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**SINGLE LINE, 12V, 0402 SMD, BI-DIRECTIONAL, TVS DIODE**

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**PRODUCT DESCRIPTION**

The B02CSP12B is a Bi-directional Transient Voltage Suppressor that is designed to provide a higher level protection for sensitive 12V electronic components from damage or latchup due to electrostatic discharge (ESD) and other voltage induced transient events.

**APPLICATIONS**

- ※ Cell Phone Handsets and Accessories
- ※ PDAs
- ※ Notebook and Hand Held Computers
- ※ Pagers
- ※ Smart Cards
- ※ MP3 Players
- ※ Wireless Communication Circuits
- ※ PCMCIA Cards

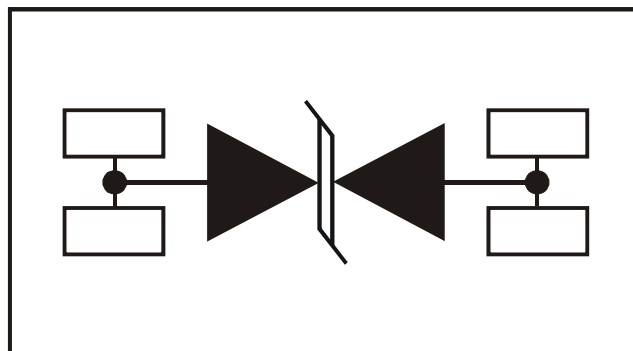
**FEATURES**

- ※ 250 Watts peak pulse power ( $t_p = 8/20\mu s$ )
- ※ Transient protection for data lines to IEC 61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 8kV$  (contact)  
IEC 61000-4-4 (EFT) 40A (5/50ns)
- ※ Bidirectional protection
- ※ Working voltage: 12V
- ※ Low clamping voltage
- ※ ESD Protection > 25 Kilovolts
- ※ Complies with the following standards:
  - IEC 61000-4-2 (ESD) Air-15kv, Contact-8kv
  - IEC 61000-4-4 (EFT) (5/50ns)
  - IEC 61000-4-5 (Surge) (8/20 $\mu s$ )

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**ELECTRICAL SCHEMATIC & PIN CONFIGURATION**

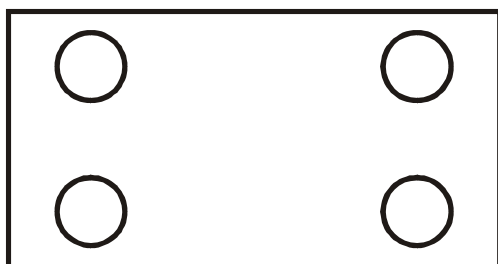
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**PACKAGE / PINOUT DIAGRAMS**


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**Bottom View**

**Side View**

**B02CSP12B  
0402 CSP PACKAGE**
**ORDERING INFORMATION**

Ordering Part Number	Package	Bumps	Polarity
B02CSP12B	CSP (EIA 0402 Size Code)	4	Bi-Directional

**CSP TAPE & REEL SPECIFICATIONS**

Ordering Part Number	Chip Size (in mm)	Qty Per Reel	Reel Size
B02CSP12B	0.99 x 0.483	10,000 pcs/Reel	7 Inch

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**ELECTRICAL CHARACTERISTICS**


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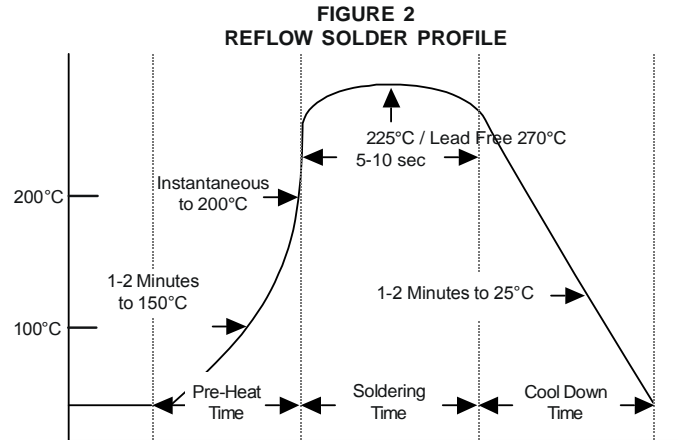
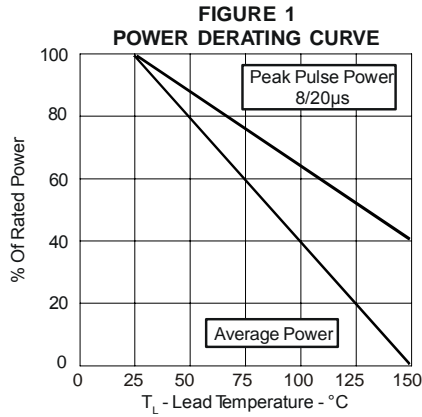
**ABSOLUTE MAXIMUM RATING @ 25°C**

