

Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

MERITEK

FEATURE

- Operating / Storage Temperature: -40°C ~ +105°C / -40°C +125°C
- Varistor Voltage: 18V to 1800V
- Withstanding Surge Current Rating Up to 15KA
- Various Lead Form and Spacing Options
- UL/cUL Safety Approved: Certification No: E326004
- VDE Safety Approved: Certification No: 40013638



PART NUMBERING SYSTEM

MVR **14** **D** **911** **K** **O**
(1) (2) (3) (4) (5) (6)

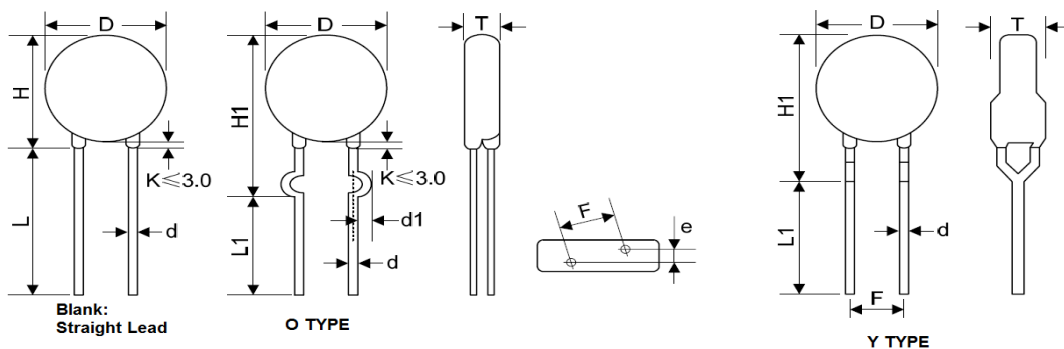


No	Item	Digit	Description	Series Reference
(1)	Meritek Series	MVR	Metal Oxide Varistor	Leaded Type
(2)	Diameter	14	14: ϕ 14mm	5, 7, 10, 14, 20, 25
(3)	Lead/Package Type	D	D: Round Disk or Dual Square Disk	S: Single Square, A: Bare
(4)	Voltage	911	911: 910VDC	18V~1800V
(5)	Tolerance	K	K: \pm 10%	-10% ~ +10%
(6)	Lead Type	O	O: Out kink	Blank: Straight, Y: Y Kink, O: Out Kink,

ELECTRICAL CHARACTERISTICS AND DIMENSIONS REFERENCE TABLE

MVR Series	Varistor DC Voltage @1mA	Maximun Energy (10/1K μ s)	D	H	H1	L min	L1 min	d	d1 \pm 0.4	F
MVR05	18V~750V	0.4J~16.0J	5.0~7.5	5.5~10.0	8.0~13.0	20.0	15.0	0.6 \pm 0.05	1.2	5.0 \pm 0.8
MVR07	18V~820V	0.9~33.0J	7.0~9.0	7.5~12.0	9.0~13.5	20.0	15.0	0.6 \pm 0.05	1.2	5.0 \pm 0.8
MVR10	18V~1.1kV	2.1~115.0J	10.0~12.5	10.5~16.0	13.0~17.5	20.0	15.0	0.8 \pm 0.05	1.4	7.5 \pm 0.8
MVR14	18V~1.8kV	4.0~213.0J	13.5~16.0	14.5~19.0	17.0~21.0	20.0	15.0	0.8 \pm 0.05	1.4	7.5 \pm 0.8
MVR20	18V~1.8kV	11.0J~383J	19.5~22.5	20.5~25.0	24.0~28.0	20.0	15.0	0.8 \pm 0.05	1.4	7.5 \pm 0.8
								1.0 \pm 0.05	1.6	10.0 \pm 1.0
MVR25	18V~1.8kV	190J~770J	25.0~28.0	27.0~31.5	-	20.0	-	1.0 \pm 0.1	-	10.0 \pm 1.0
										12.5 \pm 1.0

(Unit: mm)



Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

MERITEK

ELECTRICAL CHARACTERISTICS – MVR05D SERIES

[Back to Top](#)

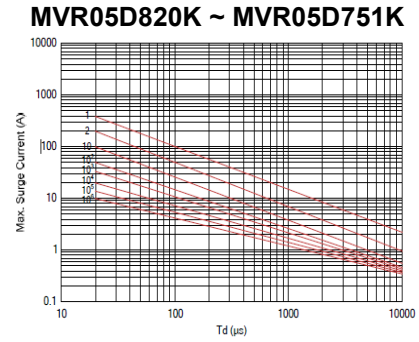
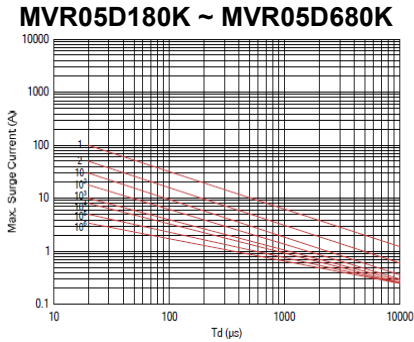
MVR05D Series	Varistor DC Voltage @1mA		Max. Allowable Voltage		Max. Clamping Voltage		Withstanding Surge Current (A)	Max. Energy (10/1Kμs) (J)	Rated Power (W)	Typical Cap. @1kHz (pF)	Dimension	
	V _{DC}	V _{AC}	V _{DC}	V _c	I _p	T _{max}					e ±0.8	
	(V)	(V _{rms})	(V)	(V)	(A)							
MVR05D180K	18(15~21.6)	11	14	40	1	100	0.01	0.4	0.01	1,400	4.5	1.3
MVR05D220K	22(19.5~26)	14	18	48				0.5		1,150	4.6	1.4
MVR05D270K	27(24~31)	17	22	60				0.6		930	4.7	1.6
MVR05D330K	33(29.5~36.5)	20	26	73				0.8		760	4.9	1.5
MVR05D390K	39(35~43)	25	31	80				0.9		640	4.8	1.6
MVR05D470K	47(42~52)	30	38	104				1.1		530	4.9	1.7
MVR05D560K	56(50~62)	35	45	123				1.3		450	5.0	1.9
MVR05D680K	68(61~75)	40	56	145				1.6		370	5.2	2.2
MVR05D820K	82(74~90)	50	65	150	5	400	0.10	2.5	0.10	300	4.1	1.6
MVR05D101K	100(90~110)	60	85	177				3.0		250	4.3	1.8
MVR05D121K	120(108~132)	75	100	210				4.0		210	4.5	2.0
MVR05D151K	150(135~165)	95	125	260				4.1		165	4.8	1.6
MVR05D181K	180(162~198)	115	150	320				4.9		140	4.3	1.7
MVR05D201K	200(185~225)	130	170	355				6.5		125	4.4	1.8
MVR05D221K	220(198~242)	140	180	380				7.5		110	4.5	1.9
MVR05D241K	240(216~264)	150	200	415				8.0		100	4.6	2.0
MVR05D271K	270(243~297)	175	225	475				8.5		95	4.9	2.2
MVR05D301K	300(270~330)	190	250	520				9.0		85	5.0	2.3
MVR05D331K	330(297~363)	210	275	570				9.5		75	5.1	2.3
MVR05D361K	360(324~396)	230	300	620				10.0		70	5.2	2.5
MVR05D391K	390(351~429)	250	320	675				12.0		65	5.4	2.6
MVR05D431K	430(387~473)	275	350	745				13.0		60	5.7	2.8
MVR05D471K	470(423~517)	300	385	810				15.0		55	6.0	3.0
MVR05D511K	510(459~561)	320	415	845				16.0		50	6.2	3.2
MVR05D561K	560(504~616)	350	460	920	16.0	45	6.5	3.4				
MVR05D621K	620(558~682)	385	505	1025	21.0	40	6.5	3.7				
MVR05D681K	680(612~748)	420	560	1120	21.0	35	6.8	4.0				
MVR05D751K	750(675~825)	460	615	1240	22.4	30	6.9	4.1				

Notes:

