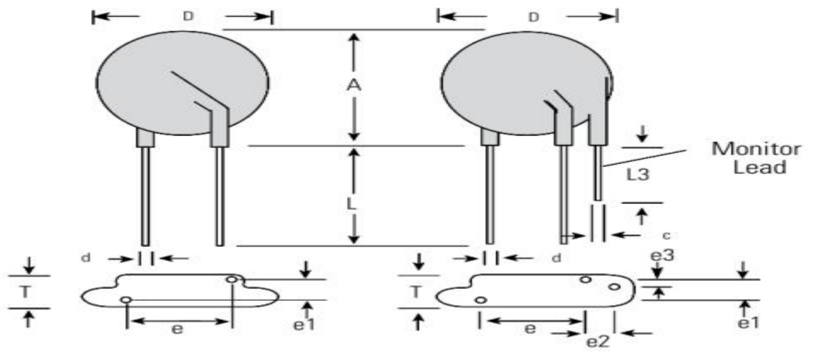
Symbol	D	A	e ±1	e 2	e 3	L	L3	d	c
	max.	max.		(±1)	max.	min.	min.	±0.05	±0.05
N series（mm）	23	28	7.5	n/a	n/a	25.4	n/a	0.8/1.0	n/a
M/E series（mm）	23	28	7.5	5	2	25.4	6	0.8/1.0	0.8

Electrical Characteristics φ25 Series（Thermally Protected Varistors）

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge current	Maximum Energy (10/1000μs)	Rated Power	Dimension Tmax	Dimension e 1 max
	V_{AC}(V)	V_{DC}(V)	V_{1mA}(V)	I_P(A)	V_C(V)	8/20uS(A)	(J)	(W)	(mm)	(mm)
VDR25(N/M/E)181K	115	150	180(162-198)	150	300	15000	175	1.2	11.8	3.8
VDR25(N/M/E)201K	130	170	200(180-220)	150	340	15000	210	1.2	11.9	3.8
VDR25(N/M/E)221K	140	180	220(198-242)	150	360	15000	230	1.2	12	3.8
VDR25(N/M/E)241K	150	200	240(216-264)	150	395	15000	255	1.2	12	3.8
VDR25(N/M/E)271K	175	225	270(243-297)	150	455	15000	285	1.2	12	3.8
VDR25(N/M/E)301K	190	250	300(270-330)	150	500	15000	310	1.2	12	4.5
VDR25(N/M/E)331K	210	275	330(297-363)	150	550	15000	325	1.2	12	4.5
VDR25(N/M/E)361K	230	300	360(324-396)	150	595	15000	340	1.2	12	4.5
VDR25(N/M/E)391K	250	320	390(351-429)	150	650	15000	360	1.2	12	4.5
VDR25(N/M/E)431K	275	350	430(387-473)	150	710	15000	440	1.2	13.5	5.5
VDR25(N/M/E)471K	300	385	470(423-517)	150	775	15000	490	1.2	13.5	5.5
VDR25(N/M/E)511K	320	415	510(459-561)	150	845	15000	530	1.2	13.5	5.5
VDR25(N/M/E)561K	350	460	560(504-616)	150	925	15000	560	1.2	13.5	5.5
VDR25(N/M/E)621K	385	505	620(558-682)	150	1025	15000	590	1.2	13.5	5.5
VDR25(N/M/E)681K	420	560	680(612-748)	150	1120	15000	620	1.2	15.8	7.8
VDR25(N/M/E)751K	460	615	750(675-825)	150	1240	15000	630	1.2	15.8	7.8
VDR25(N/M/E)781K	485	640	780(702-858)	150	1290	15000	675	1.2	15.8	7.8
VDR25(N/M/E)821K	510	670	820(738-902)	150	1355	15000	690	1.2	15.8	7.8
VDR25(N/M/E)911K	550	745	910(819-1001)	150	1500	15000	715	1.2	15.8	7.8
VDR25(N/M/E)102K	625	825	1000(900-1100)	150	1650	15000	750	1.2	18	10
VDR25(N/M/E)112K	680	895	1100(990-1210)	150	1815	15000	780	1.2	18	10
VDR25(N/M/E)122K	750	990	1200(1080-1320)	150	1980	15000	840	1.2	18	10

Notes: Leakage Current (@83% of V1mA):IR≤25μA

Dimensions

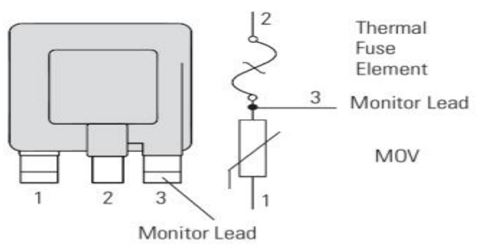


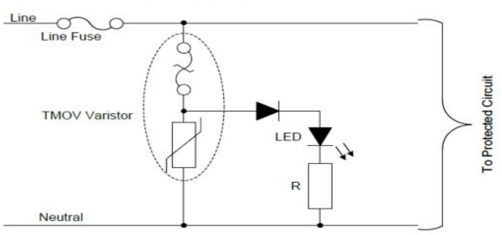
Symbol	D	A	e ±1	e 2	e 3	L	L3	d	c
	max.	max.		(±1)	max.	min.	min.	±0.05	±0.05
N series（mm）	28.5	35.5	12.7	n/a	n/a	25.4	n/a	1	n/a
M/E series（mm）	28.5	35.5	12.7	6.5	2.5	25.4	6	1	0.8

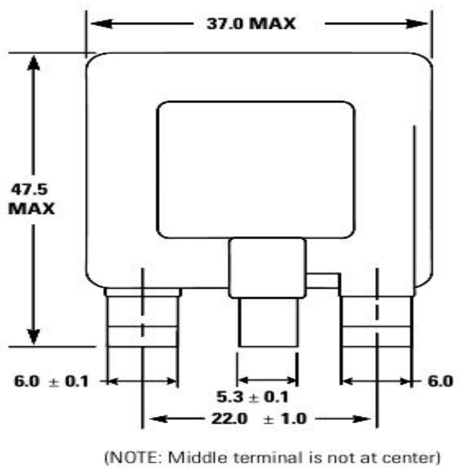
Electrical Characteristics 34S Series（Thermally Protected Varistors）

