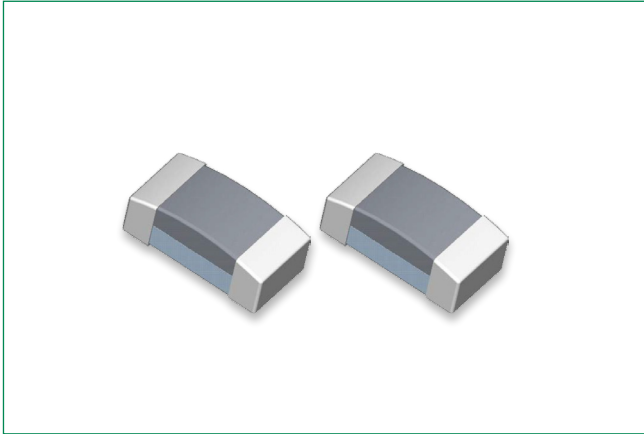
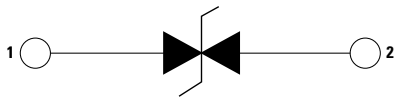


# PGB2 0201 Series

## Surface Mount Polymeric Electrostatic Discharge Suppressors



### Equivalent Circuits



### Product Characteristics

Part Number	Lines Protected	Component Package
PGB2010201KR	1	0201

### Description

PULSE-GUARD® ESD Suppressors help protect sensitive electronic equipment against electrostatic discharge (ESD).

They use polymer composite materials to suppress fast-rising ESD transients (as specified in IEC 61000-4-2), while adding virtually no capacitance to the circuit.

They supplement the on-chip protection of integrated circuitry and are best suited for low-voltage, high-speed applications where low capacitance is important to ensure minimal interference of data signal integrity.

The new and ultra-small surface mount PGB2 0201 products offer a RoHS Compliant, Halogen Free, and 100% Lead Free circuit protection solution.

### Features & Benefits

- Lead-free, Halogen-free, and RoHS compliant
- Ultra-low capacitance
- Low leakage current
- Fast response time
- One line of protection
- Bi-directional
- Withstands multiple ESD strikes
- Compatible with pick-and-place processes

### Applications

- Antenna circuit
- Laptop / desktop computer
- Network hardware
- HDMI 1.3 / 1.4 / 2.0
- USB 3.2
- Computer peripherals
- Digital camera
- External storage
- Set-top box
- SATA and eSATA

### Electrical Characteristics

Items	PGB 0201					Unit
	6	12	15	24	30	
<b>Rated voltage (Max)</b>						<b>V</b>
Leakage current			0.01			µA
Trigger voltage			300			V
Clamping voltage			20			V
Capacitance @1MHz			0.05			pF
IEC 61000-4-2 Direct Discharge			8			kV
IEC 61000-4-2 Air Discharge			15			kV
Response time (Max)			1			ns
ESD withstand pulses			1000			pulses

# PGB2 0201 Series

## Surface Mount Polymeric Electrostatic Discharge Suppressors

### Environmental Specifications

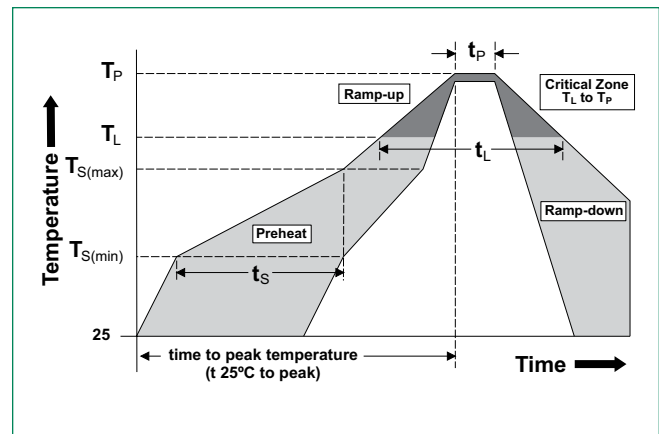
Item	Test Condition	Reference
Operating Temperature	-40 °C to 85 °C	
Bias Humidity	Rated voltage, 90%RH, 40 °C, 1000 hrs	MIL-STD-202 Method 103
Thermal Shock	-40 °C to 85 °C, 30 min. cycle, 5 cycles	JIS C 0025 (1998) Test Na
High Temperature Load Voltage	Rated voltage, 85 °C 1000 hrs	MIL-STD-202G Method 108
Solder Leach Resistance	260 °C 10s	MIL-STD-202G Method 210F

### Part Number List

Part Number	Rated Voltage (Max)
PGB2010201KR-06NR	6 V
PGB2010201KR-12NR	12 V
PGB2010201KR-15NR	15 V
PGB2010201KR-24NR	24 V
PGB2010201KR-30NR	30 V

