Features

- High voltage rating
- High current rating
- Bidirectional
- Surge protection
- Fast response time
- RoHS compliant*
- Agency listing: c UL us

Applications

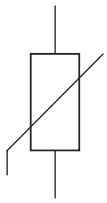
- Power supplies
- Power systems
- Line voltage
- Telecom systems
- White goods / appliances

MOV-10DxxxK Series - Metal Oxide Varistor

General Information

The MOV-10DxxxK Series of 10 mm radial leaded varistor devices protects against overvoltage transients such as lightning, power contact and power induction. The metal oxide varistors offer a choice of varistor voltages from 18 V to 820 V and V_{rms} voltages from 11 V to 510 V.

The devices have a high current handling, high energy absorption capability and fast response times to protect against transient faults up to rated limits.



Industry Standard Compliance

Standard	UL 1449
File Number	E313168

Standard	ITU-T K.20, K.21, K.45
MOV-10D201K MOV-10D361K MOV-10D391K MOV-10D431K	Will pass 600 V rms, 600 ohm, 1 A, 0.2 s, 5 cycles, every 1 minute condition.

Absolute Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Temperature	T_{OPR}	-40	25	+105	˚C
Storage Temperature	T_{STG}	-40	25	+125	˚C
Rated Wattage	P_W			0.40	Watt
Varistor Voltage Temperature Coefficient	V_{TC}	0		0.05	% / ˚C
Response Time	T_r		10	25	ns
Varistor Voltage Tolerance	V_{tol}	-10		10	%

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Bourns Part No.	Max. Continuous Voltage (V)		Voltage @ 1 mA DC (V)			Voltage @ Class Current (8/20 µs)		Max. Peak Current (8/20 µs)	Max. Energy (J)	Typ. Cap. (pF)
	r.m.s.	d.c.	Min.	Nom.	Max.	Class Current (A)	Max. Clamping Voltage (V)	One Time	8/20 µs	1 kHz
MOV-10D180K	11	14	16	18	20	5	36	500	2.1	8160
MOV-10D220K	14	18	20	22	24	5	43	500	2.5	6000
MOV-10D270K	17	22	24	27	30	5	53	500	3.0	5280
MOV-10D330K	20	26	30	33	36	5	65	500	4.0	4800
MOV-10D390K	25	31	35	39	43	5	77	500	4.6	3840
MOV-10D470K	30	38	42	47	52	5	93	500	5.5	3600
MOV-10D560K	35	45	50	56	62	5	110	500	7.0	2640
MOV-10D680K	40	56	61	68	75	5	135	500	8.2	1920
MOV-10D820K	50	65	74	82	90	25	135	2500	12	1440
MOV-10D101K	60	85	90	100	110	25	165	2500	15	1200
MOV-10D121K	75	100	108	120	132	25	200	2500	18	996
MOV-10D151K	95	125	135	150	165	25	250	2500	22	804
MOV-10D181K	115	150	162	180	198	25	300	2500	27	672
MOV-10D201K	130	170	185	200	225	25	340	2500	30	600
MOV-10D221K	140	180	198	220	242	25	360	2500	32	540
MOV-10D241K	150	200	216	240	264	25	395	2500	35	504
MOV-10D271K	175	225	243	270	297	25	455	2500	40	444
MOV-10D301K	190	250	270	300	330	25	500	2500	40	396
MOV-10D331K	210	275	297	330	363	25	550	2500	43	360
MOV-10D361K	230	300	324	360	396	25	595	2500	47	336
MOV-10D391K	250	320	351	390	429	25	650	2500	60	312
MOV-10D431K	275	350	387	430	473	25	710	2500	65	276
MOV-10D471K	300	385	423	470	517	25	775	2500	70	252
MOV-10D511K	320	415	459	510	561	25	845	2500	70	240
MOV-10D561K	350	460	504	560	616	25	925	2500	70	216
MOV-10D621K	385	505	558	620	682	25	1025	2500	70	192
MOV-10D681K	420	560	612	680	748	25	1120	2500	70	180
MOV-10D751K	460	615	675	750	825	25	1240	2500	75	156
MOV-10D781K	485	640	702	780	858	25	1290	2500	80	156
MOV-10D821K	510	670	738	820	902	25	1355	2500	85	132

