

32 Series to 53 Series – Large MOV's With Tabs

For Applications In Secondary Surge Arrestors

Bussmann's metal oxide surge absorbers are larger diameter versions of the conventional metal oxide varistor disk components. They have flat metal tab terminals to handle higher currents and larger surge energies. Either straight tabs or tabs with formed "feet" to facilitate mounting onto printed circuit boards are available. These devices are conformally coated with a flame-retardant epoxy coating.

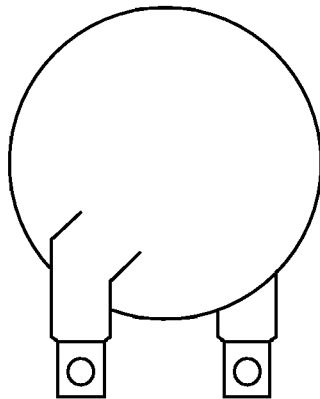
These large units are intended primarily for incorporation into surge absorbing devices used in outdoor and service entrance environments (IEEE C62.41 Location Category C), as well as some indoor locations close to the service entrance (IEEE C62.41 Location Category B). See ANSI/IEEE C62.41-1991, "IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits."

In Category B locations, unidirectional impulses are simulated by a 1.2/50 μ sec voltage waveform with an open-circuit crest voltage of 6 kV and an 8/20 μ sec current

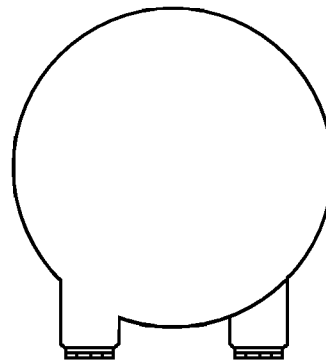
waveform with short-circuit current of 3 kA. The 6 kV value corresponds to the sparkover voltage level for most internal residential and commercial wiring systems. The 3 kA current limit is derived by IEEE from field experience and from experimental lightning tests.

Category C locations are exposed to voltages higher than 6 kV because the limiting effect of wiring sparkover is not present. Voltages in excess of 10 kV and discharge currents of more than 10 kA could occur in areas of high lightning exposure. All load equipment in Category C locations should be protected by the installation of **secondary surge arrestors**.

ANSI/IEEE C62.11, "IEEE Standard for Metal-Oxide Surge Arrestors for AC Power Circuits", details the performance characteristics and test procedures for **secondary surge arrestors**.



Straight Tabs
32mm, 40mm, 53mm



Formed Tabs
32mm, 40mm, 53mm



32 Series to 53 Series – Large MOV's With Tabs

32mm Series Available with straight tab or formed tab

Safety Recognitions (footnotes)	32mm Dia. Bussmann Number (See Note)	Nom. Size mm	Minimum Marking	Maximum Continuous Ratings		Maximum Energy Single Pulse 8 x 20µS	Peak Current Single Pulse 8 x 20µS	Varistor Voltage VDC @ 1mA		Clamping Voltage @ Current Shown		Capacitance 1KHz25°C ±30%
				VAC	VDC			Vmin	Vmax	VCLmax	ICL	
1 2 3	MOV32131BM_	32	M131-BM	130	175	210	25000	184	224	340	200	4700
1 2 3	MOV32141BN_	32	M141-BN	140	180	225	25000	198	242	365	200	4300
1 2 3	MOV32151BO_	32	M151-BO	150	200	240	25000	212	259	395	200	4000
1 2 3	MOV32181BP_	32	M181-BP	180	230	250	25000	255	311	470	200	3500
1 2 3	MOV32231BQ_	32	M231-BQ	230	300	300	25000	326	397	595	200	2800
1 2 3	MOV32251BR_	32	M251-BR	250	330	330	25000	354	432	650	200	2500
1 2 3	MOV32271BS_	32	M271-BS	270	360	360	25000	382	466	710	200	2200
1 2 3	MOV32301BT_	32	M301-BT	300	390	380	25000	425	518	790	200	2000
1 2 3	MOV32321BU_	32	M321-BU	320	420	430	25000	453	553	840	200	1900
1 2 3	MOV32391BV_	32	M391-BV	390	505	550	25000	552	674	1025	200	1600
1 2 3	MOV32421BW_	32	M421-BW	420	560	600	25000	594	725	1120	200	1500
1 2 3	MOV32461BX_	32	M461-BX	460	615	520	25000	651	795	1240	200	1400
1 2 3	MOV32481BV_	32	M481-BV	480	640	550	25000	679	829	1300	200	1300
1 2 3	MOV32511BY_	32	M511-BY	510	675	580	25000	722	881	1390	200	1200
1 2 3	MOV32551BZ_	32	M551-BZ	550	700	620	25000	778	950	1500	200	1150
1 2 3	MOV32581CA_	32	M581-CA	580	735	650	25000	821	1002	1575	200	1100
1 2 3	MOV32621CB_	32	M621-CB	620	800	680	25000	877	1071	1670	200	1000
1 2 3	MOV32681CC_	32	M681-CC	680	860	760	25000	962	1175	1815	200	900
1 2 3	MOV32751AY_	32	M751-AY	750	970	800	25000	1062	1300	2000	200	800
1 2 3	MOV32881CD_	32	M881-CD	800	1150	850	25000	1245	1520	2290	200	680
1 2	MOV32102CE_	32	M102-CE	1000	1200	900	25000	1414	1728	2550	200	600

