



SMD Metal Oxide Varistors

BL2220A Series

Metal Oxide Varistors - BL2220A Series

Features

- EIA size:2220
- Variable capacitance
- Operating voltage: 18Vdc ~385Vdc
- 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



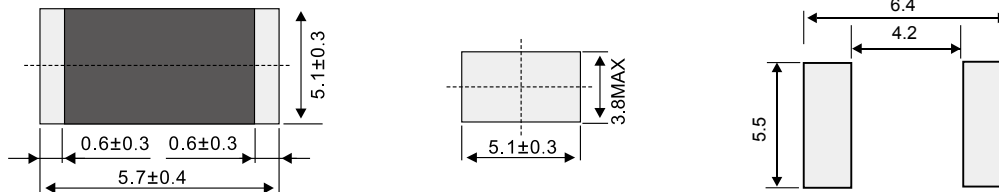
Applications

- 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	2	2	2	0	A	2	4	0	K
↓		↓				↓	↓		↓	
LOGO		Packaging				Standard	Varistor Voltage		Tolerance	
		2220					24V		K:±10%	

Dimensions And Recommended Pad Layout (Unit:mm)





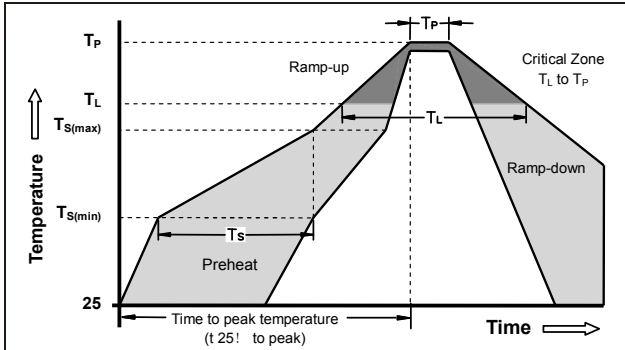
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Electrical Characteristics

Type Number	Varistor Voltage	Maximum Allowable Voltage		Maximum Energy (10/1000 μ s)	Maximum Clamping Voltage		Withstanding Surge Current (8/20 μ s)
	V1mA(V)	VAC(V)	VDC(V)	(J)	IP(A)	VC(V)	I(A)
BL2220A240K	21.6-27	14	18	7.5	10	51	800
BL2220A270K	26.4-33	17	22	7.5	10	62	800
BL2220A300K	28.8-36	18	24	7.5	10	67	800
BL2220A330K	31.2-39	20	26	7.5	10	75	800
BL2220A360K	33.6-42	21	28	7.5	10	85	800
BL2220A390K	36-45	25	30	7.5	10	85	800
BL2220A470K	43.2-57	30	38	7.5	10	96	800
BL2220A530K	46.8-58.5	32	42	7.5	10	105	800
BL2220A560K	54-67.5	35	45	7.5	10	125	800
BL2220A680K	67.2-84	40	56	7.5	10	150	800
BL2220A760K	72-90	43	60	7.5	10	160	800
BL2220A820K	78-97.5	47	65	7.5	10	172	800
BL2220A900K	81.6-102	49	68	7.5	10	180	800
BL2220A101K	102-127.5	60	85	8.5	10	225	800
BL2220A181K	161-198	90	120	8.5	10	350	800
BL2220A241K	216-264	150	200	8.5	10	395	800
BL2220A271K	243-297	175	225	8.5	10	455	800
BL2220A391K	351-429	250	320	10	10	650	800
BL2220A431K	387-473	275	350	10	10	710	800
BL2220A471K	423-517	300	385	10	10	810	800

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Soldering Parameters



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

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

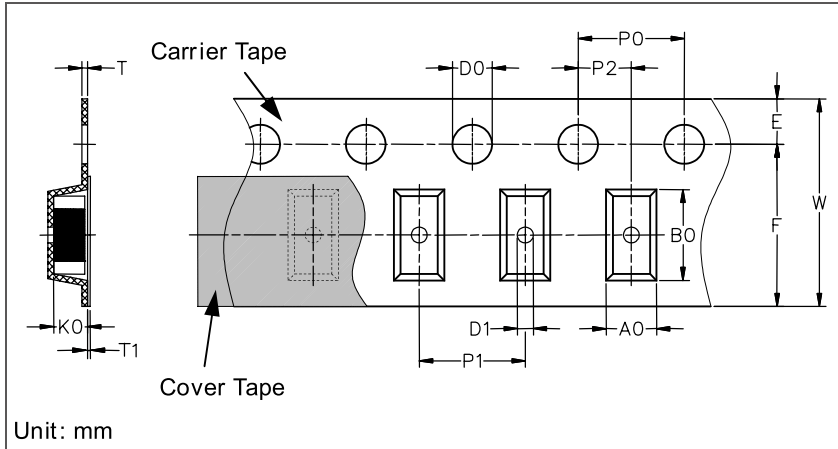
Operating Temperature		-40 ~ +85 °C
Storage Temperature		-40 ~ +125°C
Response Time		<1 ns
Solderability		245±5 °C, 3±1sec
Solder leach resistance		260±5 °C, 10±1sec
Taping Package Storage Condition	Storage Temperature	5 ~ 40°C
	Relative Humidity	To 65%
	Storage Time	12 Months max

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

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Packing specifications



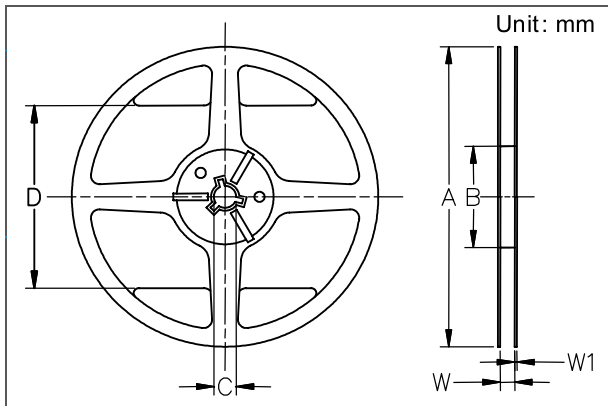
Carrier tape transparent cover tape should be heat-sealed to carry the products, and the reel should be used to reel the carrier tape.

The adhesion of the heat-sealed cover tape shall be 40+20/-15 grams.

Both the head and the end portion of taping shall be empty for reel package and SMT auto-pickup machine. And a normal paper tape shall be connected in the head of taping for the operator handle.

Symbol	A0 ±0.10	B0 ±0.10	K0 ±0.10	T ±0.05	T1 ±0.05	D0 +0.10 -0.00	D1 ±0.05	P1 ±0.10	P2 ±0.05	P0 ±0.050	W ±0.20	E ±0.10	F ±0.05
2220	5.10	5.97	2.80	0.25	0.10	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50

Taping Reel Dimensions



Symbol	A	B	C	D	W	W1
2220	178.0±1.0	60.0±0.5	13.0±0.2	110.0±0.5	13.5±0.5	1.5±0.15

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)	2220
Standard Packing Quantity (PCS / reel)	1000

The contents of a box :
2220 Series: 6 reels / inner box

Label and Marking:

The paper label shall be plastered on the obvious side of the reel, and the information show as right side