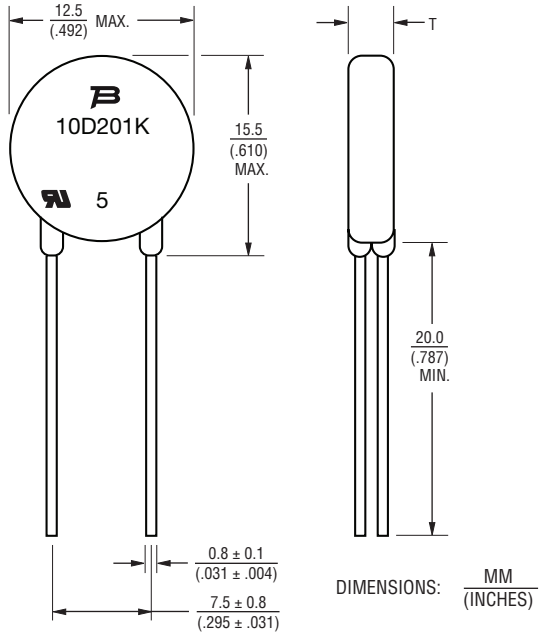
*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

MOV-10DxxxK Series - Metal Oxide Varistor

BOURNS®

Product Dimensions

This is an RoHS compliant molded radial package with 100 % Sn plating on the terminations.



Bourns Part Number	Dim. T (Max.)
MOV-10D180K	3.8 (.150)
MOV-10D220K	3.9 (.154)
MOV-10D270K	4.2 (.165)
MOV-10D330K	3.8 (.150)
MOV-10D390K	4.0 (.157)
MOV-10D470K	4.2 (.165)
MOV-10D560K	4.3 (.169)
MOV-10D680K	4.4 (.173)
MOV-10D820K	3.8 (.150)
MOV-10D101K	4.0 (.157)
MOV-10D121K	4.2 (.165)
MOV-10D151K	4.4 (.173)
MOV-10D181K	3.6 (.142)
MOV-10D201K	3.8 (.150)
MOV-10D221K	3.9 (.154)

Bourns Part Number	Dim. T (Max.)
MOV-10D241K	4.0 (.157)
MOV-10D271K	4.2 (.165)
MOV-10D301K	4.4 (.173)
MOV-10D331K	4.6 (.181)
MOV-10D361K	4.8 (.189)
MOV-10D391K	5.0 (.197)
MOV-10D431K	5.2 (.205)
MOV-10D471K	5.4 (.213)
MOV-10D511K	5.5 (.217)
MOV-10D561K	5.9 (.232)
MOV-10D621K	6.2 (.244)
MOV-10D681K	6.4 (.252)
MOV-10D751K	6.6 (.260)
MOV-10D781K	6.8 (.268)
MOV-10D821K	7.2 (.283)

Typical Part Marking

Bourns Part Number	Bourns Part Marking
MOV-10D180K	10D180K
MOV-10D220K	10D220K
MOV-10D270K	10D270K
MOV-10D330K	10D330K
MOV-10D390K	10D390K
MOV-10D470K	10D470K
MOV-10D560K	10D560K
MOV-10D680K	10D680K
MOV-10D820K	10D820K
MOV-10D101K	10D101K
MOV-10D121K	10D121K
MOV-10D151K	10D151K
MOV-10D181K	10D181K
MOV-10D201K	10D201K
MOV-10D221K	10D221K
MOV-10D241K	10D241K
MOV-10D271K	10D271K
MOV-10D301K	10D301K
MOV-10D331K	10D331K
MOV-10D361K	10D361K
MOV-10D391K	10D391K
MOV-10D431K	10D431K
MOV-10D471K	10D471K
MOV-10D511K	10D511K
MOV-10D561K	10D561K
MOV-10D621K	10D621K
MOV-10D681K	10D681K
MOV-10D751K	10D751K
MOV-10D781K	10D781K
MOV-10D821K	10D821K

NOTE: The "5" marking on MOV products is for traceability of production assembly for quality assurance compliance.

