THE DATASHEET OF

MOV-14D331K

BOURNS®

Features

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

Applications

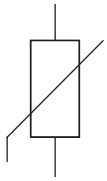
- Power supplies
- Power systems
- Line voltage
- Telecom systems
- White goods / appliances

MOV-14DxxxK Series - Metal Oxide Varistor

General Information

The MOV-14DxxxK Series of 14 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 1800 V and V_{rms} voltages from 11 V to 1100 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

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			0.60	Watt
Varistor Voltage Temperature Coefficient	V_{TC}	0	0.1	0.05	% / ˚C
Response Time	T_r		10	25	ns
Varistor Voltage Tolerance	V_{tol}	-10	0	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-14D180K	11	14	16	18	20	10	36	1000	4.0	14400
MOV-14D220K	14	18	20	22	24	10	43	1000	5.0	12000
MOV-14D270K	17	22	24	27	30	10	53	1000	6.0	9840
MOV-14D330K	20	26	30	33	36	10	65	1000	7.5	8640
MOV-14D390K	25	31	35	39	43	10	77	1000	8.6	7680
MOV-14D470K	30	38	42	47	52	10	93	1000	10.0	7200
MOV-14D560K	35	45	50	56	62	10	110	1000	11.0	6960
MOV-14D680K	40	56	61	68	75	10	135	1000	14.0	6240
MOV-14D820K	50	65	74	82	90	50	135	4500	22.0	3000
MOV-14D101K	60	85	90	100	110	50	165	4500	28.0	2400
MOV-14D121K	75	100	108	120	132	50	200	4500	32.0	2040
MOV-14D151K	95	125	135	150	165	50	250	4500	40.0	1560
MOV-14D181K	115	150	162	180	198	50	300	4500	50.0	1320
MOV-14D201K	130	170	185	200	225	50	340	4500	57.0	1200
MOV-14D221K	140	180	198	220	242	50	360	4500	60.0	1080
MOV-14D241K	150	200	216	240	264	50	395	4500	63.0	996
MOV-14D271K	175	225	243	270	297	50	455	4500	70.0	888
MOV-14D301K	190	250	270	300	330	50	500	4500	77.0	804
MOV-14D331K	210	275	297	330	363	50	550	4500	85.0	732
MOV-14D361K	230	300	324	360	396	50	595	4500	93.0	672
MOV-14D391K	250	320	351	390	429	50	650	4500	100.0	612
MOV-14D431K	275	350	387	430	473	50	710	4500	115.0	552
MOV-14D471K	300	385	423	470	517	50	775	4500	125.0	516
MOV-14D511K	320	415	459	510	561	50	845	4500	125.0	468
MOV-14D561K	350	460	504	560	616	50	925	4500	125.0	432
MOV-14D621K	385	505	558	620	682	50	1025	4500	125.0	384
MOV-14D681K	420	560	612	680	748	50	1120	4500	130.0	360
MOV-14D751K	460	615	675	750	825	50	1240	4500	143.0	324
MOV-14D781K	485	640	702	780	858	50	1290	4500	148.0	312
MOV-14D821K	510	670	738	820	902	50	1355	4500	157.0	300
MOV-14D911K	550	745	819	910	1001	50	1500	4500	175.0	288
MOV-14D102K	625	825	900	1000	1100	50	1650	4500	190.0	264
MOV-14D112K	680	895	990	1100	1210	50	1815	4500	213.0	240
MOV-14D152K	940	1200	1350	1500	1650	50	2475	4500	329.0	180
MOV-14D182K	1100	1465	1620	1800	1980	50	2970	4500	335.0	156

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
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MOV-14DxxxK Series - Metal Oxide Varistor

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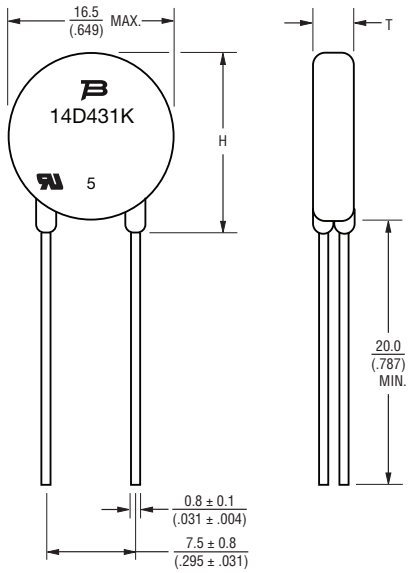
Product Dimensions

