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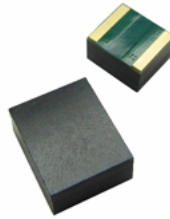
# BUSSMANN SERIES

## Technical Data ELX1004

Effective February 2021

# MOVS4032

## Surface mount metal oxide varistor



### Product features

- Surface mount metal oxide varistor (MOV)
- 4032 (10182 metric) package size
- High transient current capability
- Plastic package meets UL 94 V-0
- Meets UL1449 4th edition
- Moisture sensitivity level (MSL): 1

### Applications

- Power supply
- Home appliance
- Industrial equipment
- Telecommunication or telephone system
- Vac driven & COB LED lighting

### Agency information

- cURus recognized:  
File: E340782, Guide VZCA2 and VZCA8



### Environmental compliance



### Ordering part number

**MOV S 4032 V011**

Family name \_\_\_\_\_

Type \_\_\_\_\_

Size \_\_\_\_\_

Working voltage ( $V_{ms}$ ) \_\_\_\_\_

# EATON

Powering Business Worldwide

Electrical characteristics (+25 °C)

Part number	Working voltage		Varistor voltage @ 1 mAdc $V_v$ (V) typical	Leakage current @ $V_v$ * 80% (at initial state) IL ( $\mu$ A) maximum	Clamping voltage 8/20 $\mu$ s $V_c$ (V) maximum	Peak current 8/20 $\mu$ s $i_{max}$ (A) maximum	Component thickness T (mm) $\pm 0.3$
	$V_{rms}$ (V) maximum	$V_{dc}$ (V) maximum					
MOVS4032V011	11	14	16.2-19.8	50	40 @ 2.5 A	250	3.2
MOVS4032V014	14	18	19.8-24.2	50	48 @ 2.5 A	250	3.2
MOVS4032V017	17	22	24.3-29.7	50	60 @ 2.5 A	250	3.2
MOVS4032V020	20	26	29.7-36.3	50	73 @ 2.5 A	250	4.2
MOVS4032V025	25	31	35.1-42.9	50	80 @ 2.5 A	250	4.2
MOVS4032V030	30	38	42.3-51.7	50	104 @ 2.5 A	250	4.2
MOVS4032V035	35	45	50.4-61.6	50	123 @ 2.5 A	250	4.2
MOVS4032V040	40	56	61.2-74.8	50	145 @ 2.5 A	250	4.2
MOVS4032V050	50	66	73.8-90.2	50	135 @ 10 A	1200	3.2
MOVS4032V060	60	85	90-110	50	165 @ 10 A	1200	3.2
MOVS4032V075	75	102	108-132	50	200 @ 10 A	1200	4.2
MOVS4032V095	95	127	135-165	50	250 @ 10 A	1200	4.2
MOVS4032V120	120	160	170-207	50	300 @ 10 A	1200	4.2
MOVS4032V130	130	175	185-225	50	340 @ 10 A	1200	4.2
MOVS4032V140	140	180	198-242	50	360 @ 10 A	1200	4.2
MOVS4032V150	150	200	216-264	50	395 @ 10 A	1200	4.2
MOVS4032V180	180	230	255-311	50	455 @ 10 A	1200	4.2
MOVS4032V195	195	250	270-330	50	500 @ 10 A	1200	4.2
MOVS4032V210	210	275	297-363	50	550 @ 10 A	1200	4.2
MOVS4032V230	230	300	324-396	50	595 @ 10 A	1200	4.2
MOVS4032V250	250	330	351-429	50	650 @ 10 A	1200	4.2
MOVS4032V275	275	370	387-473	50	710 @ 10 A	1200	5.6
MOVS4032V300	300	385	423-517	50	775 @ 10 A	1200	5.6
MOVS4032V320	320	420	459-561	50	845 @ 10 A	1200	5.6
MOVS4032V360	360	470	504-616	50	925 @ 10 A	1200	5.6
MOVS4032V390	390	505	558-682	50	1025 @ 10 A	1200	5.6
MOVS4032V420	420	560	612-748	50	1120 @ 10 A	1200	5.6
MOVS4032V460	460	615	675-825	50	1240 @ 10 A	1200	5.6
MOVS4032V485	485	640	702-858	50	1290 @ 10 A	1200	5.6
MOVS4032V510	510	670	738-902	50	1355 @ 10 A	1200	5.6