How to Order

MOV - 10D nn (n) K (TR)

Model Designator
MOV = Metal Oxide Varistor

Disc Diameter
10D = 10 mm

Nominal Varistor Voltage
See Electrical Characteristics Table

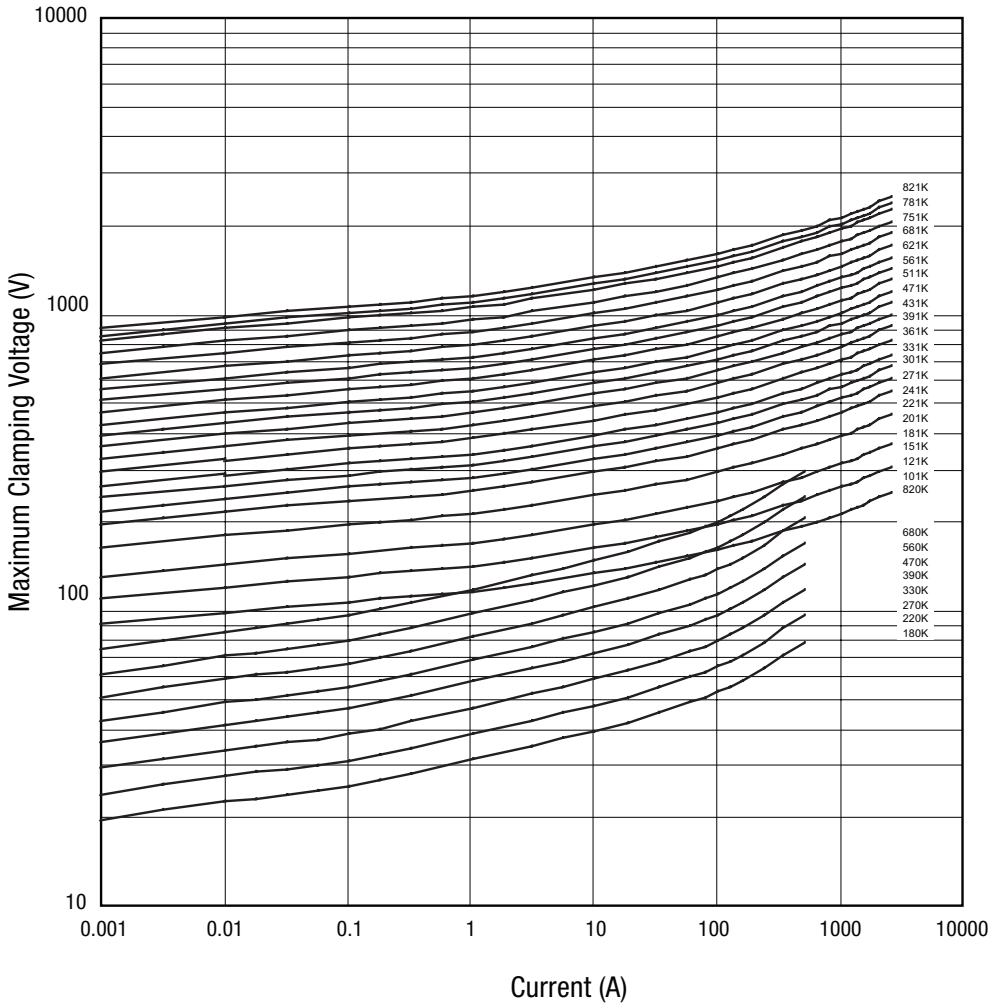
Multiplier of Voltage Digits
0 = No multiplier
1 = nn * 10^1