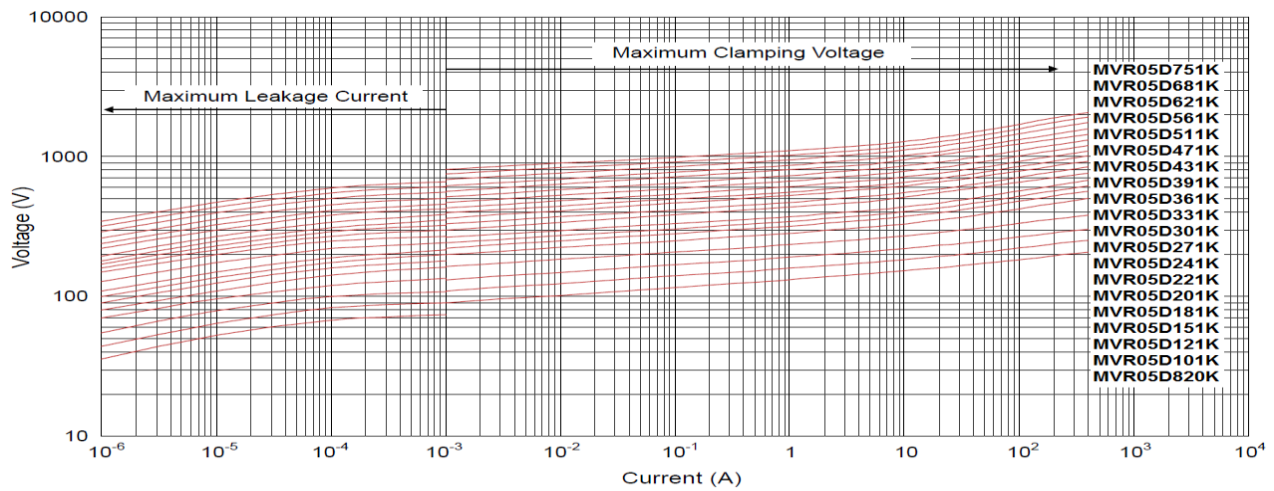
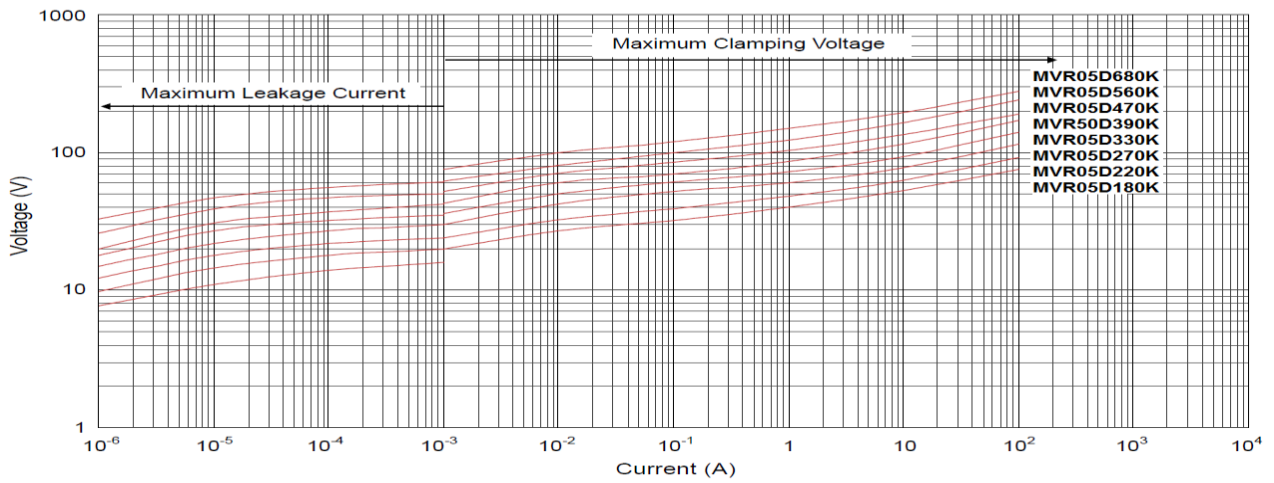
- The tolerance of varistor voltage between 18V and 27V is more than 10%.
- Leakage Current (@83% of V_{1mA}) : IR≤50μA (180K~680K) IR≤25μA (820K~751K)

SURGE CURRENT DERATING CURVES – MVR05D SERIES

[Back to Top](#)



LEAKAGE CURRENT & CLAMPING VOLTAGE CURVES – MVR05D SERIES



Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

MERITEK

ELECTRICAL CHARACTERISTICS - MVR07D SERIES

[Back to Top](#)

MVR07D Series	Varistor DC Voltage @1mA		Max. Allowable Voltage		Max. Clamping Voltage		Withstanding Surge Current	Max. Energy (10/1K μ s)	Rated Power	Typical Cap. @1kHz	Dimension	
	V _{DC}	V _{AC}	V _{DC}	V _c	I _p	T _{max}					e \pm 0.8	
	(V)	(V _{rms})	(V)	(V)	(A)							
MVR07D180K	18(15~21.6)	11	14	36	2.5	250	0.02	0.9	0.02	2800	4.5	1.3
MVR07D220K	22(19.5~26)	14	18	43				1.1		2300	4.6	1.4
MVR07D270K	27(24~31)	17	22	53				1.4		1800	4.7	1.6
MVR07D330K	33(29.5~36.5)	20	26	65				1.7		1500	4.9	1.5
MVR07D390K	39(35~43)	25	31	77				2.1		1300	4.8	1.6
MVR07D470K	47(42~52)	30	38	93				2.5		1100	4.9	1.7
MVR07D560K	56(50~62)	35	45	110				3.1		890	5.0	1.9
MVR07D680K	68(61~75)	40	56	135				3.6		740	5.2	2.2
MVR07D820K	82(74~90)	50	65	135	10	1,200	0.25	5.0	0.25	600	4.1	1.6
MVR07D101K	100(90~110)	60	85	165				6.5		500	4.3	1.8
MVR07D121K	120(108~132)	75	100	200				7.8		420	4.5	2.0
MVR07D151K	150(135~165)	95	125	250				9.7		330	4.8	1.6
MVR07D181K	180(162~198)	115	150	300				11.7		280	4.3	1.7
MVR07D201K	200(180~220)	130	170	340				13.0		250	4.4	1.8
MVR07D221K	220(198~242)	140	180	360				14.0		230	4.5	1.9
MVR07D241K	240(216~264)	150	200	395				15.0		210	4.6	2.0
MVR07D271K	270(243~297)	175	225	455				18.0		185	4.9	2.2
MVR07D301K	300(270~330)	190	250	500				20.0		165	5.0	2.3
MVR07D331K	330(297~363)	210	275	550				23.0		150	5.1	2.3
MVR07D361K	360(324~396)	230	300	595				25.0		140	5.2	2.5
MVR07D391K	390(351~429)	250	320	650				25.0		130	5.4	2.6
MVR07D431K	430(387~473)	275	350	710				28.0		115	5.7	2.8
MVR07D471K	470(423~517)	300	385	775				30.0		105	6.0	3.0
MVR07D511K	510(459~561)	320	415	845				30.0		100	6.2	3.2
MVR07D561K	560(504~616)	350	460	925				30.0		90	6.5	3.4
MVR07D621K	620(558~682)	385	505	1025				33.0		80	7.1	3.7
MVR07D681K	680(612~748)	420	560	1120				33.0		75	7.3	4.0
MVR07D751K	750(675~825)	460	615	1240				67.2		70	7.0	4.1
MVR07D781K	780(702~858)	485	640	1290	67.2	70	7.2	4.2				
MVR07D821K	820(738~902)	510	670	1355	67.2	60	7.5	4.4				

Notes:

- The tolerance of varistor voltage between 18V and 27V is more than 10%.
- Leakage Current (@83% of V_{1mA}) : IR \leq 50 μ A (180K~680K) IR \leq 25 μ A (820K~821K)

Metal Oxide Varistor Leaded Disk Type, 5~25mm

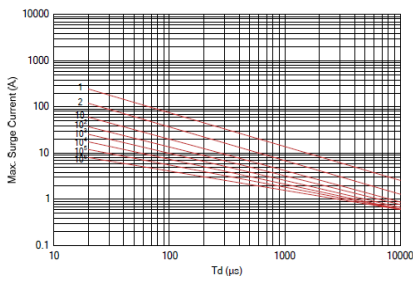
MVR Series

MERITEK

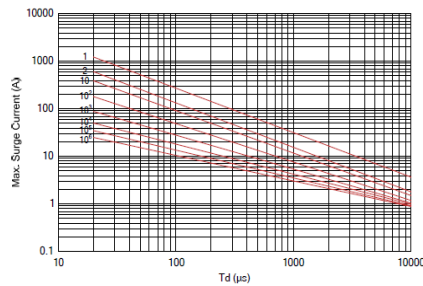
SURGE CURRENT DERATING CURVES – MVR07D SERIES

[Back to Top](#)