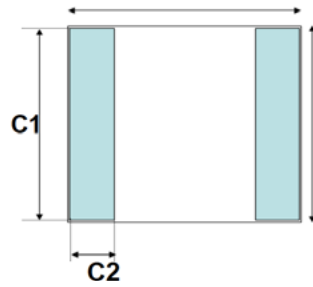
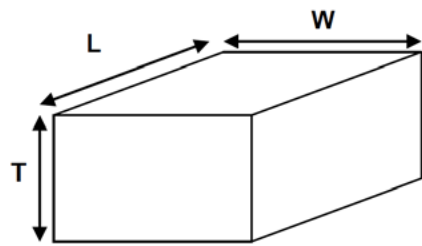
$V_{rms}/V_{DC}$  – Maximum operating voltage the varistor can maintain

$V_v$  – Voltage across the device measured at 1 mA DC current. Equivalent to  $V_{br}$ , “Breakdown Voltage”.

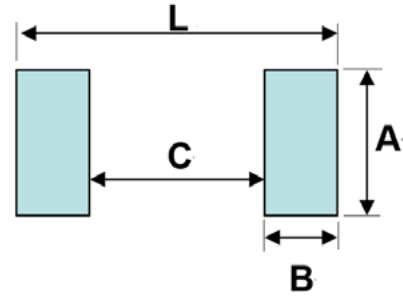
$V_c$  – Maximum peak voltage across the varistor measured at 8/20 us waveform.

$i_{max}$  – Maximum peak current which may be applied with 8/20 us waveform without device failure

**Dimensions- mm**  
Drawing not to scale



**Recommended pad layout**



Dimension	Value	Note
L	10.1 ± 0.2	
W	8.2 ± 0.2	
T	3.2 ± 0.3 4.2 ± 0.3 5.6 ± 0.3	Refer to Electrical specifications table on pg 2
C1	7.4 ± 0.3	
C2	1.6 ± 0.3	

Dimension	Value
A	8.6
B	2.2
C	6.2
L	10.6

**General specifications**

Operating temperature: -40 °C to +85 °C

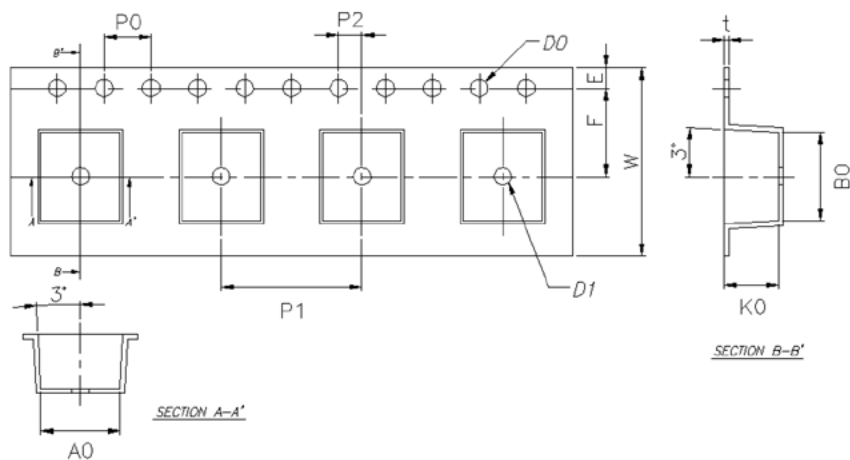
Storage temperature (on board): -40 °C to +85 °C