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



DIMENSIONS: MM / (INCHES)

Part Number	Dim. H (Max.)	Dim. T (Max.)
MOV-14D180K	20.0 (.787)	3.8 (.150)
MOV-14D220K	20.0 (.787)	3.9 (.154)
MOV-14D270K	20.0 (.787)	4.2 (.165)
MOV-14D330K	20.0 (.787)	3.8 (.150)
MOV-14D390K	20.0 (.787)	4.0 (.157)
MOV-14D470K	20.0 (.787)	4.2 (.165)
MOV-14D560K	20.0 (.787)	4.3 (.169)
MOV-14D680K	20.0 (.787)	4.4 (.173)
MOV-14D820K	20.0 (.787)	3.8 (.150)
MOV-14D101K	20.0 (.787)	4.0 (.157)
MOV-14D121K	20.0 (.787)	4.2 (.165)
MOV-14D151K	20.0 (.787)	4.4 (.173)
MOV-14D181K	20.0 (.787)	3.6 (.142)
MOV-14D201K	20.0 (.787)	3.8 (.150)
MOV-14D221K	20.0 (.787)	3.9 (.154)
MOV-14D241K	20.0 (.787)	4.0 (.157)
MOV-14D271K	20.0 (.787)	4.2 (.165)
MOV-14D301K	20.0 (.787)	4.4 (.173)

Part Number	Dim. H (Max.)	Dim. T (Max.)
MOV-14D331K	20.0 (.787)	4.6 (.181)
MOV-14D361K	20.0 (.787)	4.8 (.189)
MOV-14D391K	20.0 (.787)	5.0 (.197)
MOV-14D431K	20.0 (.787)	5.2 (.205)
MOV-14D471K	20.0 (.787)	5.4 (.213)
MOV-14D511K	20.0 (.787)	5.5 (.217)
MOV-14D561K	22.0 (.866)	6.0 (.236)
MOV-14D621K	22.0 (.866)	6.4 (.252)
MOV-14D681K	22.0 (.866)	6.5 (.256)
MOV-14D751K	22.0 (.866)	6.7 (.264)
MOV-14D781K	22.0 (.866)	6.9 (.272)
MOV-14D821K	22.0 (.866)	7.3 (.287)
MOV-14D911K*	22.0 (.866)	7.7 (.303)
MOV-14D102K*	22.0 (.866)	8.2 (.323)
MOV-14D112K*	22.0 (.866)	8.7 (.343)
MOV-14D152K*	22.0 (.866)	9.7 (.382)
MOV-14D182K*	22.0 (.866)	11.7 (.461)

* Not available in Tape & Reel packaging.

How to Order

MOV - 14D nn (n) K (TR)

Model Designator
MOV = Metal Oxide Varistor

Disc Diameter
14D = 14 mm

Nominal Varistor Voltage
See Electrical Characteristics Table

Multiplier of Voltage Digits
0 = No multiplier
1 = nn * 10^1
2 = nn * 10^2

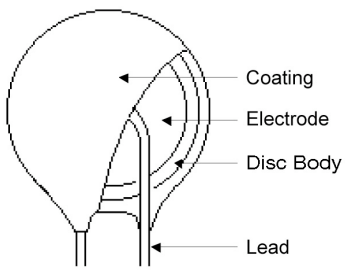
Varistor Voltage Tolerance
K = 10 %

Packaging
Blank = Bulk
TR = Tape & Reel*

Examples: MOV-14D270K = 27 V, Bulk Pack
MOV-14D331KTR = 330 V, Tape & Reel

* Models MOV-14D911K, 102K, 112K, 152K and 182K are not available in Tape & Reel packaging.