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{pp}$	250	Watts
Soldering Temperature	$T_L$	225	°C
Lead Free Soldering Temperature		270	°C
Operating Temperature	$T_J$	-55 to +150	°C
Storage Temperature	$T_{STG}$	-55 to +150	°C

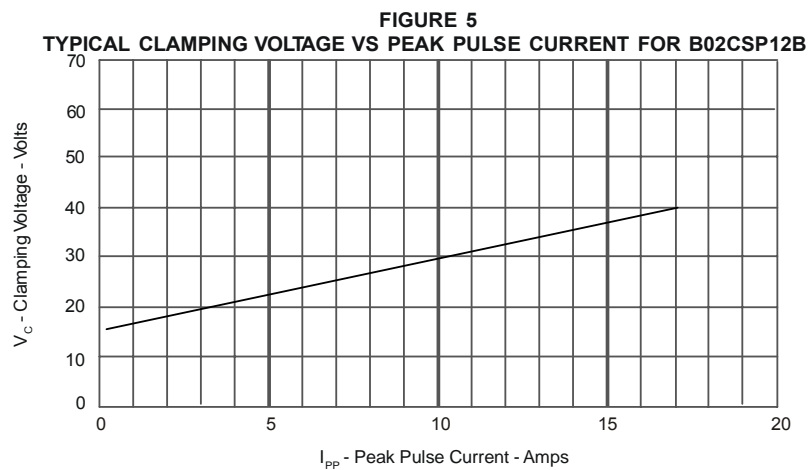
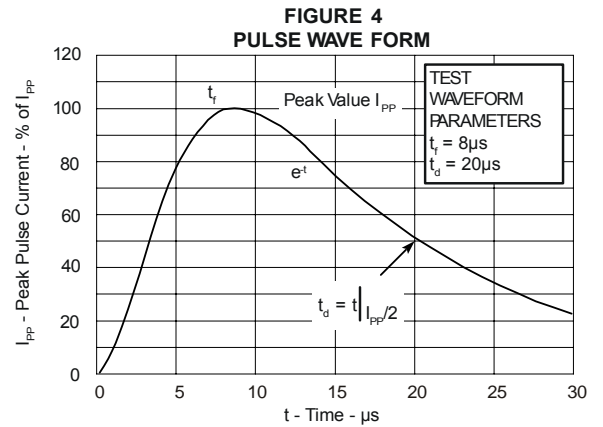
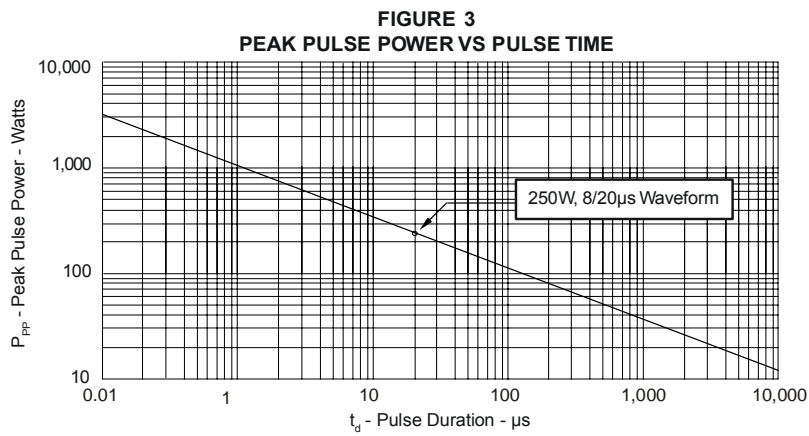
**ELECTRICAL CHARACTERISTICS**

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	$V_{RWM}$				12	V
Reverse Breakdown Voltage	$V_{BR}$	$I_t = 1mA$	13.3			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 12V,$ $T = 25^\circ C$			1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A,$ $t_p = 8/20\mu s$			19	V
Clamping Voltage	$V_C$	$I_{PP} = 9A,$ $t_p = 8/20\mu s$			29.7	V
Junction Capacitance	$C_j$	$V_R = 0V,$ $f = 1MHz$		50		$\mu F$

**TYPICAL CHARACTERISTICS**



**Note:** This reflow profile does not take into account the printed circuit board (PCB) material heating time. Additional time may be required for the preheat time and cool down time upon the PCB or board material.



**PACKAGE OUTLINE & DIMENSIONS**