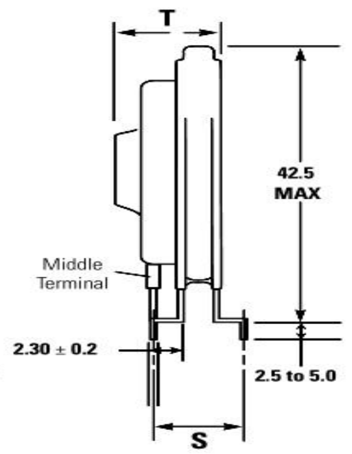
Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge current	Maximum Energy (10/1000μs)	Rated Power	Dimension Tmax	Dimension e 1 max
	V_{AC}(V)	V_{DC}(V)	V_{1mA}(V)	I_P(A)	V_C(V)	8/20uS(A)	(J)	(W)	(mm)	(mm)
VDR34M181K	115	150	180(162-198)	300	300	40000	350	13	2.8	5.2
VDR34M201K	130	170	200(180-220)	300	340	40000	360	13	2.9	5.5
VDR34M221K	140	180	220(198-242)	300	360	40000	360	13	3	5.7
VDR34M241K	150	200	240(216-264)	300	395	40000	390	13	3.1	5.9
VDR34M271K	175	225	270(243-297)	300	455	40000	420	13	3.4	6.3
VDR34M301K	190	250	300(270-330)	300	500	40000	460	13	3.5	6.4
VDR34M331K	210	275	330(297-363)	300	550	40000	500	13	3.6	6.5
VDR34M361K	230	300	360(324-396)	300	595	40000	510	13	3.9	6.5
VDR34M391K	250	320	390(351-429)	300	650	40000	530	13	4	6.5
VDR34M431K	275	350	430(387-473)	300	710	40000	600	14.5	4.3	6.8
VDR34M471K	300	385	470(423-517)	300	775	40000	650	14.5	4.5	6.8
VDR34M511K	320	415	510(459-561)	300	845	40000	700	15	4.7	6.9
VDR34M561K	350	460	560(504-616)	300	925	40000	730	15	5	7.4
VDR34M621K	385	505	620(558-682)	300	1025	40000	780	15.8	5.4	7.6
VDR34M681K	420	560	680(612-748)	300	1120	40000	810	15.8	5.7	7.85
VDR34M751K	460	615	750(675-825)	300	1240	40000	850	15.8	5.9	8.15
VDR34M781K	485	640	780(702-858)	300	1290	40000	930	17	6.1	8.25
VDR34M821K	510	670	820(738-902)	300	1355	40000	970	17	6.6	8.6
VDR34M911K	550	745	910(819-1001)	300	1500	40000	1050	17	6.8	8.65
VDR34M102K	625	825	1000(900-1100)	300	1650	40000	1120	18	7.5	9.25
VDR34M112K	680	895	1100(990-1210)	300	1815	40000	1250	18	8.2	9.85
VDR34M122K	750	990	1200(1080-1320)	300	1980	40000	1340	18	8.8	10.65

Notes: Leakage Current (@83% of V1mA):IR≤25μA









Reliability Test

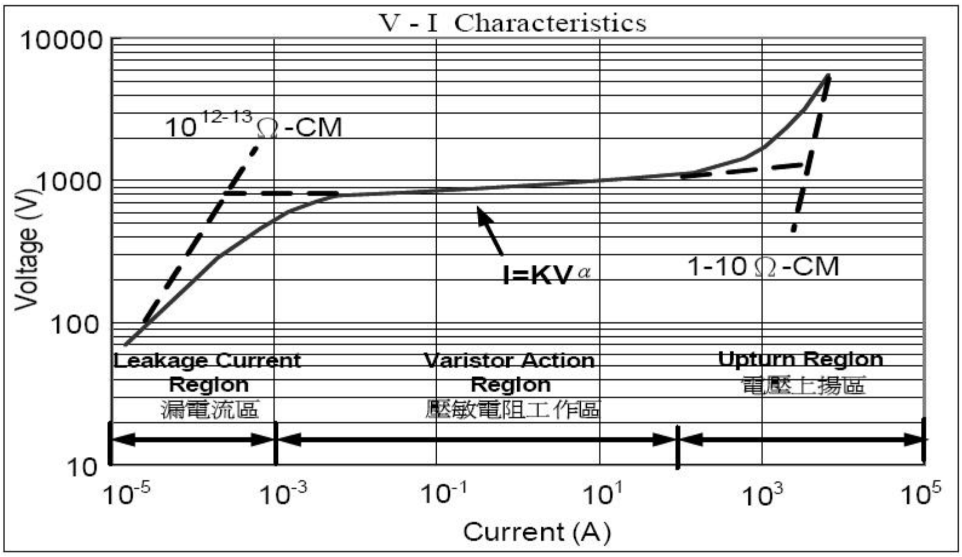
Mechanical Ratings

Test Parameter	Test Condition / Description	Diameter	Loading	Performance Requirements
Terminal Pull Strength	After gradually applying the load specified below and keeping the unit fixed for ten seconds, the terminal shall be visually examined for any damage.	0.6mm 0.8mm 1.0mm	1.0 Kg 1.0 Kg 2.0 Kg	No visible damage
Terminal Bending Strength	The unit shall be secured with its terminal kept vertical and the weight specified below be applied in the axial direction. The terminal shall gradually be bent by 90° in one direction, then 90° in the opposite direction, and again back to the original position. The damage of the terminal shall be visually examined.	0.6mm 0.8mm 1.0mm	0.5 Kg 0.5 Kg 1.0 Kg	No visible damage
Vibration	The Specimen shall be vibrated by its lead wires with a total amplitude of 1.5 and a varying frequency of 10~55~10HZ(each minutes) for a period of 2 hours respectively in each X,Yand Z directions.			No visible damage VB/VB% ±5%
Soldering-solderability	After dipping the terminal to depth of approximately 3 from the specimen in a soldering bath of 260 for 10±1(D5: 5±1) seconds. Thereafter the terminal shall be visually examined.			Terminations shall be uniformly tinned
Soldering- Resistance to Solder Heat	After preheating the specimen, the specimen shall be completely immersed into a soldering bath having a temperature of 260±5 for 10±1 (D5: 5±1) seconds or iron of 400±5 for 3±0.5 seconds. There after the change of Vb and mechanical damage shall be examined.			No visible damage VB/VB% ±5%