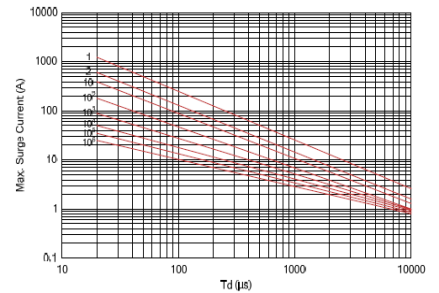
MVR07D180K ~ MVR07D680K



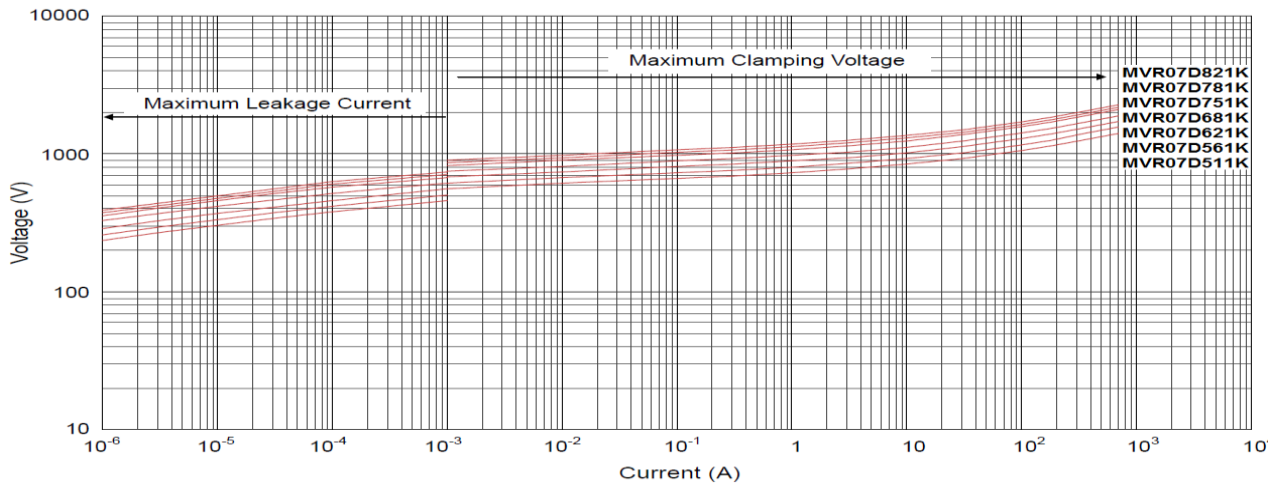
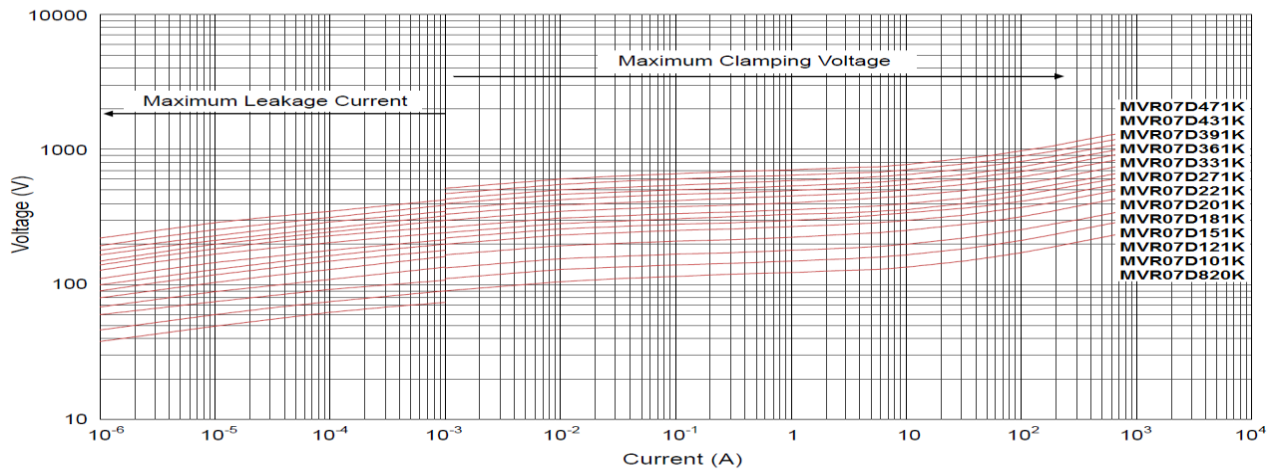
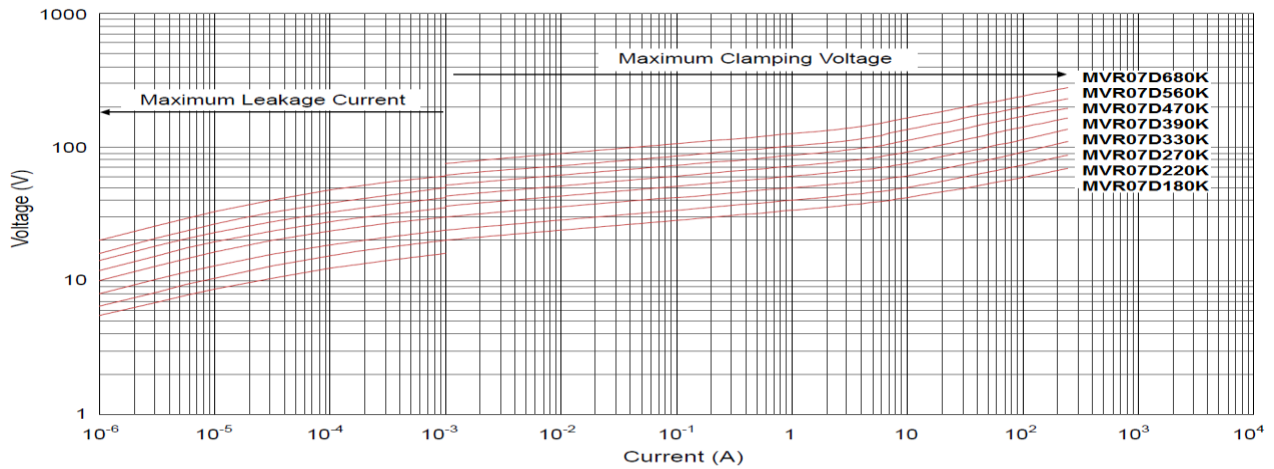
MVR07D820K ~ MVR07D471K



MVR07D511K ~ MVR07D821K



LEAKAGE CURRENT & CLAMPING VOLTAGE CURVES – MVR07D SERIES



Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

MERITEK

ELECTRICAL CHARACTERISTICS - MVR10D SERIES

[Back to Top](#)

MVR10D Series	Varistor DC Voltage @1mA		Max. Allowable Voltage		Max. Clamping Voltage		Withstanding Surge Current (A)	Max. Energy (10/1K μ s) (J)	Rated Power (W)	Typical Cap. @1kHz (pF)	Dimension	
	V _{DC}	V _{AC}	V _{DC}	V _C	I _P	T _{max}					e \pm 0.8	
	(V)	(V _{rms})	(V)	(V)	(A)							
MVR10D180K	18(15~21.6)	11	14	36	5	500	0.05	2.1	0.05	5600	4.6	1.5
MVR10D220K	22(19.5~26)	14	18	43				2.5		4500	4.7	1.6
MVR10D270K	27(24~31)	17	22	53				3.0		3700	4.8	1.8
MVR10D330K	33(29.5~36.5)	20	26	65				4.0		3000	5.0	1.7
MVR10D390K	39(35~43)	25	31	77				4.6		2400	5.3	1.8
MVR10D470K	47(42~52)	30	38	93				5.5		2100	5.4	1.9
MVR10D560K	56(50~62)	35	45	110				7.0		1800	5.5	2.1
MVR10D680K	68(61~75)	40	56	135				8.2		1500	5.6	2.4
MVR10D820K	82(74~90)	50	65	135				12.0		1200	4.7	1.8
MVR10D101K	100(90~110)	60	85	165	15.0	1000	4.9	2.0				
MVR10D121K	120(108~132)	75	100	200	18.0	830	5.1	2.2				
MVR10D151K	150(135~165)	95	125	250	22.0	670	5.4	1.8				
MVR10D181K	180(162~198)	115	150	300	27.0	560	4.8	1.9				
MVR10D201K	200(180~220)	130	170	340	30.0	500	5.0	2.0				
MVR10D221K	220(198~242)	140	180	360	32.0	450	5.1	2.1				
MVR10D241K	240(216~264)	150	200	395	35.0	420	5.2	2.2				
MVR10D271K	270(243~297)	175	225	455	40.0	370	5.4	2.4				
MVR10D301K	300(270~330)	190	250	500	40.0	330	5.5	2.5				
MVR10D331K	330(297~363)	210	275	550	43.0	300	5.8	2.5				
MVR10D361K	360(324~396)	230	300	595	47.0	280	6.0	2.7				
MVR10D391K	390(351~429)	250	320	650	60.0	260	6.2	2.8				
MVR10D431K	430(387~473)	275	350	710	65.0	230	6.5	3.0				
MVR10D471K	470(423~517)	300	385	775	67.0	210	6.7	3.2				
MVR10D511K	510(459~561)	320	415	845	69.0	200	6.8	3.4				
MVR10D561K	560(504~616)	350	460	925	70.0	180	7.0	3.6				
MVR10D621K	620(558~682)	385	505	1025	72.0	160	7.3	3.9				
MVR10D681K	680(612~748)	420	560	1120	75.0	150	7.6	4.2				
MVR10D751K	750(675~825)	460	615	1240	77.0	130	8.0	4.3				
MVR10D781K	780(702~858)	485	640	1290	80.0	130	8.1	4.4				
MVR10D821K	820(738~902)	510	670	1355	85.0	120	8.3	4.6				
MVR10D911K	910(819~1001)	550	745	1500	93.0	110	8.8	5.0				
MVR10D102K	1000(900~1100)	625	825	1650	102.0	100	9.3	5.0				
MVR10D112K	1100(990~1210)	680	895	1815	115.0	90	9.9	5.4				
					25	2,500	0.4					

Notes:

- The tolerance of varistor voltage between 18V and 27V is more than 10%.
- Leakage Current (@83% of V_{1mA}): IR \leq 50 μ A (180K~680K) IR \leq 25 μ A (820K~112K)

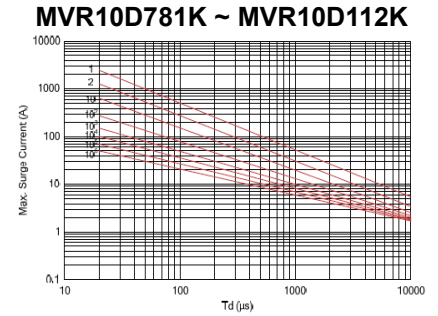
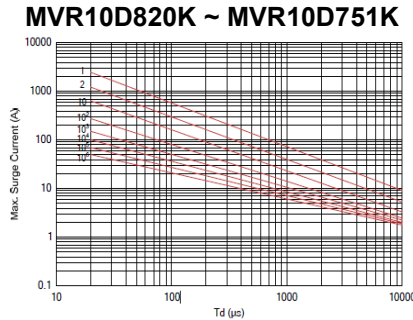
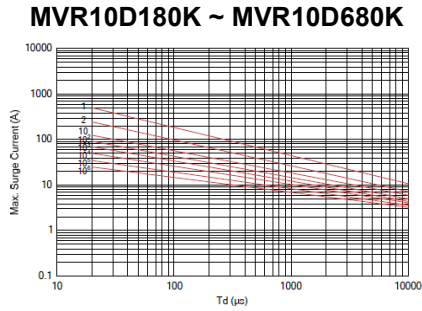
Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