Solderability: +245 ± 5 °C, 3 ± 1 second

Solder leach resistance: +260 ± 5 °C, 10 ± 1 second

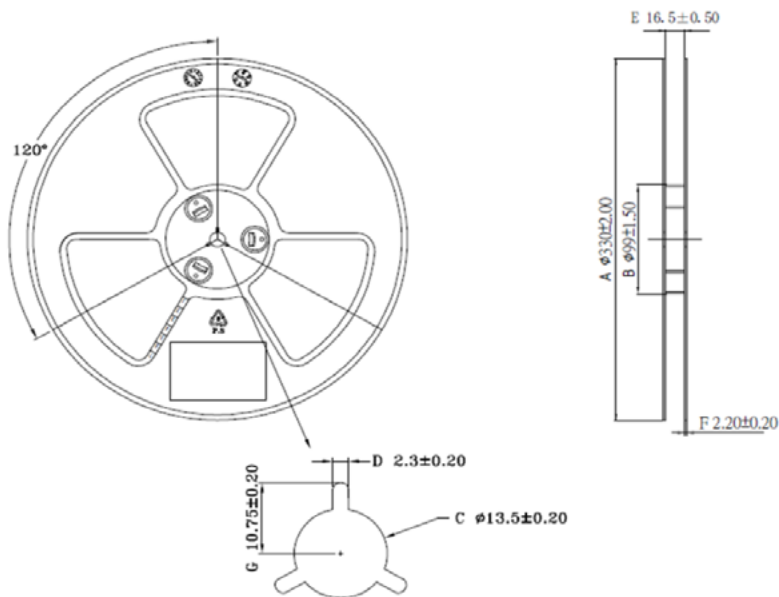
**Packaging information - mm**

900 pieces per reel for MOVS4032, T = 5.6 mm  
1100 pieces per reel for MOVS4032, T = 4.2 mm  
1400 pieces per reel for MOVS4032, T = 3.2 mm



Dimension	Value
W	16.00 ± 0.30
E	1.75 ± 0.10
F	7.50 ± 0.15
D0	1.50 ± 0.10/-0.00
D1	1.50 ± 0.10/-0.00
P0	4.00 ± 0.10
P0 x10	40.0 ± 0.20
t	0.50 ± 0.05
A0	8.55 ± 0.15/-0.05
B0	10.45 ± 0.15/-0.05
K0	6.20 maximum
P1	12.00 ± 0.10
P2	2.00 ± 0.15

**Reel dimension - mm**



Dimension	Value
A	330 ± 2.00
B	99 ± 1.50
C	13.50 ± 0.20
D	2.30 ± 0.20
E	16.50 ± 0.50
F	2.20 ± 0.20
G	10.75 ± 0.20

Solder reflow profile



Table 1 - Standard SnPb solder (T<sub>C</sub>)

Package thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2 - Lead (Pb) free solder (T<sub>C</sub>)

Package thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 – 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Reference J-STD-020

Profile feature	Standard SnPb solder	Lead (Pb) free solder
Preheat and soak		
• Temperature min. (T <sub>smin</sub> )	100 °C	150 °C
• Temperature max. (T <sub>smax</sub> )	150 °C	200 °C
• Time (T <sub>smin</sub> to T <sub>smax</sub> ) (t <sub>s</sub> )	60-120 seconds	60-120 seconds
Ramp up rate T <sub>L</sub> to T <sub>p</sub>	3 °C/ second max.	3 °C/ second max.
Liquidous temperature (T <sub>L</sub> )	183 °C	217 °C
Time (t <sub>L</sub> ) maintained above T <sub>L</sub>	60-150 seconds	60-150 seconds
Peak package body temperature (T <sub>p</sub> )*	Table 1	Table 2
Time (t <sub>p</sub> )* within 5 °C of the specified classification temperature (T <sub>C</sub> )	20 seconds*	30 seconds*
Ramp-down rate (T <sub>p</sub> to T <sub>L</sub> )	6 °C/ second max.	6 °C/ second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

\* Tolerance for peak profile temperature (T<sub>p</sub>) is defined as a supplier minimum and a user maximum.

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