1 = UL1449 Surge Suppression 2 = UL1414 Across-The-Line 3 = CSA

Note: Insert (A) in blank to indicate STRAIGHT tabs or (B) to indicate FORMED tabs (i.e. MOV32131BMA or MOV32131BMB).

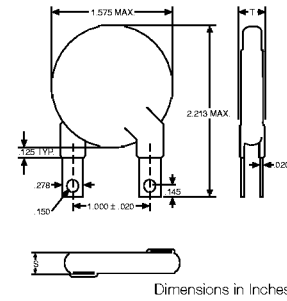
Dimensions in inches

32 Series Straight Tab Varistor		
Bussmann Number	S	T Max
MOV32131BMA	.100	.248
MOV32141BNA	.110	.252
MOV32151BOA	.110	.257
MOV32181BPA	.110	.267
MOV32231BQA	.130	.280
MOV32251BRA	.140	.287
MOV32271BSA	.140	.294
MOV32301BTA	.150	.305
MOV32321BUA	.150	.312
MOV32391BVA	.170	.312
MOV32421BWA	.180	.332
MOV32461BXA	.190	.344
MOV32481BVA	.190	.350
MOV32511BYA	.200	.360
MOV32551BZA	.220	.373
MOV32581CAA	.220	.382
MOV32621CBA	.230	.395
MOV32681CCA	.250	.414
MOV32751AYA	.280	.460
MOV32881CDA	.320	.476
MOV32102CEA	.370	.514

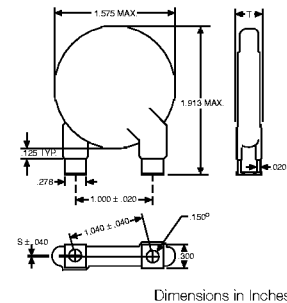
32 Series Formed Tab Varistor		
Bussmann Number	S	T Max
MOV32131BMB	.184	.248
MOV32141BNB	.180	.252
MOV32151BOB	.176	.257
MOV32181BPB	.171	.267
MOV32231BQB	.155	.280
MOV32251BRB	.149	.287
MOV32271BSB	.142	.294
MOV32301BTB	.135	.305
MOV32321BUB	.131	.312
MOV32391BVB	.117	.312
MOV32421BWB	.107	.332
MOV32461BXB	.095	.344
MOV32481BVB	.090	.350
MOV32511BYB	.083	.360
MOV32551BZB	.068	.373
MOV32581CAB	.060	.382
MOV32621CBB	.053	.395
MOV32681CCB	.037	.414
MOV32751AYB	.010	.460
MOV32881CDB	-.035	.476*
MOV32102CEB	-.080	.514*

*Direction of offset dimension "S" changes when S<0.