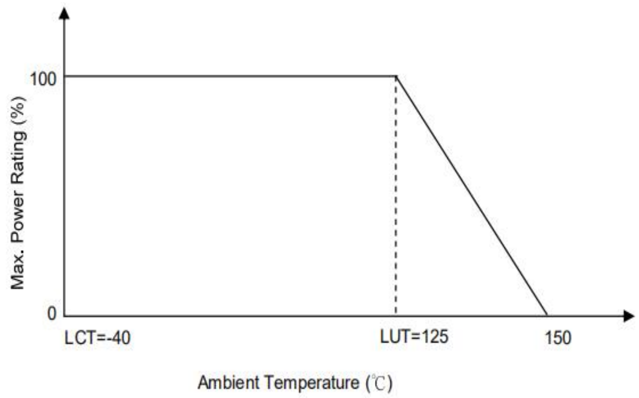
ENVIRONMENTAL RATINGS

Dry Heat Loading	The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room temperature and normal humidity over 2 hours. Thereafter, the change of Vb and mechanical damage shall be examined. Ambient temp 125±2 ; Period 1000±24hours.			VB/VB% ±10%
High Temperature Storage	In a drying oven without load. Ambient temp 125±2 ; period 1000±24hours			VB/VB% ±5%
Damp Heat Loading	The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room temperature and normal humidity over 2 hours. Thereafter, the change of Vb and mechanical damage shall be examined. Ambient condition 40±2 , 90 to 95%R.H. ; period 1000±24 hours			VB/VB% ±10%
Temperature Cycle	Condition the specimen to each temperature form step 1 to step 4 in this order for the period shown in the table of specifications. The change of Vb and mechanical damage shall be examined after 2 hours.	Temp°C -40±3°C Room Temp 85±2°C Room Temp	Period 30 min. 15 min. 30 min. 15 min.	No visible damage VB/VB% ±10%
Surge Lifetime Rating	The change of Vb shall be measured after the impulse listed below is applied 10,000 times continuously with the interval of ten seconds at room temperature.			No visible damage VB/VB% ±10%
Service temperature range	-40℃ ～ + 85℃(+125℃)			No visible damage △ VB/VB%≦±10%
Storage temperature range	-40℃ ～ +125℃ (+150℃)			No visible damage △ VB/VB%≦±10%
Voltage Proof	Voltage 2500VAC Leakage Current 0.5mA Time 60 Seconds			No Breakdown

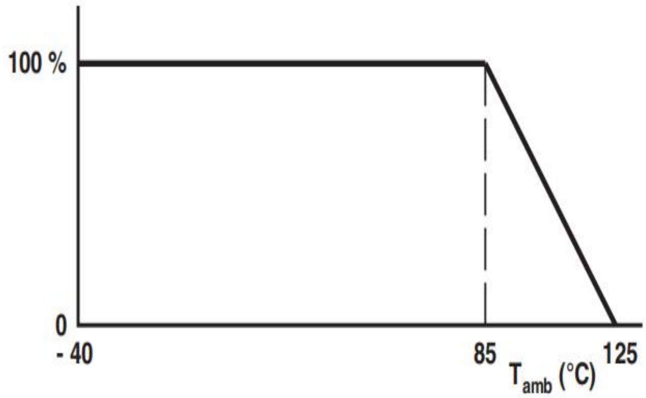
The maximum voltage between two terminals with the specification standard impulse current.



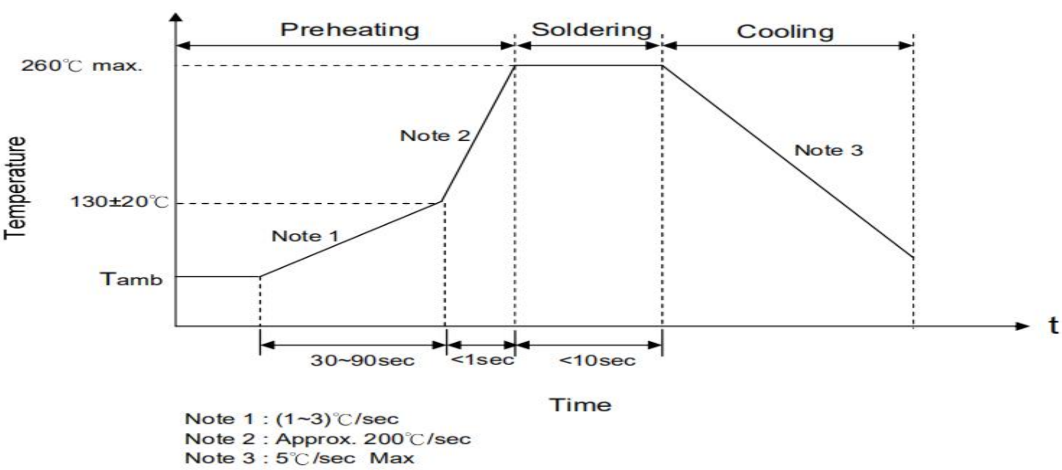
When operating temperature exceeds125 , the power,the Max.continuous operation Voltage,the Max.Surge Current and the Max.Energy should be derated as below figure,the derated coefficient is -4%



Maximum Voltage
Maximum Dissipation
Maximum Energy
Maximum Transient Current



Wave Soldering Profile



直热式负温度系数热敏电阻器
Directly heated negative temperature coefficient thermistors

产品特点Feature of Power Thermistor

1.1应用范围Appliaction

○转换电源，开关电源，UPS电源 ○Switching power-supply,switch power,ups power

○镇流器及各类加热器 ○Electronic energy saving lamps electronic ballast and all kinds of electric heater

○各类显像管，显示器 ○All kinds of RT,display

○电子节能灯.其他照明灯具 ○Bulb and other lighting lamps

1.2特点 Characteristic

○体积小，功率大，抑制浪涌电流能力强 ○Small size,large power,strong capacity of suppression of inrush current

