
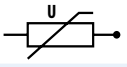

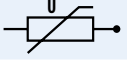

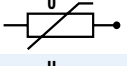

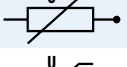

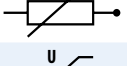

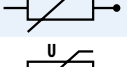

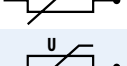

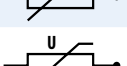



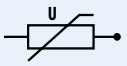

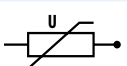

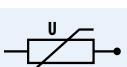

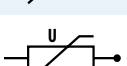

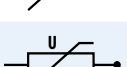

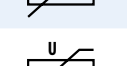


Bourns® MOV, MLV and Hybrid Component Product Guide

Through Hole

Series	Description	Product Photo	Device Symbol	Technology & Package	Sizes (mm) or Package	Max Continuous Voltage (V_{rms})	Max Continuous Voltage (V_{dc})	Peak Single Pulse Current 8/20 μs (I_{max})	Temperature Rating °C	Agency Listing
EV	Compact MOV round disk with extra high surge capabilities			MOV round disk	7, 10, 14, 20	150 – 550 V	200 – 745 V	2500 – 15,000 A	-40 to +105	UL 1449
CVQ	Extended medium voltage varistors disk			MOV round disk	7, 10, 14, 20, 23	60 – 550 V	85 – 745 V	1,750 – 15,000 A	-40 to +85	UL 1449
CV	Medium voltage disk varistors			MOV round disk	5, 7, 10, 14, 20, 23	50 – 680 V	65 – 895 V	400 – 6,500 A	-40 to +85	UL 1449
SV	Special medium voltage varistors			MOV square disk	5, 7, 10, 14, 20, 23	60 – 550 V	85 – 745 V	600 – 15,000 A	-40 to +85	UL 1449
MOV-07DxxxK	Extended temperature and voltage varistors			MOV round disk	7	11 – 510 V	14 – 675 V	250 – 1,200 A	-40 to +105	UL 1449
MOV-10DxxxK	Extended temperature and voltage varistors			MOV round disk	10	11 – 510 V	14 – 675 V	500 – 2500 A	-40 to +105	UL 1449
MOV-14DxxxK	Extended temperature and voltage varistors			MOV round disk	14	11 – 1100 V	14 – 1465 V	1,000 – 4,500 A	-40 to +105	UL 1449
MOV-20DxxxK	Extended temperature and voltage varistors			MOV round disk	20	11 – 1100 V	14 – 1465 V	2,000 – 6,500 A	-40 to +105	UL 1449
ZV	High temperature low voltage leaded varistors			MLV leaded	5, 7, 10, 14, 20	11 – 40 V	14 – 56V	100 – 2,000 A	-55 to +125	UL 1449


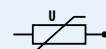

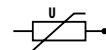

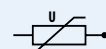
SMD

Series	Description	Product Photo	Device Symbol	Technology & Package	Sizes (mm) or Package	Max Continuous Voltage (V_{rms})	Max Continuous Voltage (V_{dc})	Peak Single Pulse Current 8/20 μs (I_{max})	Temperature Rating °C	Agency Listing
DV	High temperature low & medium voltage varistors			MOV SMD	2220, 3225, 4032	11 – 300 V	14 – 385 V	100 – 1200 A	-55 to +125	UL 1449
PV	Low & medium encapsulated varistors			MOV SMD	3225, 4032	60 – 300 V*	85 – 385 V*	100 – 1200 A	-40 to +85	UL 1449
ZV	High temperature low voltage varistors			MLV SMD	0603, 0805, 1206, 1210, 1812, 2220	11 – 130 V*	14 – 170 V*	30 – 1200 A	-55 to +125	N/A
ZVHT	Extended high temperature low voltage varistors			MLV SMD	0603, 0805, 1206, 1210, 1812, 2220	11 – 130 V*	14 – 170 V*	30 – 1200 A	-55 to +150	N/A
ZVX	High temperature, low capacitance & low energy varistors			MLV SMD	0603, 0805, 1206	11 – 30 V*	14 – 38 V*	30 – 40 A	-55 to +125	N/A
ZVE	High temperature EDS suppression varistors			MLV SMD	0603, 0805, 1206, 1210	14 V	18 V	2 A	-55 to +125	N/A