Straight Tab



Formed Tab



BIF document: 3504



32 Series to 53 Series – Large MOV's With Tabs

40mm Series Available with straight tab or formed tab

Safety Recognitions (footnotes)	40mm Dia. Bussmann Number (See Note)	Nom. Size mm	Minimum Marking	Maximum Continuous Ratings		Maximum Energy Single Pulse 8 x 20µS	Peak Current Single Pulse 8 x 20µS	Varistor Voltage VDC @ 1mA		Clamping Voltage @ Current Shown		Capacitance 1KHz25°C ±30%
				VAC	VDC			Vmin	Vmax	VCLmax	ICL	
1 2 3	MOV40131CF_	40	Z131-CF	130	175	310	40000	184	224	340	300	10000
1 2 3	MOV40141BR_	40	Z141-BR	140	180	330	40000	198	242	365	300	9000
1 2 3	MOV40151BS_	40	Z151-BS	150	200	360	40000	212	259	395	300	8000
1 2 3	MOV40181CG_	40	Z181-CG	180	230	390	40000	255	311	470	300	7100
1 2 3	MOV40231CH_	40	Z231-CH	230	300	460	40000	326	397	595	300	5600
1 2 3	MOV40251AT_	40	Z251-AT	250	330	490	40000	354	432	650	300	5000
1 2 3	MOV40271BV_	40	Z271-BV	270	360	550	40000	382	466	710	300	4500
1 2 3	MOV40301BW_	40	Z301-BW	300	390	600	40000	425	518	790	300	4000
1 2 3	MOV40321CL_	40	Z321-CI	320	420	640	40000	453	553	840	300	3800
1 2 3	MOV40391AY_	40	Z391-AY	390	505	800	40000	552	674	1025	300	3300
1 2 3	MOV40421CJ_	40	Z421-CJ	420	560	910	40000	594	725	1120	300	3000
1 2 3	MOV40461CK_	40	Z461-CK	460	615	780	40000	651	795	1240	300	2600
1 2 3	MOV40481CL_	40	Z481-CL	480	640	820	40000	679	829	1300	300	2700
1 2 3	MOV40511CE_	40	Z511-CE	510	675	900	40000	722	881	1390	300	2500
1 2 3	MOV40551CM_	40	Z551-CM	550	700	960	40000	778	950	1500	300	2300
1 2 3	MOV40581BB_	40	Z581-BB	580	735	1000	40000	821	1002	1575	300	2200
1 2 3	MOV40621CN_	40	Z621-CN	620	800	1040	40000	877	1071	1670	300	2100
1 2 3	MOV40681CO_	40	Z681-CO	680	860	1100	40000	962	1175	1815	300	2000
1 2	MOV40751BC_	40	Z751-BC	750	970	1200	40000	1062	1300	2000	300	1800
1 2	MOV40881CP_	40	Z881-CP	880	1150	1300	40000	1245	1520	2290	300	1500
1 2	MOV40102BF_	40	Z102-BF	1000	1200	1400	40000	1414	1728	2550	300	1300

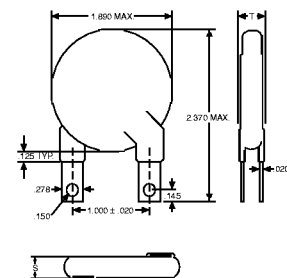
1 = UL1449 Surge Suppression 2 = UL1414 Across-The-Line 3 = CSA

Note: Insert (A) in blank to indicate STRAIGHT tabs or (B) to indicate FORMED tabs (i.e. MOV40131BMA or MOV40131BMB).

Bussmann Number	S	T Max
MOV40131CFA	.100	.248
MOV40141BRA	.110	.252
MOV40151BSA	.110	.257
MOV40181CGA	.110	.267
MOV40231CHA	.130	.280
MOV40251ATA	.140	.287
MOV40271BVA	.140	.294
MOV40301BWA	.150	.305
MOV40321CIA	.150	.312
MOV40391AYA	.170	.312
MOV40421CJA	.180	.332
MOV40461CKA	.190	.344
MOV40481CLA	.190	.350
MOV40511CEA	.200	.360
MOV40551CMA	.220	.373
MOV40581BBA	.220	.382
MOV40621CNA	.230	.395
MOV40681COA	.250	.414
MOV40751BCA	.280	.460
MOV40881CPA	.320	.476
MOV40102BFA	.370	.514