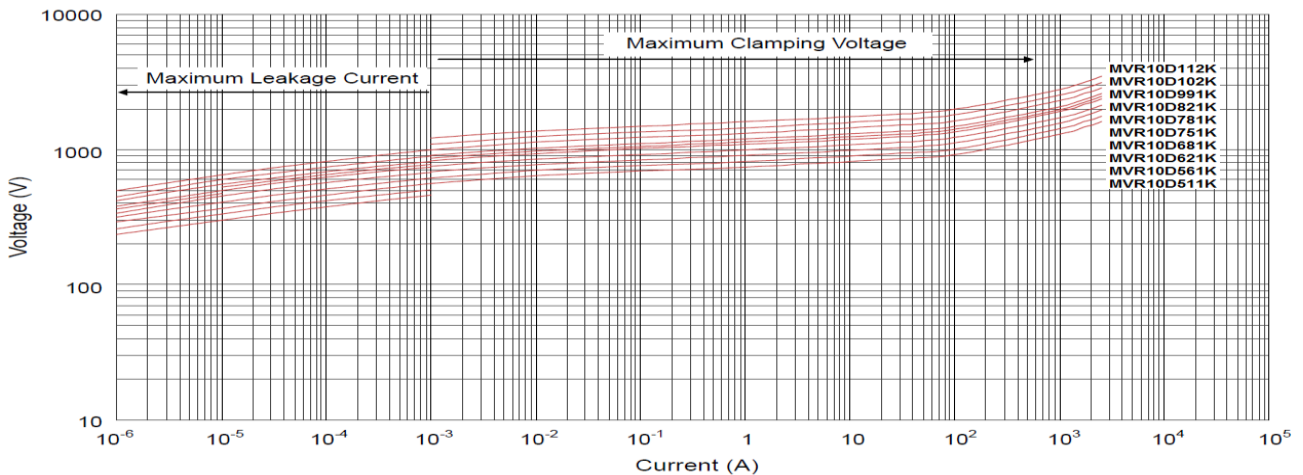
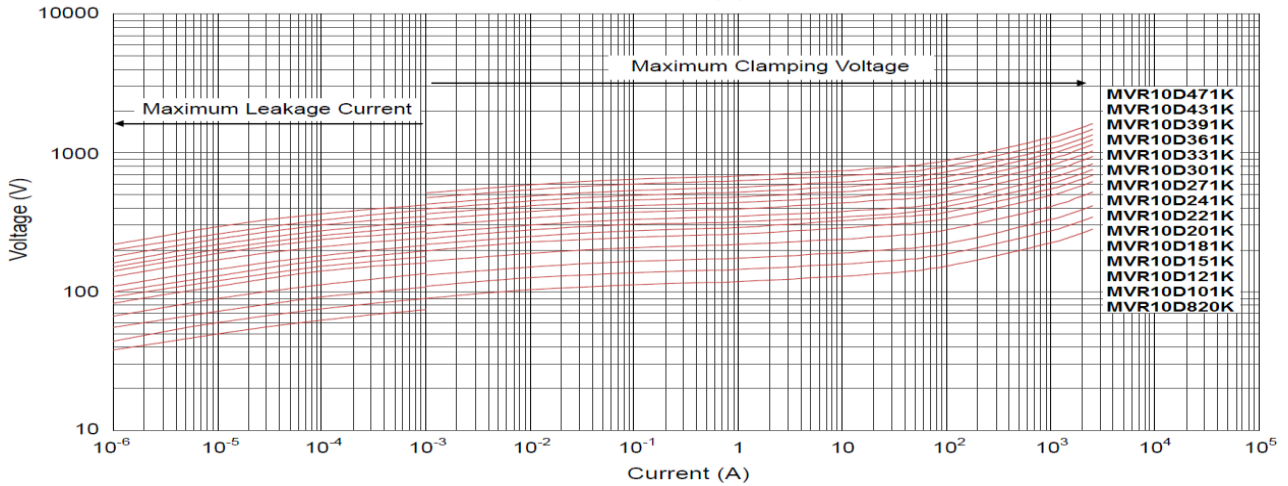
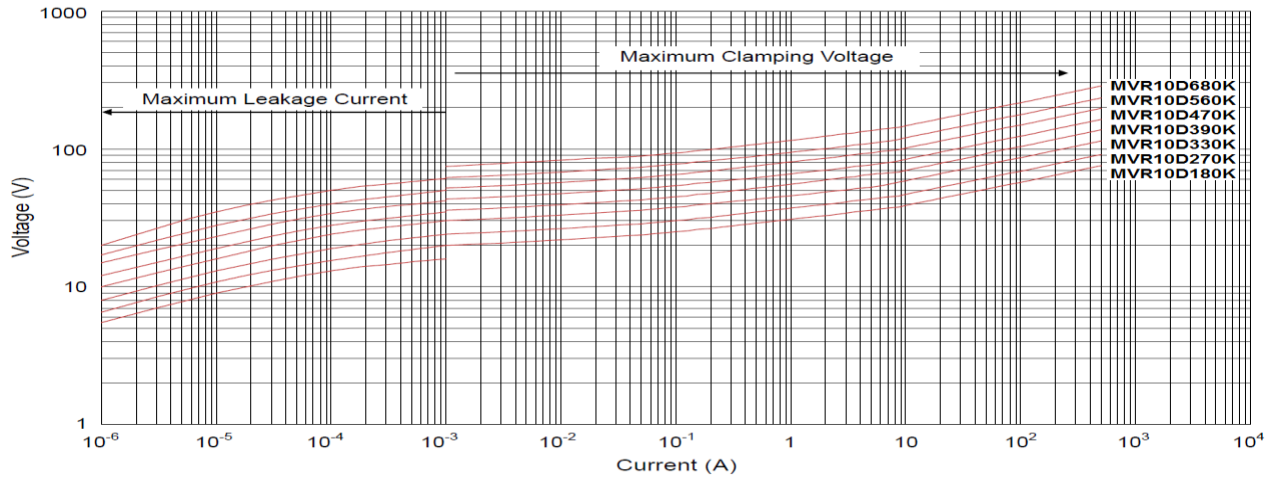
MERITEK

SURGE CURRENT DERATING CURVES – MVR10D SERIES

[Back to Top](#)



LEAKAGE CURRENT & CLAMPING VOLTAGE CURVES – MVR10D SERIES



Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

MERITEK

ELECTRICAL CHARACTERISTICS - MVR14D SERIES

[Back to Top](#)