○反应速度快 ○Fast response

○材料常数（B值）大，残余电阻小 ○Big material constant(B value),small residual resistance

○寿命长，可靠性高 ○Long life and high reliability

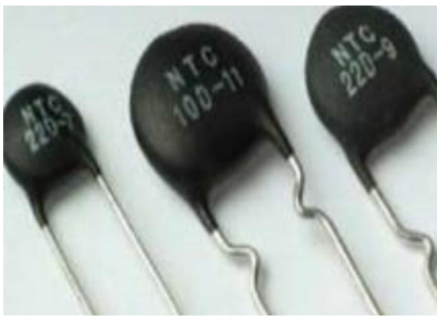
○系列全，应用范围宽 ○Complete series,wide applications

2、资质认证 Quality Certification

ROHS、REACH

3、产品代码PART NUMBER

NTC	□	D	□□
NTC是中性标志	产品直径 mm	产品形状 Shape	额定功率阻值Ω
Nevtral Sign	Dimension mm	D圆片形 Disk	Rated power Resistance



4、技术参数technical parameters

型号 Part No	R25 (Ω)	最大稳态电流 Max.steady State current (A)	残余电阻* Residual Resistance (Ω)	耗散系数* Dissipation factor (mw/℃)	热时间常数* Thermal time Constant (s)	工作温度 Operating Temperature (℃)
5D-5	5	1	0.35	约6	约20	-40~+150
8D-5	8	0.7	0.77			
10D-5	10	0.7	0.77			
20D-5	20	0.5	0.997			
33D-5	33	0.5	1.88			
5D-7	5	2	0.28	约9	约30	-40~+150
8D-7	8	1	0.77			
10D-7	10	1	0.77			
12D-7	12	1	0.82			
16D-7	16	0.7	1			
20D-7	20	0.6	1.11			
22D-7	22	0.6	1.11			
33D-7	33	0.5	1.49			
3D-9	3	4	0.12	约11	约35	-40~+175
5D-9	5	3	0.21			
6D-9	6	2	0.32			
8D-9	8	2	0.4			
10D-9	10	2	0.46			
12D-9	12	1	0.66			
15D-9	15	1	0.8			
16D-9	16	1	0.8	约11	约35	-40~+175
20D-9	20	1	0.88			
22D-9	22	1	0.95			
33D-9	33	1	1.12			
50D-9	50	1	1.25			
100D-9	100	0.8	3.02			
120D-9	120	0.8	3.02			
2.5D-11	2.5	5	0.1	约14	约50	-40~+175
3D-11	3	5	0.1			
4D-11	4	4	0.15			
5D-11	5	4	0.16			
8D-11	8	3	0.25			
10D-11	10	3	0.28			
12D-11	12	2	0.46			
15D-11	15	2	0.47			
16D-11	16	2	0.47			
20D-11	20	2	0.51			
22D-11	22	2	0.56			
33D-11	33	1.5	0.67			
47D-11	47	1.5	1.02			
50D-11	50	1.5	1.22			

4、技术参数technical parameters

型号 Part No	R25 (Ω)	最大稳态电流 Max.steady State current (A)	残余电阻* Residual Resistance (Ω)	耗散系数* Dissipation factor (mw/℃)	热时间常数* Themal time Constant (s)	工作温度 Operating Temperature (℃)
2.5D-13	2.5	6	0.088	约15	约68	-40~+200
3D-13	3	6	0.092			
4.7D-13	4.7	5	0.12			
5D-13	5	5	0.125			
8D-13	8	4	0.194			
10D-13	10	4	0.206			
16D-13	16	3	0.335			
18D-13	18	3	0.372			
20D-13	20	3	0.372			
30D-13	30	2.5	0.517			
47D-13	47	2	0.81			
1D-15	1	8	0.071	约18	约86	-40~+200
1.3D-15	1.3	8	0.071			
1.5D-15	1.5	8	0.071			
2.5D-15	2.5	8	0.071			
3D-15	3	7	0.075			
5D-15	5	6	0.112			
7D-15	7	5	0.173			
8D-15	8	5	0.178			
10D-15	10	5	0.18			
15D-15	15	4	0.268			
16D-15	16	4	0.268			
18D-15	18	4	0.288			
20D-15	20	4	0.288			
30D-15	30	3.5	0.438			
47D-15	47	3	0.68			
50D-15	50	3	0.72			
1.3D-20	1.3	9	0.037	约24	约113	-40~+200
1.5D-20	1.5	9	0.037			
2.5D-20	2.5	8	0.055			
3D-20	3	8	0.055			
5D-20	5	7	0.087			
8D-20	8	6	0.142			
10D-20	10	6	0.162			
16D-20	16	5	0.212			
20D-20	20	5	0.212			