Internal Construction



Environmental Specifications

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

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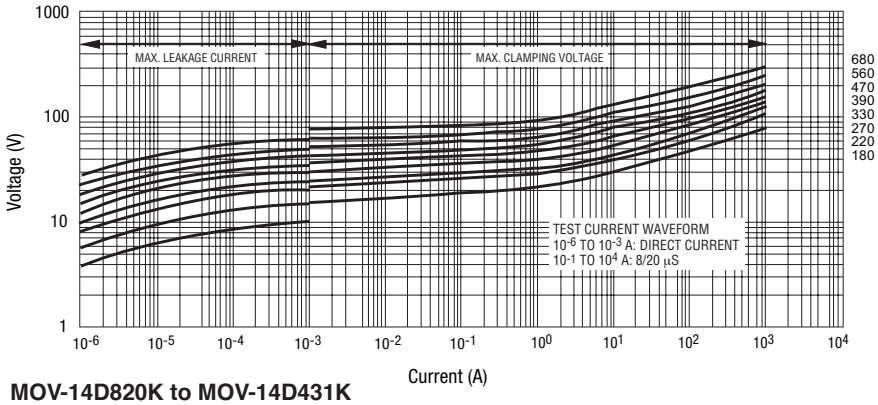
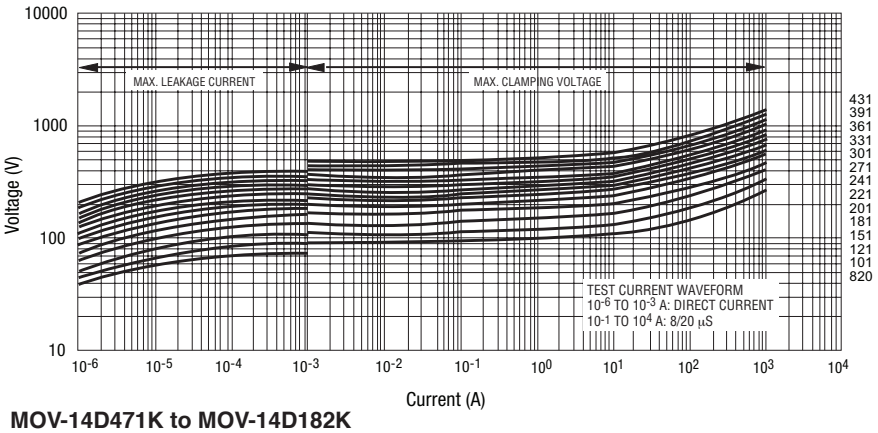
Performance Graphs

V-I Characteristics

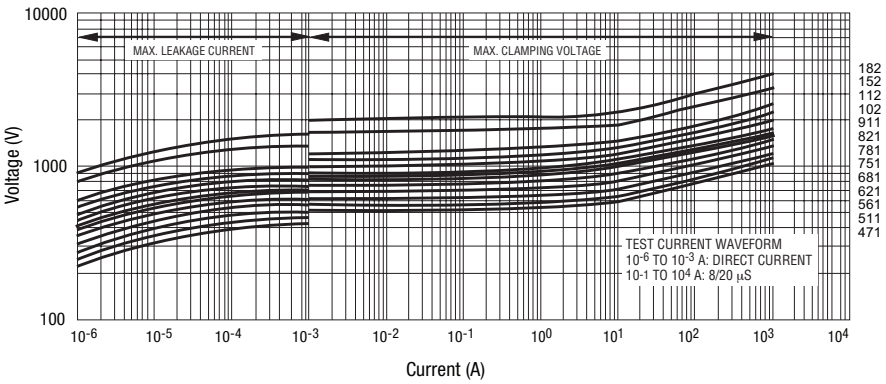
MOV-14D180K to MOV-14D680K



MOV-14D820K to MOV-14D431K



MOV-14D471K to MOV-14D182K



Typical Part Marking

Bourns Part Number	Bourns Part Marking
MOV-14D180K	14D180K
MOV-14D220K	14D220K
MOV-14D270K	14D270K
MOV-14D330K	14D330K
MOV-14D390K	14D390K
MOV-14D470K	14D470K
MOV-14D560K	14D560K
MOV-14D680K	14D680K
MOV-14D820K	14D820K
MOV-14D101K	14D101K
MOV-14D121K	14D121K
MOV-14D151K	14D151K
MOV-14D181K	14D181K
MOV-14D201K	14D201K
MOV-14D221K	14D221K
MOV-14D241K	14D241K
MOV-14D271K	14D271K
MOV-14D301K	14D301K
MOV-14D331K	14D331K
MOV-14D361K	14D361K
MOV-14D391K	14D391K
MOV-14D431K	14D431K
MOV-14D471K	14D471K
MOV-14D511K	14D511K
MOV-14D561K	14D561K
MOV-14D621K	14D621K
MOV-14D681K	14D681K
MOV-14D751K	14D751K
MOV-14D781K	14D781K
MOV-14D821K	14D821K
MOV-14D911K	14D911K
MOV-14D102K	14D102K
MOV-14D112K	14D112K
MOV-14D152K	14D152K
MOV-14D182K	14D182K