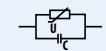

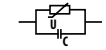

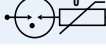

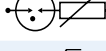

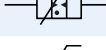



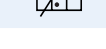
*Lower voltage available upon request

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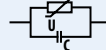

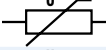

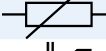

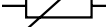
HIGH ENERGY

Series	Description	Product Photo	Device Symbol	Technology & Package	Sizes (mm) or Package	Max Continuous Voltage (V_{rms})	Max Continuous Voltage (V_{dc})	Peak Single Pulse Current 8/20 μs (I_{max})	Temperature Rating °C	Agency Listing
ZOV	High energy square shaped			Epoxy coated with rigid terminals and metalized blocks	23, 25, 32, 40, 60	60 – 680 V	85 – 895 V	18 – 80 kA	-40 to +85	UL 1449
ZOVR	High energy round shape			Epoxy coated with rigid terminals and metalized blocks	25, 32, 40	60 – 680 V	85 – 895 V	18 – 40 kA	-40 to +85	UL 1449
ZOVS/ZOVA/ZOVH	Square shaped high energy stacked			Epoxy coated with rigid terminals	40	275 – 440 V	350 – 385 V	40 kA	-40 to +85	UL 1449

HYBRID

Series	Description	Product Photo	Device Symbol	Technology & Package	Sizes (mm) or Package	Max Continuous Voltage (V_{rms})	Max Continuous Voltage (V_{dc})	Peak Single Pulse Current 8/20 μs (I_{max})	Temperature Rating °C	Agency Listing
MV	High temperature dual function MLV & cap filter			MLV capacitor through-hole	9 mm	11 – 95 V	14 – 125 V	150 A	-55 to +125	N/A
QV	High temperature automotive dual function MLV & cap filter			MLV capacitor through-hole	9 mm, 12 mm	14 – 40 V	16 – 56 V	800 A, 1200 A	-55 to +125	N/A
GMOV14	Hybrid MOV-GDT			GMOV™ through-hole	14 mm	45 – 320 V	56 – 415 V	6 kA	-40 to +85	UL 1449
GMOV20	Hybrid MOV-GDT			GMOV™ through-hole	20 mm	45 – 320 V	56 – 415 V	10 kA	-40 to +85	UL 1449
IsoM3	Fully-integrated High Temperature Hybrid MOV-GDT			IsoMOV™ through-hole	10 mm	175 – 320 V	225 – 415 V	6 kA	-40 to +125	UL 1449
IsoM5	Fully-integrated High Temperature Hybrid MOV-GDT			IsoMOV™ through-hole	14 mm	175 – 555 V	225 – 745 V	10 kA	-40 to +125	UL 1449
IsoM8	Fully-integrated High Temperature Hybrid MOV-GDT			IsoMOV™ through-hole	20 mm	250 – 550 V	320 – 745 V	15 kA	-40 to +125	UL 1449

AUTOMOTIVE

Series	Description	Product Photo	Device Symbol	Technology & Package	Sizes (mm) or Package	Max Continuous Voltage (V_{rms})	Max Continuous Voltage (V_{dc})	Peak Single Pulse Current 8/20 μs (I_{max})	Temperature Rating °C	Agency Listing
QV	High temperature automotive grade dual-function EMI suppression filter			MLV capacitor through-hole	9 mm, 12 mm	14 – 40 V	16 – 56 V	800 A, 1200 A	-55 to +125	Grade 1 qualified
AV-TH	High temperature automotive grade through-hole multilayer varistor			MLV leaded	602, 802, 902, 1103	14 – 40 V	16 – 56 V	400 – 2000 A	-55 to +125	Grade 1 qualified
AV-SMD	High temperature automotive grade varistors			MLV SMD	0805, 1206, 1812, 2220, 3225	14 – 40 V	16 – 56 V	200 – 1200 A	-55 to +125	Grade 1 qualified
AVHT-SMD	Extended high temperature automotive grade varistors			MLV SMD	0805, 1206, 1812, 2220, 3225	14 – 40 V	16 – 56 V	200 – 1200 A	-55 to +150	Grade 1 qualified