Y1 Capacitance and Dimensions

TYPENUMBER	O.T.	T.C.	CAP.	TOL.	DIMENSION(mm)	
					F	T max
ZD1R0DY5P Y1	-25°C - +125°C	Y5P （B） ±22%	1PF-10PF	D ±0.5PF	10±0.8	5
ZD 100KY5P Y1			10PF	K ±10%	10±0.8	5
ZD 120KY5P Y1			12PF		10±0.8	5
ZD 150KY5P Y1			15PF		10±0.8	5
ZD 180KY5P Y1			18PF		10±0.8	5
ZD 220KY5P Y1			22PF		10±0.8	5
ZD 270KY5P Y1			27PF		10±0.8	5
ZD 330KY5P Y1			33PF		10±0.8	5
ZD 390KY5P Y1			39PF		10±0.8	5
ZD 470KY5P Y1			47PF		10±0.8	5
ZD 560KY5P Y1			56PF		10±0.8	5
ZD 680KY5P Y1			68PF		10±0.8	5
ZD 820KY5P Y1			82PF		10±0.8	5
ZD 101KY5PY1			100PF		10±0.8	5
ZD 151KY5PY1			150PF		10±0.8	5
ZD 221KY5P Y1			220PF		10±0.8	5
ZD 331KY5P Y1			330PF		10±0.8	5
ZD471KY5P Y1			470PF		10±0.8	5
ZD 561KY5P Y1			560PF		10±0.8	5
ZD 681KY5P Y1			680PF		10±0.8	5
ZD 821KY5P Y1			820PF		10±0.8	5
ZD 102KY5P Y1			1000PF		10±0.8	5
ZD 152KY5P Y1			1500PF		10±0.8	5
ZD 222KY5P Y1			2200PF		10±0.8	5
ZD 332KY5P Y1			3300PF		10±0.8	5
ZD 392KY5P Y1			3900PF		10±0.8	5
ZK472KY5P Y1			4700PF		10±0.8	5
ZD 331KY5U Y1		Y5U （E） +22%~-68%	330PF	K.M	10±0.8	5
ZD 391KY5U Y1			390PF		10±0.8	5
ZD 471KY5U Y1			470PF		10±0.8	5
ZD 561KY5U Y1			560PF		10±0.8	5
ZD 681KY5U Y1			680PF		10±0.8	5
ZD 821KY5U Y1			820PF		10±0.8	5
ZD 102KY5U Y1			1000PF		10±0.8	5
ZD 152KY5U Y1			1500PF		10±0.8	5
ZD 222KY5U Y1			2200PF		10±0.8	5
ZD 332KY5U Y1			3300PF		10±0.8	5
ZD 392KY5U Y1			3900PF		10±0.8	5
ZD 472KY5U Y1			4700PF		10±0.8	5
ZD 562KY5U Y1			5600PF		10±0.8	5
ZD 682KY5U Y1			6800PF		10±0.8	5
ZD 822KY5U Y1			8200PF		10±0.8	5
ZD 103KY5U Y1			10000PF		10±0.8	5

TYPENUMBER	O.T.	T.C.	CAP.	TOL.	DIMENSION(mm)	
					F	T max
ZD 681MY5V Y1	-25°C - +85°C	Y5V（F） +22%~-94%	680PF	M ±20%	10±0.8	5
ZD 821MY5V Y1			820PF		10±0.8	5
ZD 102MY5VY1			1000PF		10±0.8	5
ZD 152MY5VY1			1500PF		10±0.8	5
ZD222MY5VY1			2200PF		10±0.8	5
ZD 272MY5V Y1			2700PF		10±0.8	5
ZD 332MY5V Y1			3300PF		10±0.8	5
ZD 392MY5V Y1			3900PF		10±0.8	5
ZD 742MY5V Y1			4700PF		10±0.8	5
ZD 562MY5V Y1			5600PF		10±0.8	5
ZD 682MY5V Y1			6800PF		10±0.8	5
ZD 822MY5V Y1			8200PF		10±0.8	5
ZD 103MY5VY1			10000PF		10±0.8	5

Y2 Capacitance and Dimensions

TYPENUMBER	O.T.	T.C.	CAP.	TOL.	DIMENSION(mm) F	DIMENSION(mm) T max
ZE 1R0DY5PY2			1PF-10PF	±0.5PF	7.5±1	4
ZE 100KY5 PY2			10PF		7.5+1	4
ZE 120KY5PY2			12PF		7.5±1	4
ZE 150KY5PY2			15PF		7.5±1	4
ZE 180KY5PY2			18PF		7.5+1	4
ZE 200KY5PY2			20PF		7.5±1	4
ZE 220KY5PY2			22PF		7.5±1	4
ZE 240KY5PY2			24PF		7.5+1	4
ZE 270KY5PY2			27PF		7.5±1	4
ZE 300KY5PY2			30PF		7.5±1	4
ZE 330KY5PY2			33PF		7.5+1	4
ZE 360KY5PY2			36PF		7.5±1	4
ZE 390KY5PY2			39PF		7.5+1	4
ZE 470KY5PY2			47PF		7.5±1	4
ZE 560KY5PY2			56PF		7.5±1	4
ZE 680KY5PY2			68PF		7.5+1	4
ZE 820KY5PY2			82PF		7.5±1	4
ZE 101KY5PY2			100PF		7.5+1	4
ZE 121KY5PY2			120PF		7.5±1	4
ZE 151KY5PY2	-25°C ~ + 125°C	Y5P（B） ±22%	150PF		7.5±1	4
ZE 181KY5PY2			160PF	±10%	7.5±1	4
ZE 221KY5PY2			220PF		7.5±1	4
ZE 271KY5PY2			270PF		7.5±1	4
ZE 331KY5PY2			330PF		7.5+1	4
ZE 391KY5PY2			390PF		7.5±1	4
ZE 471KY5PY2			470PF		7.5±1	4
ZE 561KY5PY2			560PF		7.5±1	4
ZE 681KY5PY2			680PF		7.5±1	4
ZE 821KY5PY2			820PF		7.5±1	4
ZE 102KY5PY2			1000PF		7.5±1	4
ZE 152KY5PY2			1500PF		7.5±1	4
ZE 222KY5PY2			2200PF		7.5+1	4
ZE 272KY5PY2			2700PF		10/7.5±1	4
ZE 332KY5PY2			3300PF		10/7.5±1	4
ZE 392KY5PY2			3900PF		10/7.5±1	4
ZE 472KY5PY2			4700PF		10/7 5+1	4
ZE 562KY5PY2			5600PF		10/7.5+1	4
ZE 682KY5PY2			6800PF		10/7.5±1	4
ZE 822KY5PY2			8200PF		10/7.5±1	4
ZE 103KY5PY2			10000PF		10/7.5±1	7
ZE 471M Y5U Y2			470PF		7.5±1	4
ZE 561M Y5U Y2			560PF		7.5±1	4
ZE 681M Y5U Y2			680PF		7.5±1	4
ZE 821M Y5U Y2			820PF		7.5±1	4
ZE 102MY5U Y2			1000PF		7.5±1	4
ZE 152M Y5U Y2			1500PF		7.5±1	4
ZE 222M Y5U Y2	-25°C ~ + 125°C	Y5U （E） +22%~-68%	2200PF		7.5±1	4
ZE 272M Y5U Y2			2700PF	±20%	7.5±1	4
ZE 332M Y5U Y2			3300PF		7.5±1	4
ZE 392MY5U Y2			3900PF		7.5±1	4
ZE 472MY5U Y2			4700PF		7.5±1	4
ZE 562M Y5U Y2			5600PF		10±1	4
ZE 682M Y5U Y2			6800PF		10±1	4
ZE 822M Y5U Y2			8200PF		10±1	4
ZE 103M Y5U Y2			10000PF		10±1	6
ZE 102MY5VY2			1000PF		7.5±1	4
ZE 152M Y5VY2			1500PF		7.5±1	4
ZE 222M Y5V Y2			2200PF		7.5±1	4
ZE 272MY5VY2			2700PF		7.5±1	4
ZE 332MY5V Y2			3300PF		7.5±1	4
ZE 392M Y5V Y2	-25°C ~ + 125°C	Y5V （F） +22%~-94%	3900PF	±20%	7.5±1	4
ZE 472MY5V Y2			4700PF		7.5±1	4
ZE 562M Y5V Y2			5600PF		10±1	4
ZE 682M Y5V Y2			6800PF		10±1	4
ZE 822M Y5V Y2			8200PF		10±1	4
ZE 103MY5V Y2			10000PF		10±1	5