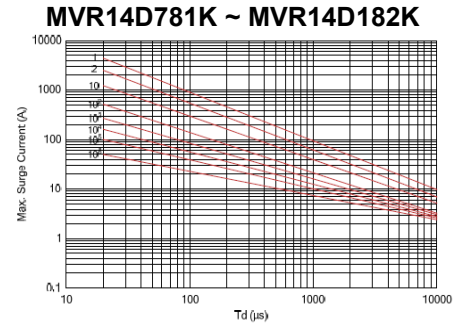
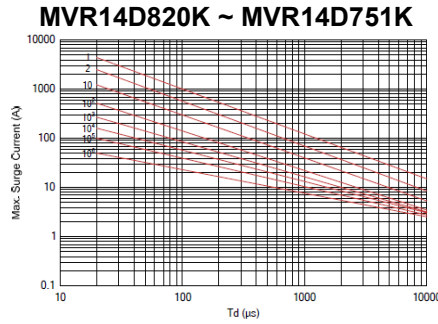
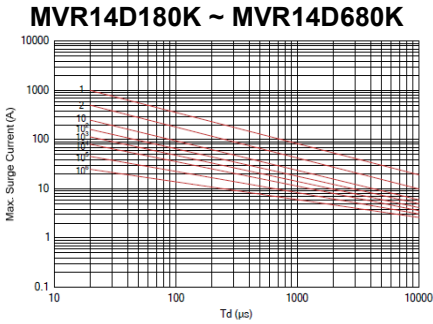
MVR14D Series	Varistor DC Voltage @1mA		Max. Allowable Voltage		Max. Clamping Voltage		Withstanding Surge Current (A)	Max. Energy (10/1Kµs) (J)	Rated Power (W)	Typical Cap. @1kHz (pF)	Dimension	
	V _{DC}	V _{AC}	V _{DC}	V _C	I _P	T _{max}					e ±0.8	
	(V)	(V _{rms})	(V)	(V)	(A)							
MVR14D180K	18(15~21.6)	11	14	36	10	1,000	0.1	4.0	11100	4.6	1.5	
MVR14D220K	22(19.5~26)	14	18	43				5.0	9100	4.7	1.6	
MVR14D270K	27(24~31)	17	22	53				6.0	7400	4.8	1.8	
MVR14D330K	33(29.5~36.5)	20	26	65				7.5	6100	5	1.7	
MVR14D390K	39(35~43)	25	31	77				8.6	5100	5.3	1.8	
MVR14D470K	47(42~52)	30	38	93				10.0	4300	5.3	1.9	
MVR14D560K	56(50~62)	35	45	110				11.0	3600	5.5	2.1	
MVR14D680K	68(61~75)	40	56	135				14.0	2900	5.6	2.4	
MVR14D820K	82(74~90)	50	65	135	50	4,500	0.6	22.0	2400	4.7	1.8	
MVR14D101K	100(90~110)	60	85	165				28.0	2000	4.9	2.0	
MVR14D121K	120(108~132)	75	100	200				32.0	1700	5.1	2.2	
MVR14D151K	150(135~165)	95	125	250				40.0	1300	5.4	1.8	
MVR14D181K	180(162~198)	115	150	300				50.0	1100	4.8	1.9	
MVR14D201K	200(180~220)	130	170	340				57.0	1000	5	2.0	
MVR14D221K	220(198~242)	140	180	360				60.0	900	5.1	2.1	
MVR14D241K	240(216~264)	150	200	395				63.0	830	5.2	2.2	
MVR14D271K	270(243~297)	175	225	455				70.0	740	5.4	2.4	
MVR14D301K	300(270~330)	190	250	500				77.0	670	5.5	2.5	
MVR14D331K	330(297~363)	210	275	550				85.0	610	5.8	2.5	
MVR14D361K	360(324~396)	230	300	595				93.0	560	6	2.7	
MVR14D391K	390(351~429)	250	320	650				100	510	6.2	2.8	
MVR14D431K	430(387~473)	275	350	710				115	460	6.5	3.0	
MVR14D471k	470(423~517)	300	385	775				125	430	6.7	3.2	
MVR14D511K	510(459~561)	320	415	845				125	390	6.8	3.4	
MVR14D561K	560(504~616)	350	460	925				125	360	7	3.6	
MVR14D621K	620(558~682)	385	505	1025				125	320	7.3	3.9	
MVR14D681K	680(621~748)	420	560	1120				130	290	7.6	4.2	
MVR14D751K	750(675~825)	460	615	1240				143	270	8	4.3	
MVR14D781K	780(702~858)	485	640	1290				148	260	8.1	4.4	
MVR14D821K	820(738~902)	510	670	1355				157	240	8.3	4.6	
MVR14D911K	910(819~1001)	550	745	1500				175	220	8.8	5.0	
MVR14D102K	1000(900~1100)	625	825	1650				190	200	9.3	5.0	
MVR14D112K	1100(990~1210)	680	895	1815	213	180	9.9	5.4				
MVR14D122K	1200(1080~1320)	750	990	1980	232	160	10.5	5.8				
MVR14D142K	1400(1260~1540)	880	1140	2310	238	150	11	6.6				
MVR14D162K	1600(1440~1760)	1000	1280	2640	243	140	11.5	7.4				
MVR14D182K	1800(1620~1980)	1100	1465	2970	250	130	12.5	8.2				

Notes:

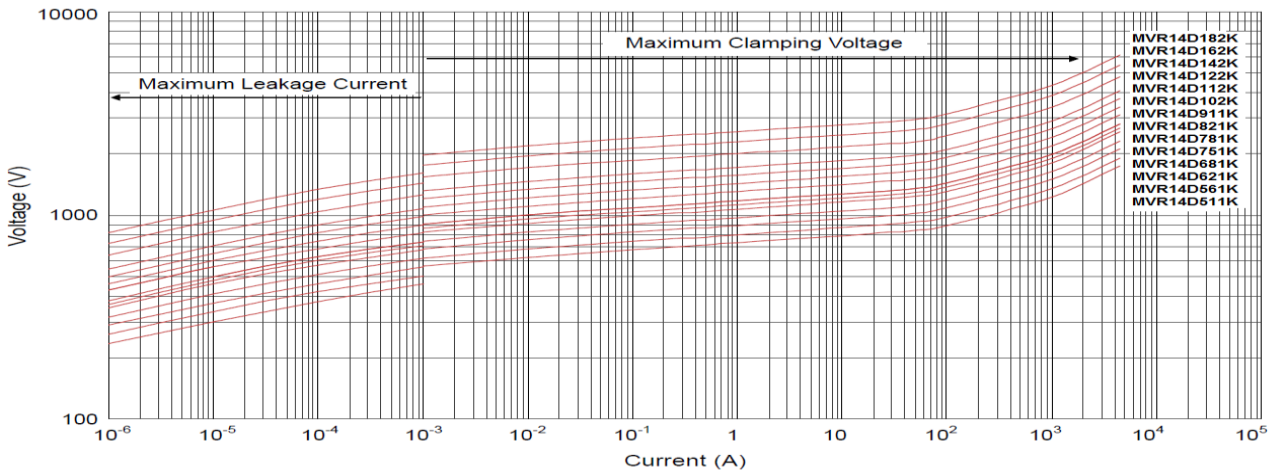
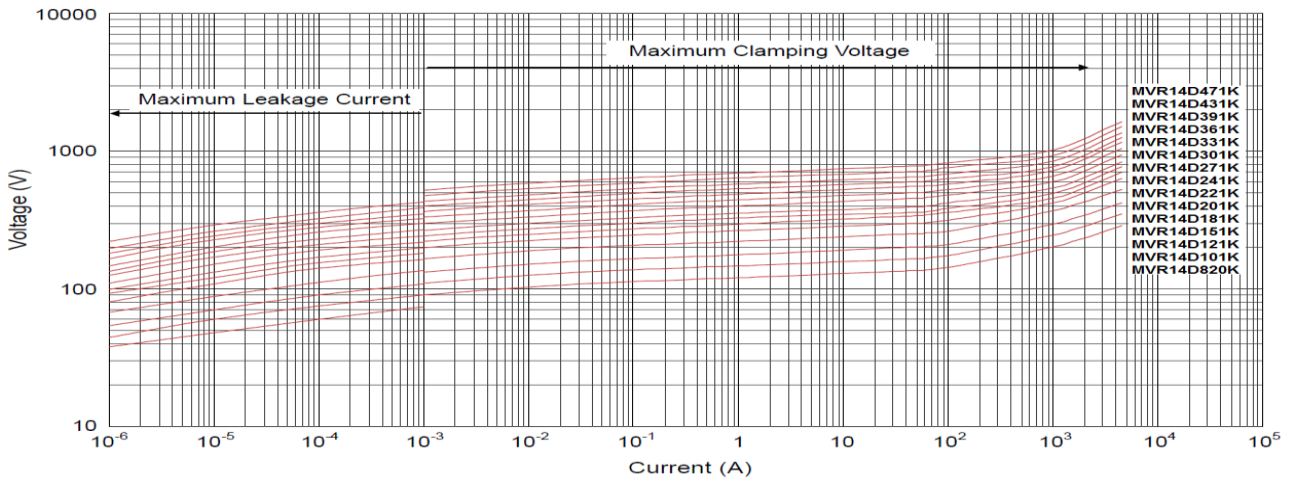
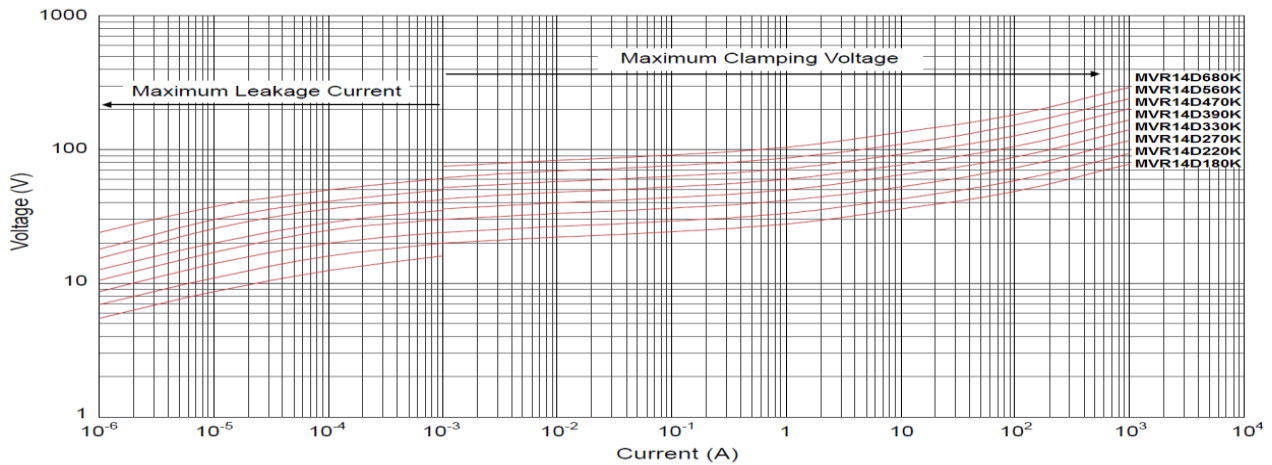
- The tolerance of varistor voltage between 18V and 27V is more than 10%.
- Varistor voltage ≥ 1200V, structure diagram is F type.
- Leakage Current (@83% of V1mA) : IR ≤ 50µA (180K~680K) ; IR ≤ 25µA (820K~182K)

SURGE CURRENT DERATING CURVES - MVR14D SERIES

[Back to Top](#)



LEAKAGE CURRENT & CLAMPING VOLTAGE CURVES – MVR14D SERIES



Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

MERITEK

ELECTRICAL CHARACTERISTICS - MVR20D SERIES

[Back to Top](#)