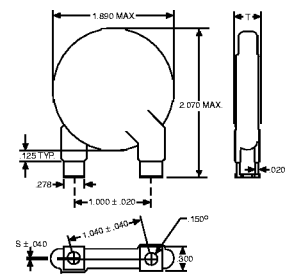
Bussmann Number	S	T Max
MOV40131CFB	.184	.248
MOV40141BRB	.180	.252
MOV40151BSB	.176	.257
MOV40181CGB	.171	.267
MOV40231CHB	.155	.280
MOV40251ATB	.149	.287
MOV40271BVB	.142	.294
MOV40301BWB	.135	.305
MOV40321CIB	.131	.312
MOV40391AYB	.117	.312
MOV40421CJB	.107	.332
MOV40461CKB	.095	.344
MOV40481CLB	.090	.350
MOV40511CEB	.083	.360
MOV40551CMB	.068	.373
MOV40581BBB	.060	.382
MOV40621CNB	.053	.395
MOV40681COB	.037	.414
MOV40751BCB	.010	.460
MOV40881CPB	-.035	.476*
MOV40102BFB	-.080	.514*

Straight Tab



Dimensions in Inches

Formed Tab



Dimensions in Inches

*Direction of offset dimension "S" changes when S<0.



32 Series to 53 Series – Large MOV's With Tabs

53mm Series Available with straight tab or formed tab

Safety Recognitions (footnotes)	53mm Dia. Bussmann Number (See Note)	Nom. Size mm	Minimum Marking	Maximum Continuous Ratings		Maximum Energy Single Pulse 8 x 20µS	Peak Current Single Pulse 8 x 20µS	Varistor Voltage VDC @ 1mA		Clamping Voltage @ Current Shown		Capacitance 1KHz25°C ±30%
				VAC	VDC			Vmin	Vmax	VCLmax	ICL	
1 2 3	MOV53131AT_	53	M131-AT	130	175	490	70000	184	224	340	500	18000
1 2 3	MOV53141AU_	53	M141-AU	140	180	530	70000	198	242	365	500	16000
1 2 3	MOV53151AV_	53	M151-AV	150	200	570	70000	212	259	395	500	14000
1 2 3	MOV53181AW_	53	M181-AW	180	230	630	70000	255	311	470	500	12500
1 2 3	MOV53231AX_	53	M231-AX	230	300	730	70000	326	397	595	500	10000
1 2 3	MOV53251AY_	53	M251-AY	250	330	800	70000	354	432	650	500	8800
1 2 3	MOV53271AZ_	53	M271-AZ	270	360	860	70000	382	466	710	500	8000
1 2 3	MOV53301BA_	53	M301-BA	300	390	940	70000	425	518	790	500	7200
1 2 3	MOV53321BB_	53	M321-BB	320	420	1000	70000	453	553	840	500	6600
1 2 3	MOV53391BC_	53	M391-BC	390	505	1200	70000	552	674	1025	500	6200
1 2 3	MOV53421BD_	53	M421-BD	420	560	1500	70000	594	725	1120	500	5300
1 2 3	MOV53461BC_	53	M461-BC	460	615	1200	70000	651	795	1240	500	5000
1 2 3	MOV53481BE_	53	M481-BE	480	640	1250	70000	679	829	1300	500	4800
1 2 3	MOV53511BF_	53	M511-BF	510	675	1400	70000	722	881	1390	500	4400
1 2 3	MOV53551BD_	53	M551-BD	550	700	1500	70000	778	950	1500	500	4100
1 2 3	MOV53581BG_	53	M581-BG	580	735	1580	70000	821	1002	1575	500	4000
1 2 3	MOV53621BH_	53	M621-BH	620	800	1750	70000	877	1071	1670	500	3700
1 2 3	MOV53681BI_	53	M681-BI	680	860	1800	70000	962	1175	1815	500	3300
1 2	MOV53751BJ_	53	M751-BJ	750	970	2000	70000	1062	1300	2000	500	3100
1 2	MOV53881BK_	53	M881-BK	880	1150	2500	70000	1245	1520	2290	500	2400
1 2	MOV53102BL_	53	M102-BL	1000	1200	3000	70000	1414	1728	2970	500	2100

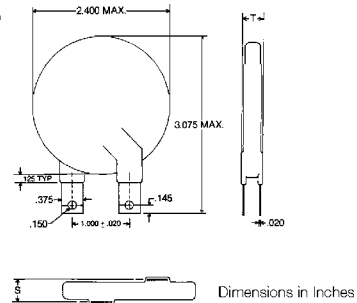
1 = UL1449 Surge Suppression 2 = UL1414 Across-The-Line 3 = CSA

Note: Insert (A) in blank to indicate STRAIGHT tabs or (B) to indicate FORMED tabs (i.e. MOV53131BMA or MOV53131BMB).