金属化聚酯膜电容器(Metallized Polyester Capacitor)

■外形尺寸 Dimensions(mm)

电容量 (μF)	100VDC					250VDC					400VDC					630VDC				
	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d	W	H	T	P	d
0.01																13	9	4	10	0.6
0.012																13	9	4	10	0.6
0.015											10	9	4	7.5	0.6	13	11	5	10	0.6
0.018											10	9	4	7.5	0.6	13	11	5	10	0.6
0.022											10	9	4	7.5	0.6	13	12	6	10	0.6
0.027											10	11	5	7.5	0.6	13	12	6	10	0.6
0.033											10	11	5	7.5	0.6	13	13	7	10	0.6
0.039						10	9	4	7.5	0.6	13	9	4	10	0.6	13	14	8	10	0.6
0.047						10	9	4	7.5	0.6	13	11	5	10	0.6	13	15	8	10	0.6
0.056						10	9	4	7.5	0.6	13	11	5	10	0.6	18	11	5	15	0.8
0.068						10	9	4	7.5	0.6	13	11	5	10	0.6	18	12	6	15	0.8
0.082						10	11	5	7.5	0.6	13	12	6	10	0.6	18	12	6	15	0.8
0.1	10	9	4	7.5	0.6	10	11	5	7.5	0.6	13	12	6	10	0.6	18	13.5	7.5	15	0.8
0.12	10	9	4	7.5	0.6	10	11	5	7.5	0.6	18	11	5	15	0.8	18	14.5	8.5	15	0.8
0.15	10	9	4	7.5	0.6	10	12	6	7.5	0.6	18	11	5	15	0.8	18	14.5	8.5	15	0.8
0.18	10	9	4	7.5	0.6	13	9	4	10	0.6	18	12	6	15	0.8	18	16.5	10	15	0.8
0.22	10	9	4	7.5	0.6	13	11	5	10	0.6	18	13.5	7.5	15	0.8	18	18	10	15	0.8
0.27	10	11	5	7.5	0.6	13	11	5	10	0.6	18	13.5	7.5	15	0.8	26	12	7	22.5	0.8
0.33	10	11	5	7.5	0.6	13	12	6	10	0.6	18	14.5	8.5	15	0.8	26	17	8.5	22.5	0.8
0.39	10	11	5	7.5	0.6	18	11	5	15	0.8	18	15	9	15	0.8	26	19	10	22.5	0.8
0.47	13	12	6	10	0.6	18	12	6	15	0.8	18	17.5	8.5	15	0.8	26	19	10	22.2	0.8
0.56	13	11	5	10	0.6	18	12	6	15	0.8	26	16.5	7	22.5	0.8	26	20	11	22.5	0.8
0.68	13	11	5	10	0.6	18	14	7.5	15	0.8	26	17	8.5	22.5	0.8	26	21.5	12	22.5	0.8
0.82	13	12	6	10	0.6	18	14	7.5	15	0.8	26	19	10	22.5	0.8	31	22	13	27.5	0.8
1	13	13	7	10	0.6	18	15	8.5	15	0.8	26	19	10	22.5	0.8	31	22	13	27.5	0.8
1.2	18	12	6	15	0.8	18	15	9	15	0.8	26	20	11	22.5	0.8	31	25	14	27.5	0.8
1.5	18	12	6	15	0.8	18	17	10	15	0.8	31	20	11	27.5	0.8	31	26	18	27.5	0.8
1.8	18	13.5	7.5	15	0.8	26	16	7	23	0.8	31	22	13	27.5	0.8	31	31	22	27.5	0.8
2.2	18	14	7.5	15	0.8	26	17	8.5	23	0.8	31	23.5	14	27.5	0.8	31	31	22	27.5	0.8
2.7	18	15	9	15	0.8	26	19	10	23	0.8										
3.3	18	16	10	15	8	26	19	10	23	0.8										
3.9	26	16	6	22.5	0.8	26	20	11	22	0.8										
4.7	26	17	8.5	22.5	0.8	26	23	12	23	0.8										
5.6	26	18.5	7	22.5	0.8	31	22	13	28	0.8										
6.8	26	19	10	22.5	0.8	31	24	14	28	0.8										
8.2	26	20	10	22.5	0.8	31	25	14	28	0.8										
10	26	21.5	12	22.5	0.8	31	26	18	28	0.8										

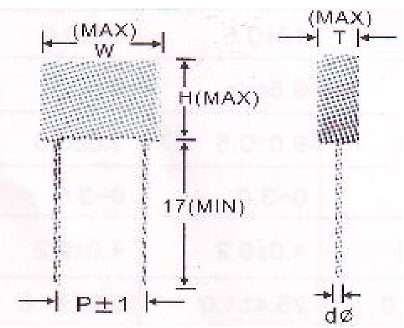
备注:特殊规格依客户要求生产 Note: Capacitors of Special Specification are made according to customer’s need