MVR20D Series	Varistor DC Voltage @1mA		Max. Allowable Voltage		Max. Clamping Voltage		Withstanding Surge Current (A)	Max. Energy (10/1Kµs) (J)	Rated Power (W)	Typical Cap. @1kHz (pF)	Dimension	
	V _{DC}	V _{AC}	V _{DC}	V _c	I _p	T _{max}					e ±0.8	
	(V)	(V _{rms})	(V)	(V)	(A)							
MVR20D180K	18(15~21.6)	11	14	36	20	2,000	0.2	11	0.2	28500	4.8	1.7
MVR20D220K	22(19.5~26)	14	18	43				14		18500	4.9	1.8
MVR20D270K	27(24~31)	17	22	53				16		13000	5	2.0
MVR20D330K	33(29.5~36.5)	20	26	65				23		11500	5.2	1.9
MVR20D390K	39(35~43)	25	31	77				26		8500	5.5	2.0
MVR20D470K	47(42~52)	30	38	93				30		7400	5.5	2.1
MVR20D560K	56(50~62)	35	45	110				41		6500	5.7	2.3
MVR20D680K	68(61~75)	40	56	135				46		5800	5.8	2.6
MVR20D820K	82(74~90)	50	65	135				38		4900	4.9	2.0
MVR20D101K	100(90~110)	60	85	165				45		4000	5.1	2.2
MVR20D121K	120(108~132)	75	100	200				55		3300	5.3	2.4
MVR20D151K	150(135~165)	95	125	250				70		2700	5.6	2.0
MVR20D181K	180(162~198)	115	150	300				85		2200	5	2.1
MVR20D201K	200(180~220)	130	170	340				95		2000	5.2	2.2
MVR20D221K	220(198~242)	140	180	360	100	1800	5.3	2.3				
MVR20D241K	240(216~264)	150	200	395	108	1650	5.4	2.4				
MVR20D271K	270(243~297)	175	225	455	127	1500	5.6	2.6				
MVR20D301K	300(270~330)	190	250	500	136	1300	5.7	2.7				
MVR20D331K	330(297~363)	210	275	550	150	1200	6	2.7				
MVR20D361K	360(324~396)	230	300	595	163	1100	6.2	2.9				
MVR20D391K	390(351~429)	250	320	650	180	1000	6.4	3.0				
MVR20D431K	430(387~473)	275	350	710	190	930	6.7	3.2				
MVR20D471k	470(423~517)	300	385	775	220	850	6.9	3.4				
MVR20D511K	510(459~561)	320	415	845	220	780	7	3.6				
MVR20D561K	560(504~616)	350	460	925	220	710	7.2	3.8				
MVR20D621K	620(558~682)	385	505	1025	220	650	7.5	4.1				
MVR20D681K	680(612~748)	420	560	1120	230	600	7.8	4.4				
MVR20D751K	750(675~825)	460	615	1240	255	530	8.2	4.5				
MVR20D781K	780(702~858)	485	640	1290	265	510	8.3	4.6				
MVR20D821K	820(738~902)	510	670	1355	282	500	8.5	4.8				
MVR20D911K	910(819~1001)	550	745	1500	310	440	9	5.2				
MVR20D102K	1000(900~1100)	625	825	1650	342	400	9.5	5.2				
MVR20D112K	1100(990~1210)	680	895	1815	383	360	10.1	5.6				
MVR20D122K	1200(1080~1320)	750	990	1980	408	350	10.7	6.0				
MVR20D142K	1400(1260~1540)	880	1140	2310	532	340	11.2	6.8				
MVR20D162K	1600(1440~1760)	1000	1280	2640	606	330	11.8	7.6				
MVR20D182K	1800(1620~1980)	1100	1465	2970	625	320	12.8	8.4				

Notes:

1. The tolerance of varistor voltage between 18V and 27V is more than 10%.
2. Varistor voltage ≥ 1200V, structure diagram is F type.
3. Leakage Current (@83% of V_{1mA}): IR ≤ 50µA (180K~680K); IR ≤ 25µA (820K~182K)

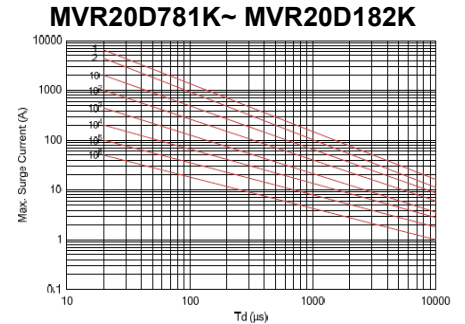
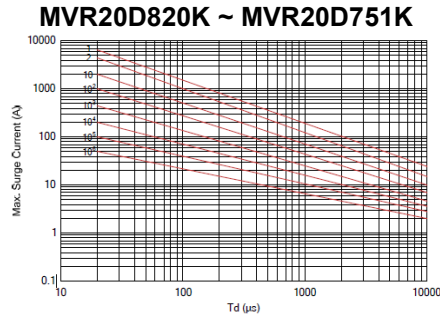
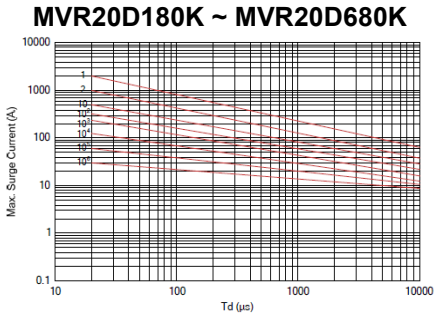
Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

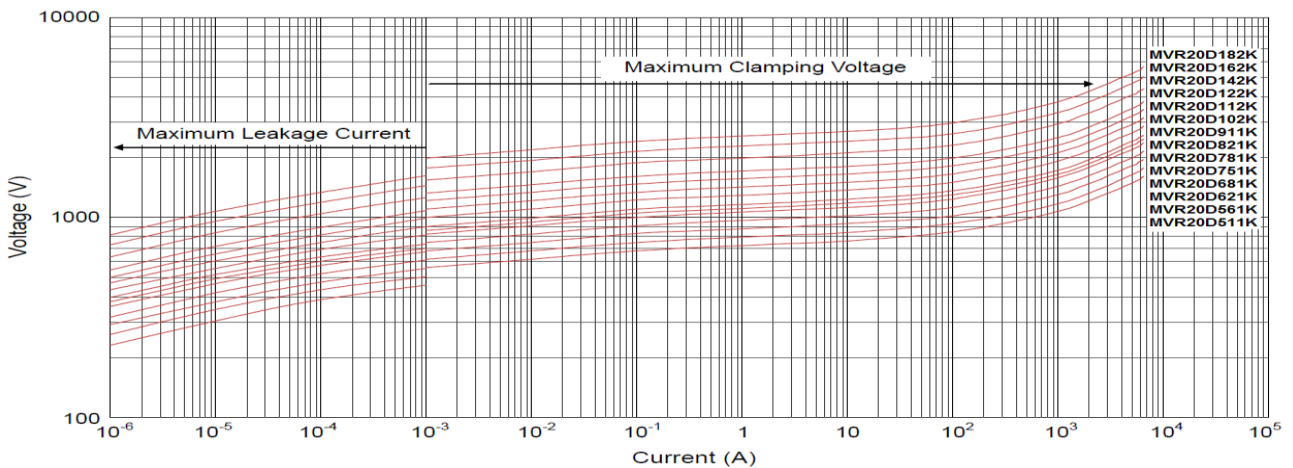
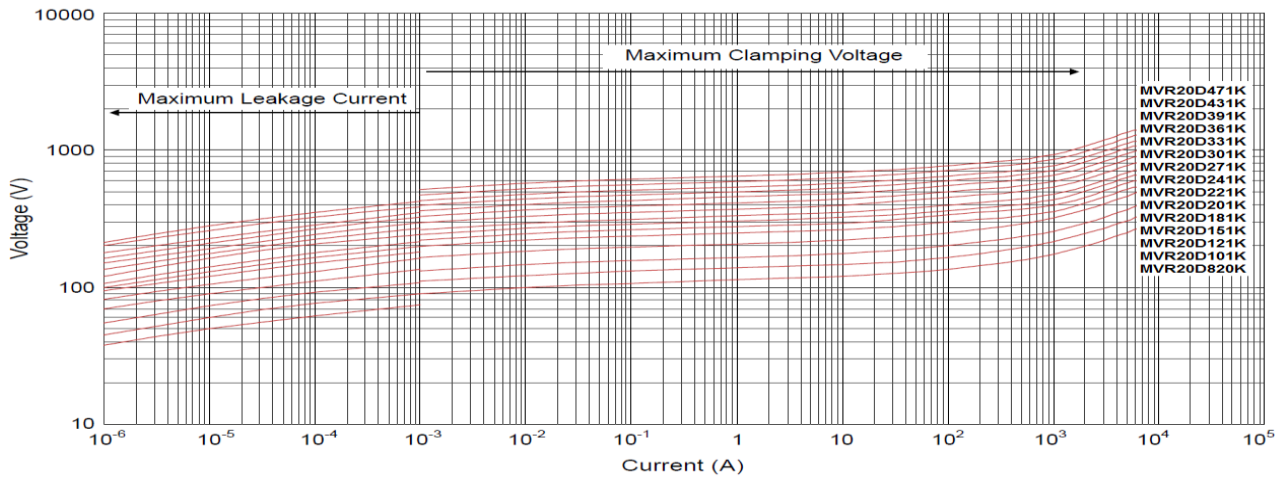
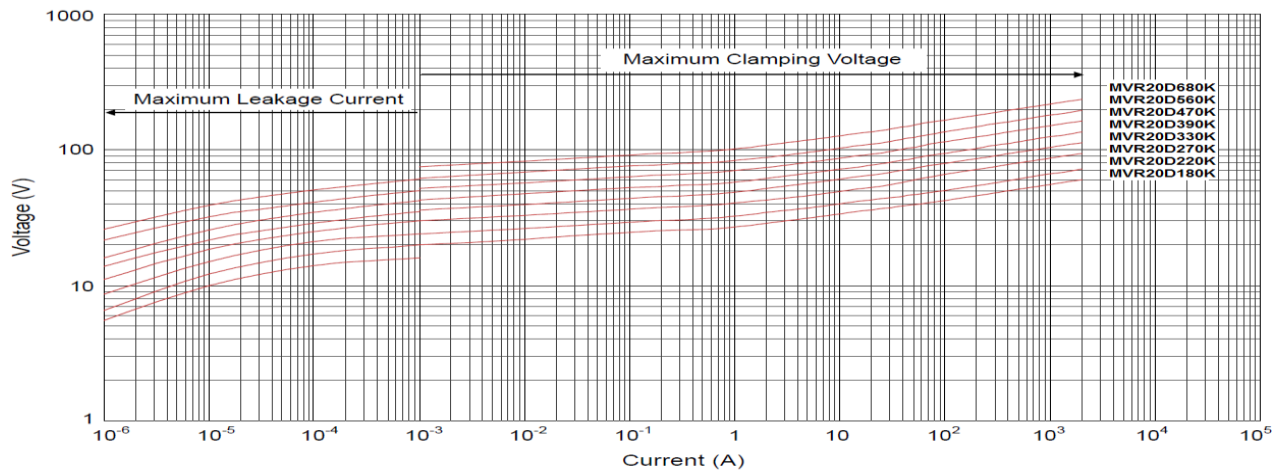
MERITEK

