



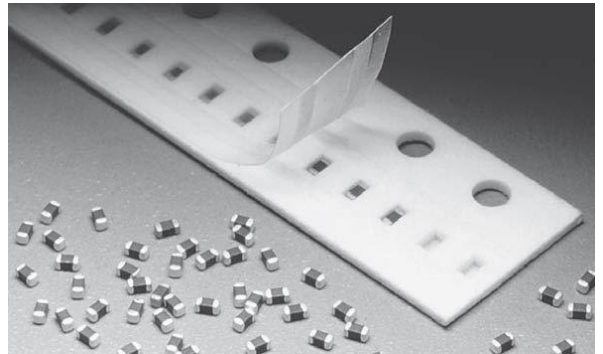
SMD Metal Oxide Varistors

BL0402A Series

Metal Oxide Varistors - BL0402A Series

Features

- EIA size: 0402
- Variable capacitance
- Operating voltage: 3.3Vdc ~24Vdc
- High surge suppress capability
- Bidirectional and symmetrical V/I characteristics
- Multilayer ceramic construction technology
- RoHS & Halogen Free (HF) compliant
- Operating temperature range: -40°C ~ +85°C
- Storage temperature range: -40°C ~ +125°C



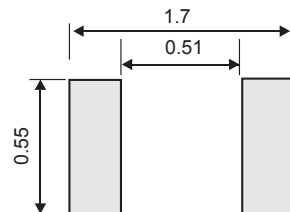
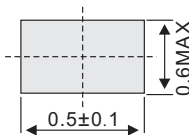
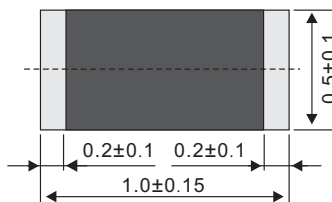
Applications

- Used to Help Achieve Electromagnetic Compliance of End Products
- Provides On-Board Transient Voltage Protection for ICs, CMOS and MOSFET.
- Suppression of Inductive Switching or Other Transient Events Such as EFT and Surge Voltage at the Circuit Board Level.
- Protection of Components and Circuits Sensitive to ESD Transients Occurring on Power supplies, Control and Signal Lines.

Product Name

B	L	0	4	0	2	A	3	R	3	K
↓		↓				↓	↓		↓	
LOGO		Packaging 0402				Standard	Varistor Voltage 3.3V		Tolerance K: +10%	

Dimensions And Recommended Pad Layout (Unit:mm)





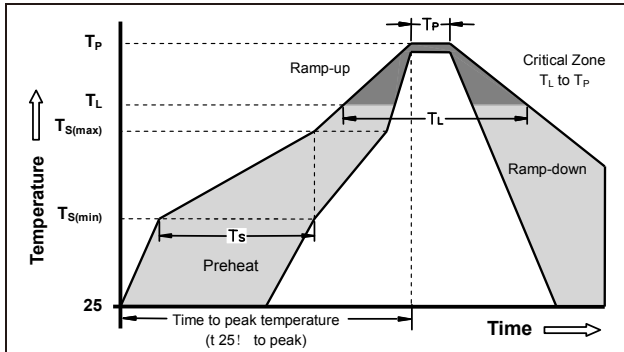
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Electrical Characteristics

Type Number	Varistor Voltage	Maximum Allowable Voltage		Maximum Energy (10/1000 μ s)	Maximum Clamping Voltage		Withstanding Surge Current (8/20 μ s)	Typical Capacitance (Reference)
	V1mA(V)	VAC(V)	VDC(V)	(J)	IP(A)	VC(V)	I(A)	@1KHz(pf)
BL0402A3R3K	2.4-4.0	1.4	2	0.05	1	9	10	450
BL0402A5R0K	4.0-6.0	2.4	3.3	0.05	1	12	10	300
BL0402A8R0K	6.7-10.1	4	5.6	0.05	1	14	10	230
BL0402A120K	10-15.5	7	9	0.05	1	24	10	140
BL0402A180K	16.8-21	11	14	0.05	1	30	10	80
BL0402A210K	18-22.5	12	15	0.05	1	35	10	60
BL0402A240K	21.6-27	14	18	0.05	1	38	10	55
BL0402A270K	26.4-33	17	22	0.05	1	42	10	50
BL0402A300K	28.8-36	18	24	0.05	1	47	10	40

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Soldering Parameters



Precaution for soldering

Note that this product will be easily damaged by rapid heating, rapid cooling or local heating. Do not give heat shock over 100 °C in the process of soldering. We recommend to take preheating and gradual cooling

Soldering gun procedure

- Note the follows, in case of using solder gun for replacement.
- 1) The tip temperature must be less than 280 for the period within 3 seconds by using soldering gun under 30W
 - 2) The soldering gun tip shall not touch this product directly.