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

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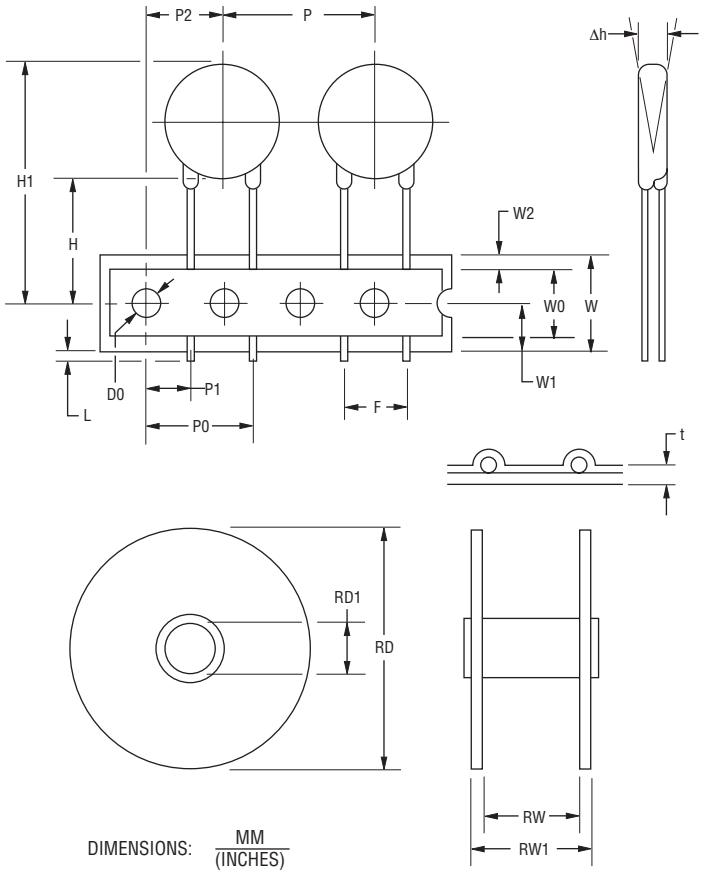
Packaging Information

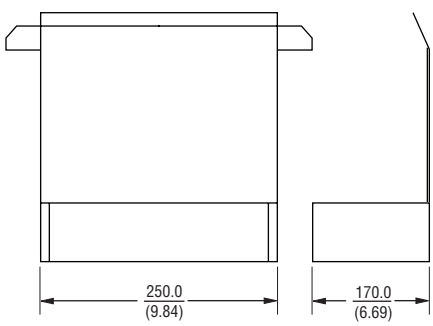
TAPE & REEL



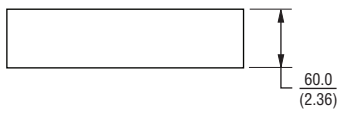
Item	Symbol	14 mm Disc
Reel Outside Diameter	RD	355 (13.98)
Reel Inner Diameter	RD1	30 (11.81)
Tape Width	RW	55 (2.165)
Reel Width	RW1	63 (2.48)
Pitch of Component	P	25.4 ± 1.0 (1.00 ± 0.04)
Feed Hole Pitch	P0	12.7 ± 1.0 (0.50 ± 0.04)
Feed Hole Center to Pitch	P1	8.95 ± 0.7 (0.352 ± 0.3)
Feed Hole Center 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	4.0 (0.157) max.
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 ± 0.5 (0.63 ± 0.02)
Component Height	H1	40.0 (1.57) 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 MOV-14D180K – 14D331K MOV-14D361K - 14D821K	-	 500 400

NOTE: Models MOV-14D911K, 102K, 112K, 152K and 182K are not available in Tape & Reel packaging.

BULK



QUANTITY:
MOV-14D180K - MOV14D331K = 800 PCS. PER BOX
MOV-14D361K - MOV14D621K = 600 PCS. PER BOX
MOV-14D681K - MOV14D112K = 400 PCS. PER BOX
MOV-14D152K - MOV14D182K = 300 PCS. PER BOX



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