SURGE CURRENT DERATING CURVES - MVR20D SERIES

[Back to Top](#)



LEAKAGE CURRENT & CLAMPING VOLTAGE CURVES - MVR20D SERIES



Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

MERITEK

ELECTRICAL CHARACTERISTICS - MVR25D SERIES

[Back to Top](#)

MVR25D Series	Varistor DC Voltage @1mA		Max. Allowable Voltage		Max. Clamping Voltage		Withstanding Surge Current (A)	Max. Energy (10/1Kμs) (J)	Rated Power (W)	Typical Cap. @1kHz (pF)	Dimension	
	V _{DC}	V _{AC}	V _{DC}	V _c	I _p	T _{max}					e ±0.8	
	(V)	(V _{rms})	(V)	(V)	(A)							
MVR25D180K	18(15~21.6)	11	14	36	30	4,500	20	0.25	45000	5	1.7	
MVR25D220K	22(19.5~26)	14	18	43			25		29000	5.1	1.8	
MVR25D270K	27(24~31)	17	22	53			30		26500	5.2	2.0	
MVR25D330K	33(29.5~36.5)	20	26	65			35		18000	5.4	1.9	
MVR25D390K	39(35~43)	25	31	77			40		13500	5.7	2.0	
MVR25D470K	47(42~52)	30	38	93			50		11500	5.7	2.1	
MVR25D560K	56(50~62)	35	45	110			60		10500	5.9	2.3	
MVR25D680K	68(61~75)	40	56	135			70		9050	6	2.6	
MVR25D820K	82(74~90)	50	65	135			80		7700	5.1	2.0	
MVR25D101K	100(90~110)	60	85	165			100		6300	5.3	2.2	
MVR25D121K	120(108~132)	75	100	200			120		5200	5.5	2.4	
MVR25D151K	150(135~165)	95	125	250			160		4300	5.8	2.0	
MVR25D181K	180(162~198)	115	150	300			175		3500	5.2	2.1	
MVR25D201K	200(180~220)	130	170	340			190		3200	5.4	2.2	
MVR25D221K	220(198~242)	140	180	360			200		2900	5.5	2.3	
MVR25D241K	240(216~264)	150	200	395	220	2650	5.6	2.4				
MVR25D271K	270(243~297)	175	225	455	255	2400	5.8	2.6				
MVR25D301K	300(270~330)	190	250	500	275	2100	5.9	2.7				
MVR25D331K	330(297~363)	210	275	550	300	1900	6.2	2.7				
MVR25D361K	360(324~396)	230	300	595	330	1750	6.4	2.9				
MVR25D391K	390(351~429)	250	320	650	360	1600	6.6	3.0				
MVR25D431K	430(387~473)	275	350	710	380	1500	6.9	3.2				
MVR25D471k	470(423~517)	300	385	775	400	1400	7.1	3.4				
MVR25D511K	510(459~561)	320	415	845	420	1250	7.2	3.6				
MVR25D561K	560(504~616)	350	460	925	440	1150	7.4	3.8				
MVR25D621K	620(558~682)	385	505	1025	450	1050	7.7	4.1				
MVR25D681K	680(612~748)	420	560	1120	460	950	8	4.4				
MVR25D751K	750(675~825)	460	615	1240	510	850	8.4	4.5				
MVR25D781K	780(702~858)	485	640	1290	530	850	8.5	4.6				
MVR25D821K	820(738~902)	510	670	1355	570	800	8.7	4.8				
MVR25D911K	910(819~1001)	550	745	1500	620	700	9.2	5.2				
MVR25D102K	1000(900~1100)	625	825	1650	685	650	9.7	5.2				
MVR25D112K	1100(990~1210)	680	895	1815	720	600	10.3	5.6				
MVR25D122K	1200(1080~1320)	750	990	1980	792	550	10.9	6.0				
MVR25D142K	1400(1260~1540)	880	1140	2310	850	500	12.6	6.8				
MVR25D162K	1600(1440~1760)	1000	1280	2640	970	450	13.2	7.6				
MVR25D182K	1800(1620~1980)	1100	1465	2970	1092	400	14.5	8.4				

Notes:

- The tolerance of varistor voltage between 18V and 27V is more than 10%.
- Leakage Current (@83% of V_{1mA}) : IR≤50μA (180K~680K) ; IR≤40μA (820K~182K)

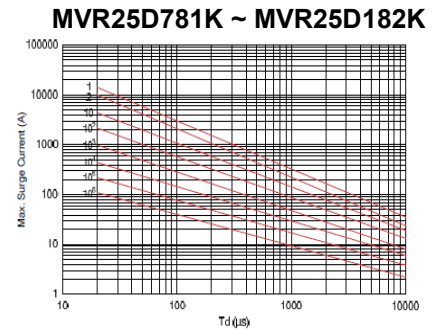
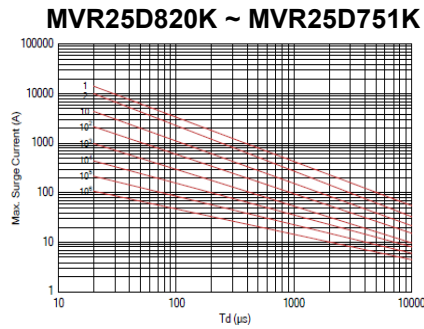
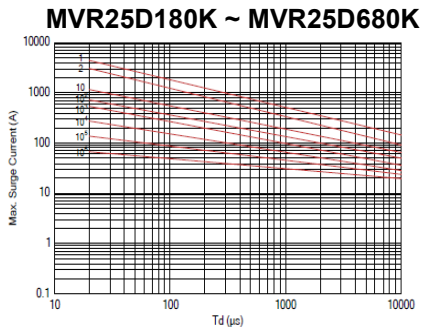
Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