Soldering volume

Note that excess of soldering volume will easily get crack the body of this product.

General Technical Data

Operating Temperature		-40 ~ +85 °C
Storage Temperature		-40 ~ +125 °C
Response Time		<1 ns
Solderability		245±5 °C, 3±1sec
Solder leach resistance		260±5 °C, 10±1sec
Taping Package Storage Condition	Storage Temperature	5 ~ 40°C
	Relative Humidity	To 65%
	Storage Time	12 Months max

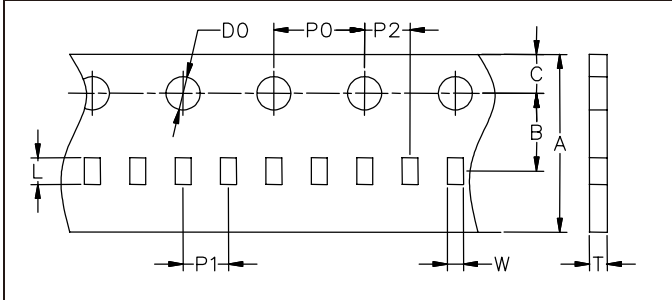
Environmental Performance

Item	Specifications	Test Condition
Bias Humidity	$V_V / V_V \leq \pm 10 \%$	90%RH, 40°C, Working Voltage, 1000 hrs
Thermal Shock	$V_V / V_V \leq \pm 10 \%$	-40°C to 85°C, 30 min. cycle, 5 cycles
Full Load Voltage	$V_V / V_V \leq \pm 10 \%$	Working Voltage, 85°C, 1000 hrs

Reflow Condition		Pb-Free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max ($T_{s(max)}$)	+200 °C
	-Time (min to max) (T_s)	60 -180 Seconds
Average ramp up rate (Liquidus Temp T_L to peak)		3 °C/Second Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/Second Max
Reflow	- Temperature (T_L) (Liquidus)	+217 °C
	- Time (min to max) (T_L)	60 -150 Seconds
Peak Temperature (T_P)		260 +0/-5 °C
Time within 5 °C of actual peak Temperature (T_P)		20-40 Seconds
Ramp-down Rate		6 °C/Second Max
Time 25 °C to peak Temperature (T_P)		8 minutes Max

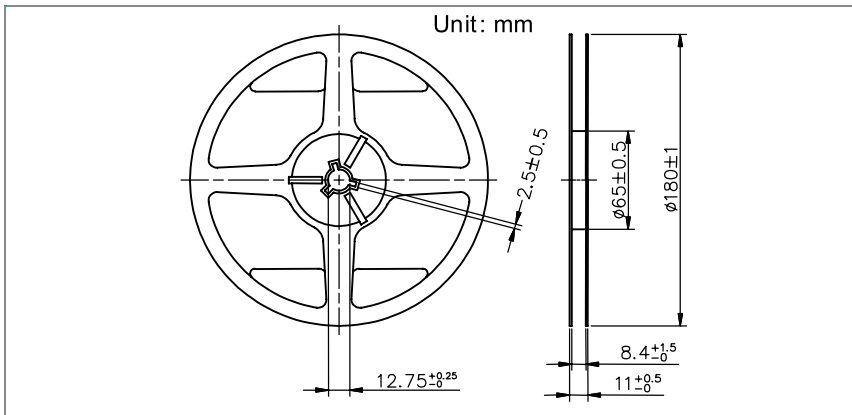
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Packing specifications



Size EIA (EIAJ)	0402	
Symbol	Inches	Millimeters
A	0.315±0.012	8.00±0.30
B	0.138±0.002	3.50±0.05
C	0.069±0.002	1.75±0.05
D0	0.061±0.002	1.55±0.05
P0	0.157±0.004	4.00±0.10
P1	0.079±0.002	2.00±0.05
P2	0.079±0.002	2.00±0.05
W	0.023±0.001	0.59±0.03
L	0.044±0.001	1.12±0.03
T	0.024±0.001	0.60±0.03

Taping Reel Dimensions



Taping Specifications

There Shall be the portion having no product in both the head and the end of taping, and there shall be the cover tape in the heat of taping.

Quantity of products in the taping package

SIZE EIA (EIAJ)	0402 (1005)
Standard Packing Quantity (PCS / reel)	10,000