### Soldering Parameters

<b>Reflow Condition</b>	Pb-free assembly	
<b>Pre Heat</b>	- Temperature Min ( $T_{s(min)}$ )	150 °C
	- Temperature Max ( $T_{s(max)}$ )	200 °C
	- Time (Min to Max) ( $t_p$ )	60–180 seconds
<b>Average Ramp-up Rate (Liquidus Temp (<math>T_L</math>) to peak)</b>	5 °C / second max.	
<b><math>T_{s(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>	5 °C / second max.	
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquidus)	217 °C
	- Temperature ( $t_L$ )	60–150 seconds
<b>Peak Temperature (<math>T_p</math>)</b>	250 <sup>+0/-5</sup> °C	
<b>Time within 5°C of actual peak Temperature (<math>t_p</math>)</b>	20 – 40 seconds	
<b>Ramp-down Rate</b>	5 °C / second max.	
<b>Time 25°C to peak Temperature (<math>T_p</math>)</b>	8 minutes max.	

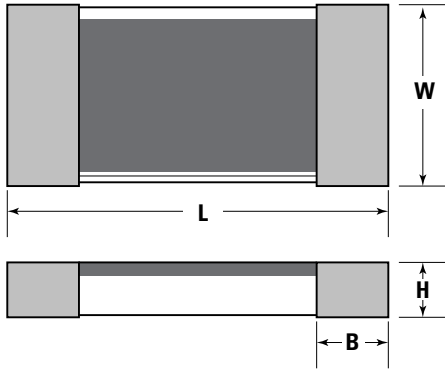


# PGB2 0201 Series

## Surface Mount Polymeric Electrostatic Discharge Suppressors

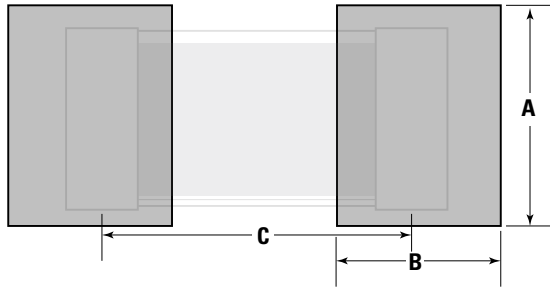
### Dimensions

Unit: mm



Chip Size	L	W	H	B
<b>0201</b>	0.62±0.05	0.32±0.03	0.3±0.05	0.165±0.05

### Recommended Landing Pad

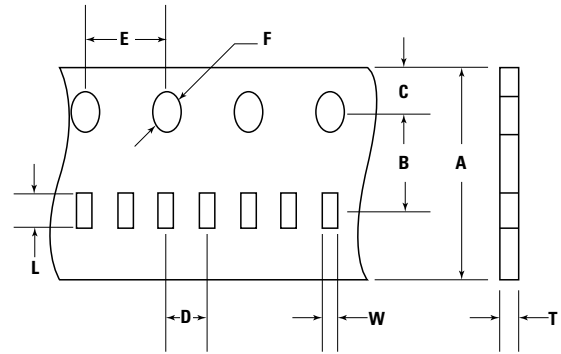
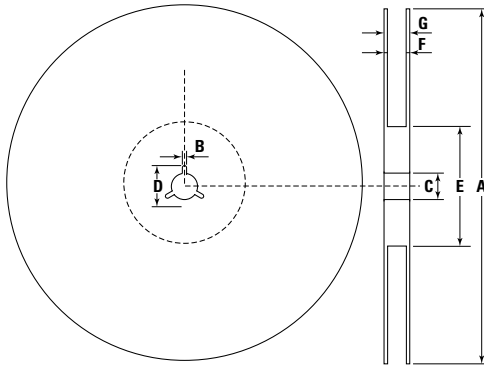


Marking	Unit (mm)
<b>A</b>	0.35±0.05
<b>B</b>	0.27±0.05
<b>C</b>	0.5±0.05

# PGB2 0201 Series

## Surface Mount Polymeric Electrostatic Discharge Suppressors

### Packaging, Tape and Reel Specifications



Marking	Unit (mm)
A	178.0±2.0
B	2.0±0.5
C	13.0±0.5
D	21.0±0.8
E	62.0±1.5
F	9.0±0.5
G	13.0±1.0

Marking	Unit (mm)
A	8.00±0.30
B	3.50±0.05
C	1.75±0.05
D	2.00±0.05
E	4.00±0.10
F	1.55±0.05
L	0.68±0.02
W	0.37±0.02
T	0.42±0.02

Part Number	Packaging Code	Quantity	Packaging Option	Packaging Specification
PGB2010201	KR	15000	Tape and Reel (7" reel)	Carrier Tape: 8 mm, paper Reel: 7" (178 mm) reel

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