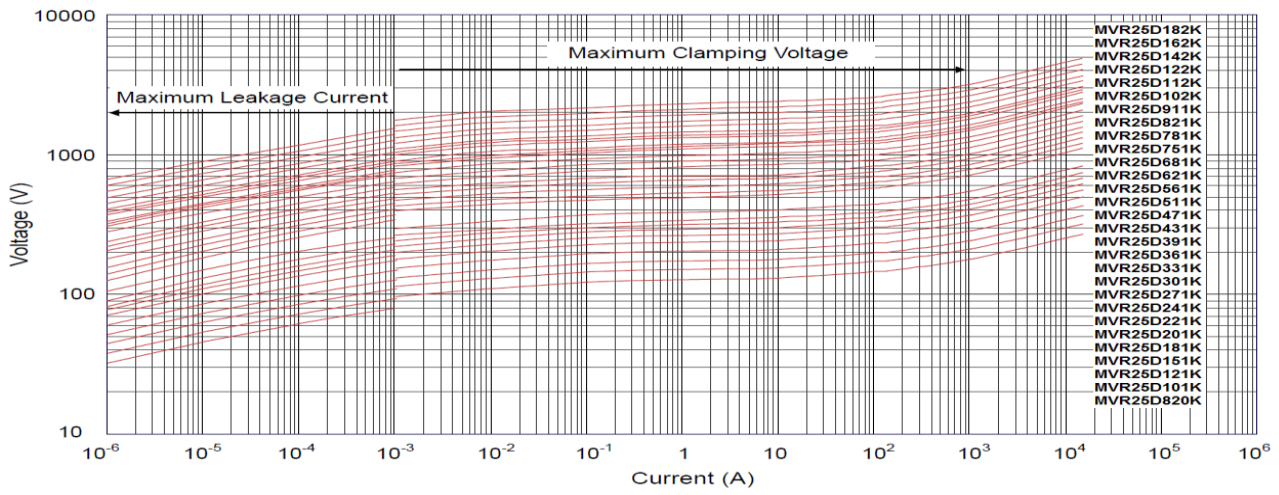
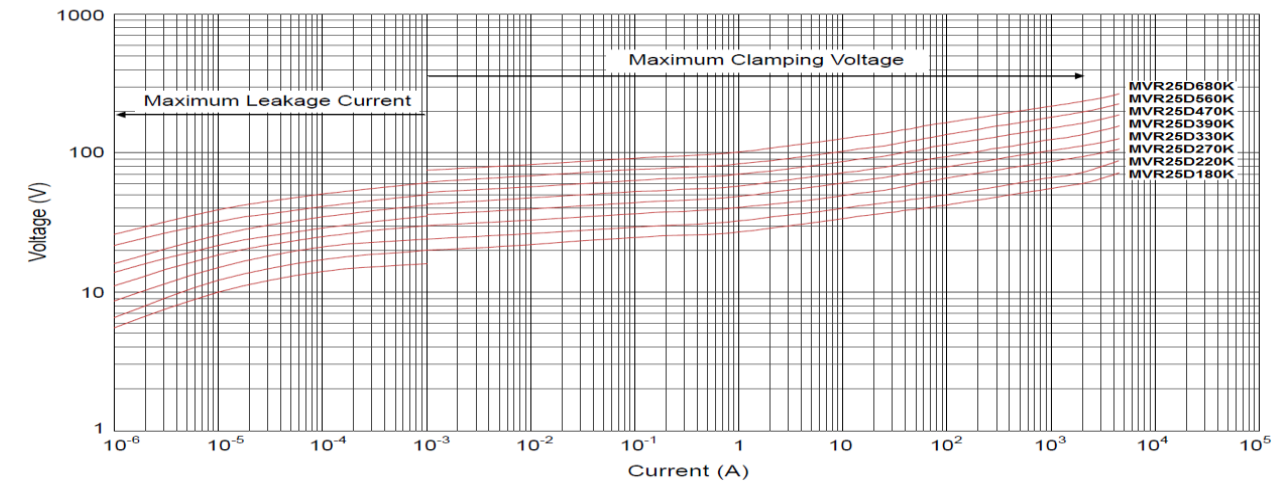
MERITEK

SURGE CURRENT DERATING CURVES – MVR25D SERIES

[Back to Top](#)



LEAKAGE CURRENT & CLAMPING VOLTAGE CURVES - MVR25D SERIES



Metal Oxide Varistor Leaded Disk Type, 5~25mm

MVR Series

MERITEK

RELIABILITY TEST CONDITIONS AND REQUIREMENTS

[Back To Top](#)

Item	Standard	Test Conditions / Method	Specifications															
Strength of Terminals Tensile	IEC 60068-2-21	Gradually apply the specified force and keep the unit fixed for 10±1s.	ΔV _{1mA} /V _{1mA} ≤5% No visible damage															
		<table border="1"> <thead> <tr> <th>Terminal diameter (mm)</th> <th>Force (Kg)</th> </tr> </thead> <tbody> <tr> <td>0.5<d≤0.8</td> <td>1.0</td> </tr> <tr> <td>0.8<d≤1.25</td> <td>2.0</td> </tr> <tr> <td>1.25<d</td> <td>4.0</td> </tr> </tbody> </table>		Terminal diameter (mm)	Force (Kg)	0.5<d≤0.8	1.0	0.8<d≤1.25	2.0	1.25<d	4.0							
Terminal diameter (mm)	Force (Kg)																	
0.5<d≤0.8	1.0																	
0.8<d≤1.25	2.0																	
1.25<d	4.0																	
Strength of Terminals Bending	IEC 60068-2-21	Hold specimen and apply the force specified below to each lead. Bend the specimen to 90°, and then return to the original position. Repeat the procedure in the opposite direction.	ΔV _{1mA} /V _{1mA} ≤5% No visible damage															
		<table border="1"> <thead> <tr> <th>Terminal diameter (mm)</th> <th>Force (Kg)</th> </tr> </thead> <tbody> <tr> <td>0.5<d≤0.8</td> <td>0.5</td> </tr> <tr> <td>0.8<d≤1.25</td> <td>1.0</td> </tr> <tr> <td>1.25<d</td> <td>2.0</td> </tr> </tbody> </table>		Terminal diameter (mm)	Force (Kg)	0.5<d≤0.8	0.5	0.8<d≤1.25	1.0	1.25<d	2.0							
Terminal diameter (mm)	Force (Kg)																	
0.5<d≤0.8	0.5																	
0.8<d≤1.25	1.0																	
1.25<d	2.0																	
Vibration	IEC 60068-2-6	Frequency range: 10 ~ 55 Hz, Amplitude: 0.75mm or 98 m/s ² Direction: 3 mutually perpendicular directions, 2 hrs. each.	ΔV _{1mA} /V _{1mA} ≤5% No visible damage															
Solderability	IEC 60068-2-20	Temperature: 245±5°C, Duration: 2±0.5 sec	At least 95% of Coverage															
Resistance to Soldering Heat	IEC 60068-2-20	Temperature: 260±5°C, Duration: 10±1 sec	ΔV _{1mA} /V _{1mA} ≤5% No visible damage															
High Temperature Storage	IEC 60068-2-2	Temperature: 125±2°C, Duration: 1000 hrs.																
Low Temperature Storage	IEC 60068-2-1	Temperature: -40±2°C, Duration: 1000 hrs.																
Damp Heat, Steady State	IEC 60068-2-78	Temperature: 40±2°C, 90~95%RH, Duration: 1000 hrs at max. allowable voltage	ΔV _{1mA} /V _{1mA} ≤10% No visible damage															
Rapid Change of Temperature	IEC 60068-2-14	The conditions shown below shall be repeated 5 cycles.	ΔV _{1mA} /V _{1mA} ≤5% No visible damage															
		<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Period (minutes)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3</td> <td>30±3</td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>5±3</td> </tr> <tr> <td>3</td> <td>125±3</td> <td>30±3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>5±3</td> </tr> </tbody> </table>		Step	Temperature (°C)	Period (minutes)	1	-40±3	30±3	2	Room temperature	5±3	3	125±3	30±3	4	Room temperature	5±3
		Step		Temperature (°C)	Period (minutes)													
		1		-40±3	30±3													
		2		Room temperature	5±3													
3	125±3	30±3																
4	Room temperature	5±3																
High Temperature Load Life	MIL-STD-202 Method 108	Temperature: 105±2°C Duration: 1000 hrs. at Max allowable AC Voltage	ΔV _{1mA} /V _{1mA} ≤10% No visible damage															
Surge Life, 8/20μs	IEC 61051-1	8/20μs waveform, 10 surge currents, unipolar, interval 30secs, amplitude corresponding to max. surge current derating curves for 20μs	ΔV _{1mA} /V _{1mA} ≤10% No visible damage															
Surge Life, 10/1000μs	IEC 61051-1	10/1000μs waveform, 10 surge currents, unipolar, interval 2mins, amplitude corresponding to max. surge current derating curves for 1000μs	ΔV _{1mA} /V _{1mA} ≤10% No visible damage															
Voltage Proof	IEC 61051-1	Metal balls method, 2500 V _{AC} 1 min	No visible damage															
Varistor Voltage Temperature Coefficient	Specification Standard	$\frac{V_{1mA} \text{ at } 85^{\circ}\text{C} - V_{1mA} \text{ at } 25^{\circ}\text{C}}{V_{1mA} \text{ at } 25^{\circ}\text{C}} \times \frac{1}{80} \times 100(\%/^{\circ}\text{C})$ $\frac{V_{1mA} \text{ at } -40^{\circ}\text{C} - V_{1mA} \text{ at } 25^{\circ}\text{C}}{V_{1mA} \text{ at } 25^{\circ}\text{C}} \times \frac{1}{65} \times 100(\%/^{\circ}\text{C})$	-0.05 ≤ TC ≤ 0.05(%/°C)															

Metal Oxide Varistor Leaded Disk Type, 5~25mm

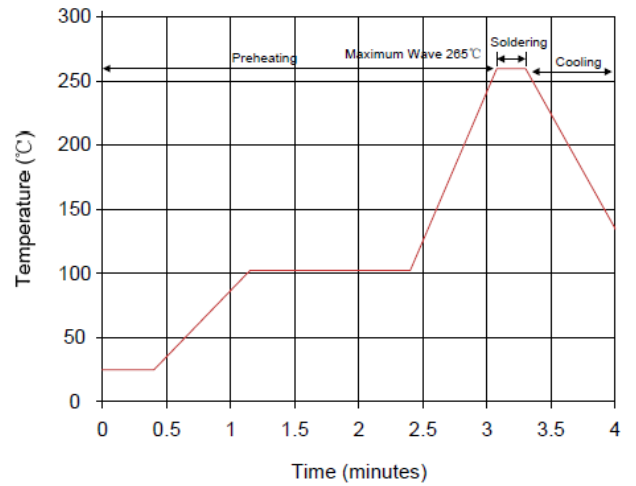
MVR Series

MERITEK

SOLDERING RECOMMENDATION

Wave Soldering Process	Condition
Peak Temperature	265°C
Dipping Time	10 seconds (max)
Soldering	1 Time

Soldering Iron Process	Condition
Temperature of Soldering Iron-tip	360°C (max.)
Soldering Time	3 sec. (max.)
Distance From Varistor	2 mm (min.)



*Specifications subject to change without notice.