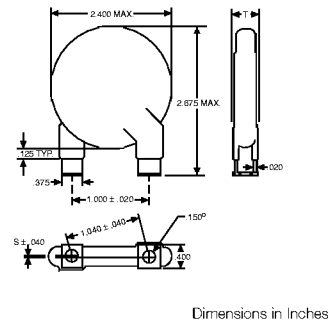
Bussmann Number	S	T Max
MOV53131ATA	.100	.248
MOV53141AUA	.110	.252
MOV53151AUA	.110	.257
MOV53181AWA	.110	.267
MOV53231AXA	.130	.280
MOV53251AYA	.140	.287
MOV53271AZA	.140	.294
MOV53301BAA	.150	.305
MOV53321BBA	.150	.312
MOV53391BCA	.170	.312
MOV53421BDA	.180	.332
MOV53461BCA	.190	.344
MOV53481BEA	.190	.350
MOV53511BFA	.200	.360
MOV53551BDA	.220	.373
MOV53581BGA	.220	.382
MOV53621BHA	.230	.395
MOV53681BIA	.250	.414
MOV53751BJA	.280	.460
MOV53881BKA	.320	.476
MOV53102BLA	.370	.514

Bussmann Number	S	T Max
MOV53131ATB	.384	.248
MOV53141AUB	.380	.252
MOV53151AVB	.376	.257
MOV53181AWB	.371	.267
MOV53231AXB	.355	.280
MOV53251AYB	.349	.287
MOV53271AZB	.342	.294
MOV53301BAB	.335	.305
MOV53321BBB	.331	.312
MOV53391BCB	.317	.312
MOV53421BDB	.307	.332
MOV53461BCB	.295	.344
MOV53481BEB	.290	.350
MOV53511BFB	.283	.360
MOV53551BDB	.268	.373
MOV53581BGB	.260	.382
MOV53621BHB	.253	.395
MOV53681BIB	.237	.414
MOV53751BJB	.210	.460
MOV53881BKB	.165	.476
MOV53102BLB	.120	.514

Straight Tab



Formed Tab

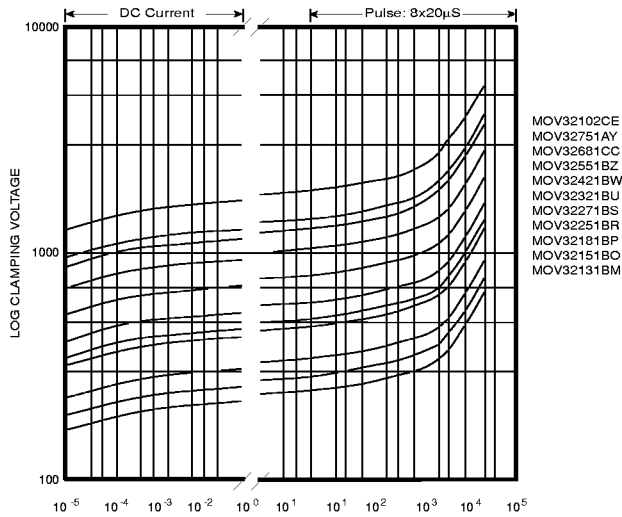


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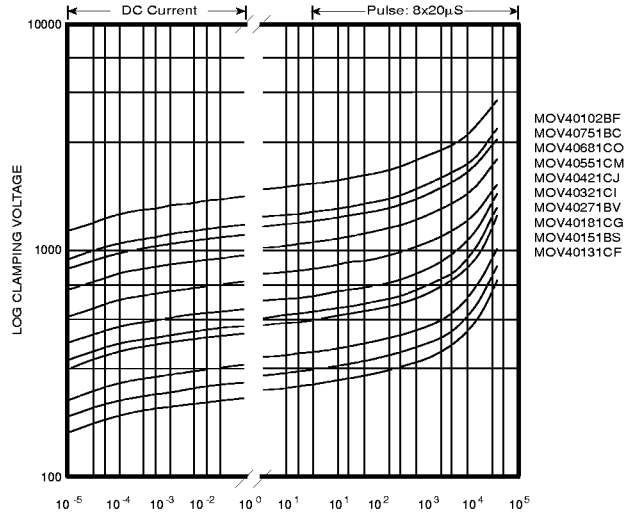


32 Series to 53 Series – Large MOV's With Tabs

32 Series Current Characteristics



40 Series Current Characteristics



53 Series Current Characteristics