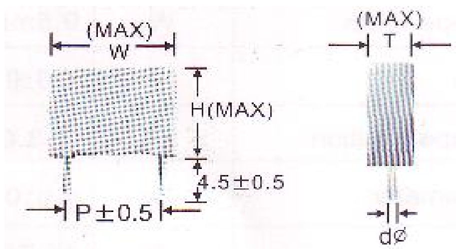
Metallized Polypropylene Capacitor MKP-X2 金属化聚丙烯膜电容器

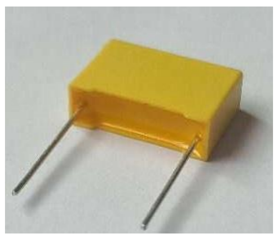
■外形尺寸 Dimensions(mm)

容量	275/305/310/VAC					容量	275/305/310/VAC					容量	275/305/310/VAC				
μF	W	H	T	P	d	μF	W	H	T	P	d	μF	W	H	T	P	d
0.001~0.0047	10	9	4	7.5	0.6	0.04	13	11	5	10	0.6	0.39	18	14.5	8.5	15	0.7
0.0056	10	9	4	7.5	0.6	0.05	13	11	5	10	0.6	0.47	18	16	10	15	0.8
0.0068	10	9	4	7.5	0.6	0.06	13	11	5	10	0.6	0.56	18	16	10	15	0.8
0.0082	10	9	4	7.5	0.6	0.07	13	11	5	10	0.6	0.68	18	19	11	15	0.8
0.01	10	9	4	7.5	0.6	0.08	13	12	6	10	0.6	0.22	26.5	15	6	22.5	0.8
0.012	10	9	4	7.5	0.6	0.1	13	12	6	10	0.6	0.33	26.5	15	6	22.5	0.8
0.015	10	9	4	7.5	0.6	0.12	13	12	6	10	0.6	0.39	26.5	16.5	7	22.5	0.8
0.018	10	9	4	7.5	0.6	0.15	13	12	6	10	0.6	0.47	26.5	16.5	7	22.5	0.8
0.022	10	9	4	7.5	0.6	0.22	13	14	8	10	0.6	0.56	26.5	16.5	7	22.5	0.8
0.027	10	9	4	7.5	0.6	0.01	18	11	5	15	0.7	0.68	26.5	17	8.5	22.5	0.8
0.033	10	9	4	7.5	0.6	0.02	18	11	5	15	0.7	0.82	26.5	19	10	22.5	0.8
0.039	10	11	5	7.5	0.6	0.02	18	11	5	15	0.7	1	26.5	19	10	22.5	0.8
0.047	10	11	5	7.5	0.6	0.03	18	11	5	15	0.7	1.2	26	20	11	22.5	0.8
0.056	10	11	5	7.5	0.6	0.04	18	11	5	15	0.7	1.5	26	21.5	12	22.5	0.8
0.0047	13	11	5	10	0.6	0.05	18	11	5	15	0.7	1.5	31.5	19.5	11	27.5	0.8
56	13	11	5	10	0.6	0.06	18	11	5	15	0.7	2.2	31.5	21.5	13	27.5	0.8
0.0068	13	110	5	10	0.6	0.07	18	11	5	15	0.7						
0.0082	13	11	5	10	0.6	0.08	18	11	5	15	0.7						
0.01	13	11	5	10	0.6	0.1	18	12	6	15	0.7						
0.012	13	11	5	10	0.6	0.12	18	12	6	15	0.7						
0.015	13	11	5	10	0.6	0.15	18	12	6	15	0.7						
0.018	13	11	5	10	0.6	0.18	18	12	6	15	0.7						
0.022	13	11	5	10	0.6	0.22	18	12	6	15	0.7						
0.027	13	11	5	10	0.6	0.27	18	14	7.5	15	0.7						
0.033	13	11	5	10	0.6	0.33	18	15	8.5	15	0.7						

备注:特殊规格依客户要求生产 Note: Capacitors of Special Specification are made according to customer's need







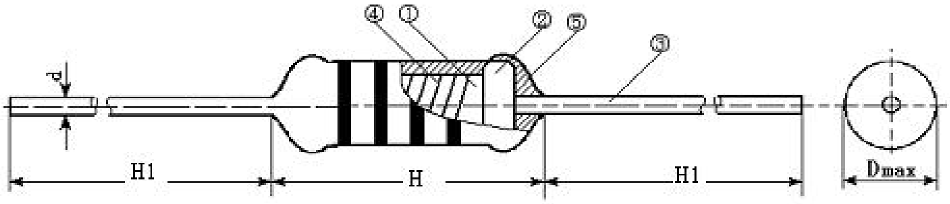
绕线保险电阻器

规格说明

1. 产品特点:

产品熔断性能好，一般使用于电路前端，对整个电路起保护作用.体积小.便于安装.安全可靠.广泛用于节能灯.充电器，电源适配器等电子电路中.此产品符合.ROHS 无卤 REACH标准.并通过相关检测.

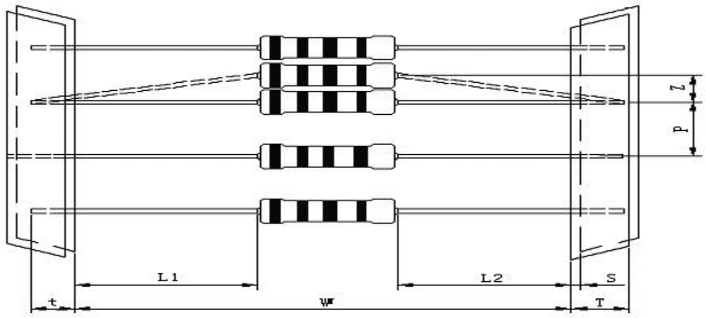
2产品尺寸:



① 瓷基体 ③ 镀锡铜线 ⑤ 包封料
② 帽盖 ④ 合金线材

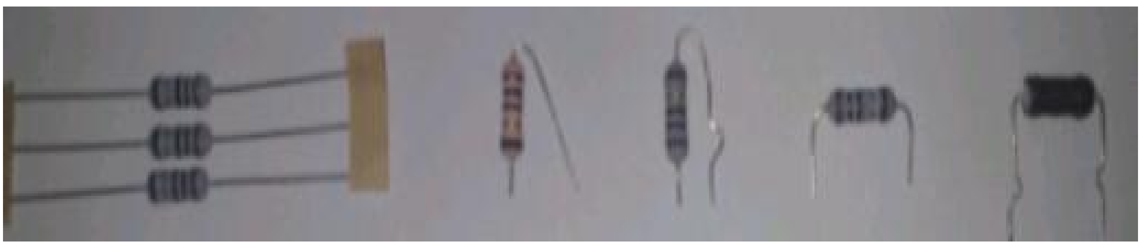
型号	尺寸（MM）			
	H	D	H1	d
1/4W/1/2WS	6.0±0.5	2.3±0.5	26.0±2.0	0.4±0.05
1/2W/1WS	9.0±0.5	3.0±0.5	26.0±2.0	0.5±0.05
1W/2WS	11.0±0.5	4.0±0.5	30.0±2.0	0.6±0.05
2W/3WS	15.0±0.5	4.5±0.5	30.0±2.0	0.7±0.05

7编带尺寸及包装：



规格型号	尺寸（mm）						
	W	P	L1-L2	T	Z	t	S
1/4W/1/2WS	52±2	5±1	＜1.0	6±1	＜1.2	＞3.2	＜0.8
1/2W/1WS	52±2	5±1	＜1.0	6±1	＜1.2	＞3.2	＜0.8
1W/2WS	63±2	5±1	＜1.0	6±1	＜1.2	＞3.2	＜0.8
2W/3WS	73±2	10±1	＜1.0	6±1	＜1.2	＞3.2	＜0.8

产品工艺:



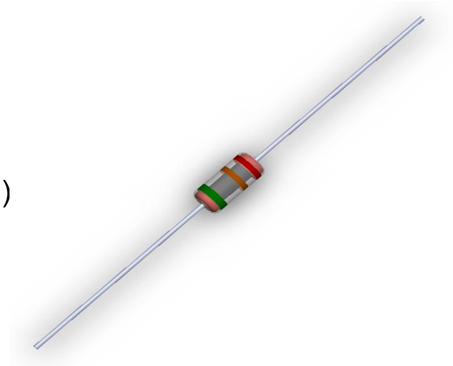
编带 F型 FK型 M型 MK型

Spark Gap Protectors (SPG)

Features

- ◆·Approximately zero leaking current before clamping voltage
- ◆·Less decay at on/off state.
- ◆·High capability to withstand repeated lightning strikes.
- ◆·Low electrode capacitance (≤1.0pF) and high isolation (≥100MΩ)
- ◆·RoHS compliant.
- ◆·Bilateral symmetrical.
- ◆·Temperature, humidity and lightness insensitive.
- ◆·Working temperature: -25℃~ +65 ℃
- ◆·Storage temperature: -25℃~ +85℃

Meets MSL level 1, per J-STD-020



Applications

- ◆·Power Supplies
- ◆·Motor sparks eliminating
- ◆·Relay switching spark absorbing
- ◆·Data line pulse guarding
- ◆·Electronic devices requiring UL497A and UL497B compliant
- ◆·Telephone/Fax/Modem
- ◆·High frequency signal transmitters/receivers
- ◆·Satellite antenna
- ◆·Radio amplifiers
- ◆·Alarm systems

Cathode ray tubes in Monitors/TVs

Part Numbering

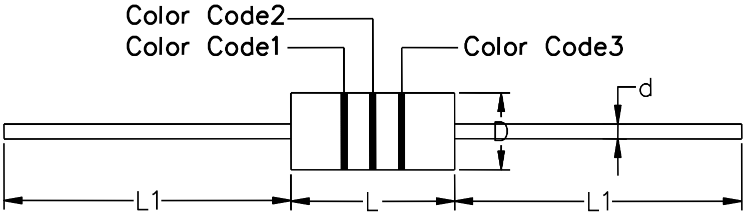
UNC - 201 M
(1) (2) (3)

(1) Series

(2) V_S Voltage, e.g. 201=20X10^1=200V

(3) V_S Voltage tolerance: L - ±15%,
M - ±20%, N - ±30%

Dimensions



Symbol	Inches	Millimeters
L1	1.102±0.079	28.0±2.0
L	0.252±0.039	6.7±1.0
d	0.020±0.002	0.5±0.05
D	0.122±0.020	3.1±0.5

Spark Gap Protectors (SPG)

Electrical Characteristics

Part Number	DC Spark-over Voltage Vs(V)	Minimum Insulation Resistance IR(OHM)/DC	Maximum Capacitance 1KHZ-6Vmax C (pF)	Surge Current Capacity 8/20 μS	Surge Life Test
UNC-141N	140(98~182)	100M / 50V	1	3000A	10KV / 150A , >300T
UNC-181N	180(126~234)	100M / 50V	1	3000A	10KV / 150A , >300T
UNC-201M	200(160~240)	100M /100V	1	3000A	10KV / 150A , >300T
UNC-251M	250(200~300)	100M /100V	1	3000A	10KV / 150A , >300T
UNC-301M	300(240~360)	100M /100V	1	3000A	10KV / 150A , >300T
UNC-401M	400(320~480)	100M / 250V	1	3000A	10KV / 150A , >300T
UNC-471M	470(400~560)	100M / 250V	1	3000A	10KV / 150A , >300T
UNC-501M	500(400~600)	100M / 250V	1	3000A	10KV / 150A , >300T
UNC-601M	600(480~720)	100M / 250V	1	3000A	10KV / 150A , >300T
UNC-102M	1000(800~1200)	100M / 500V	1	3000A	10KV / 150A , >300T
UNC-152M	1500(1200~1800)	100M / 500V	1	3000A	10KV / 150A , >300T

Color Code

Part Number	Color Code1	Color Code2	Color Code3
UNC-141N	Brown	Red	White
UNC-201M	Red	Brown	White
UNC-301M	Orange	Red	White
UNC-401M	Yellow	Brown	White
UNC-501M	Green	Orange	Red
UNC-601M	Blue	Red	Orange
UNC-102M	Black	Black	Red
UNC-152M	Black	Green	Red

Thank You !

- 惠州市嵩隆力上電子
- Overall circuit protection solution provider