Varistor Voltage Tolerance
K = 10 %

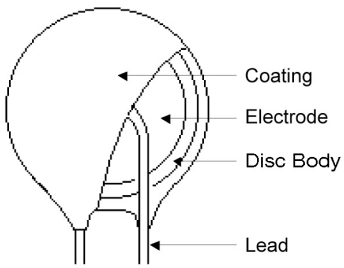
Packaging
Blank = Bulk
TR = Tape & Reel

Examples: MOV-10D270K = 27 V, Bulk Pack
MOV-10D331KTR = 330 V, Tape & Reel

Performance Graphs



Internal Construction

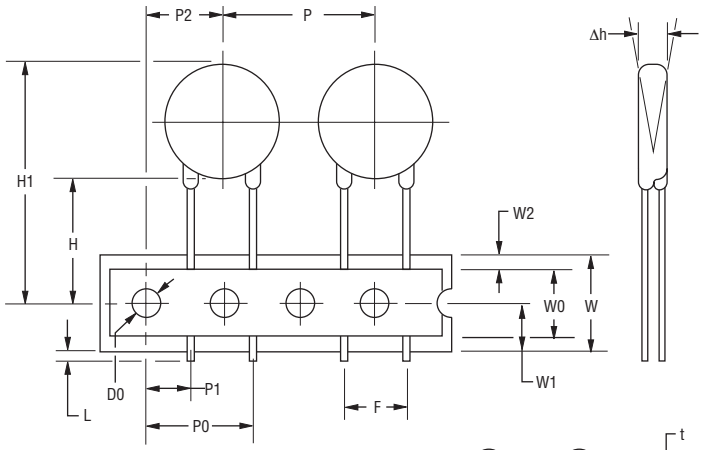


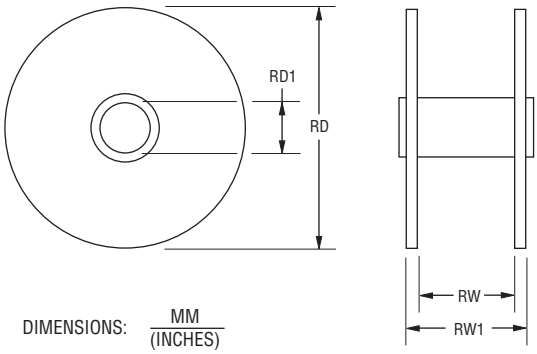
Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM).....6

Packaging Information

TAPE & REEL

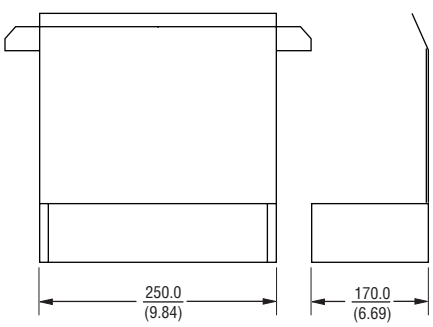




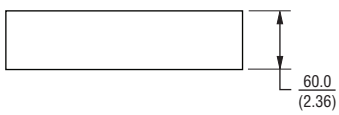
DIMENSIONS: MM / (INCHES)

Item	Symbol	10 mm Disc
Reel Outside Diameter	RD	355 (13.98)
Reel Inner Diameter	RD1	30 (1.181)
Tape Width	RW	55 (2.16)
Reel Width	RW1	63 (2.48) max.
Pitch of Component	P	25.4 ± 0.7 (1.00 ± 0.03)
Feed Hole Pitch	P0	12.7 ± 1.0 (0.50 ± 0.04)
Feed Hole Center to Pitch	P1	8.95 ± 0.7 (0.352 ± 0.03)
Feed Hole Center to Component Center	P2	12.7 ± 1.0 (0.50 ± 0.04)
Lead to Lead Distance	F	7.50 ± 0.8 (0.30 ± 0.03)
Component Alignment	Δh	2.0 (0.079)
Tape Width	W	18.0 ± 0.5 (0.71 ± 0.02)
Hole Down Tape Width	W0	12.0 ± 0.8 (0.47 ± 0.03)
Hole Position	W1	9.0 ± 0.5 (0.35 ± 0.02)
Hole Down Tape Position	W2	3.0 (0.12) max.
Height From Center to Component Base	H	19.0 ± 1.0 (0.75 ± 0.04)
Seating Plane Height	H0	16.0 ± 1.0 (0.63 ± 0.04)
Component Height	H1	36.0 (1.42) max.
Crimp Length	C	2.60 (0.10) typ.
Feed Hole Diameter	D0	4.0 ± 0.2 (0.16 ± 0.08)
Total Tape Thickness	t	0.6 ± 0.3 (0.02 ± 0.01)
Length of Clippped Height	L	1.0 (0.04) max.
Quantity per Reel (10D180K – 10D361K)	-	1000
Quantity per Reel (10D391K – 10D821K)	-	500

BULK



QUANTITY:
MOV-10D180K – 10D561K = 1000 PCS. PER BOX
MOV-10D621K – 10D821K = 800 PCS. PER BOX



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