



# THE DATASHEET OF SMDB05C



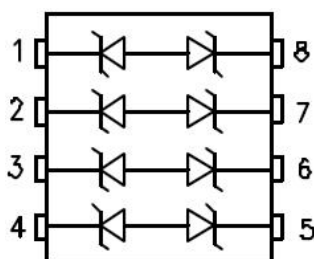
## SMDB03C THRU SMDB24C TVS ARRAY SERIES



### Description

The SMDBXXC series of TVS array have been designed to provide bidirectional protection for sensitive electronics from damage due to voltage transients caused by electrostatic discharge (ESD), electrical fast transients (EFT), lightning and other voltage-induced transient events. The device can be used to protect combinations of four Bidirectional lines.

### Schematic & Pin Configuration



### Features

- Protects 3.3, 5, 12, 15, 24 V Components
- Bidirectional
- Provides Electrically Isolated Protection
- 500 W @ 8/20 us
- Protects 4 Lines
- SO-8 Packaging
- This is a Pb – Free Device
- “-A” is an AEC-Q101 qualified device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Mechanical Characteristics

- SO-8 Surface Mount Package
- Approximate Weight: 0.1 grams
- PIN #1 Indicator: DOT on top of package
- Packaging: Tubes or Tape & Reel per EIA Standard 481

### Application

- RS-232 data lines
- Microprocessor Based Equipment
- Notebooks, Desktops, & Servers
- LAN/WAN Equipment
- Serial and Parallel Port
- Peripherals

### Absolute Maximum Ratings:

Parameter	Symbol	Value	Units
Peak Pulse Power, 8/20 $\mu$ s Wave shape	P	500	W
Operating Temperature	T <sub>J</sub>	-55 to +125	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C
Lead Soldering Temperature	T <sub>L</sub>	260 (10 Sec.)	°C

**Electrical Characteristics@25°C**

Part Number	Stand-off Voltage $V_{wm}$ (V) Max	Breakdown Voltage $V_{BR}$ @1mA (V) Min	Clamping Voltage $V_c$ @ 1 A (V) Max	Leakage Current $I_R$ @ $V_{wm}$ ( $\mu$ A) Max	Capacitance (f = 1MHz) C @ 0V (pF) Max	Temperature Coefficient of $V_{BR}$ a( $V_{BR}$ ) mv/°C Max
SMDB03C	3.3	4	7	200	400	-5
SMDB05C	5.0	6	9.8	40	300	1
SMDB12C	12.0	13.3	19	1	94	8
SMDB15C	15.0	16.7	24	1	70	11
SMDB24C	24.0	26.7	43	1	45	28

**Ratings and Characteristics Curves**

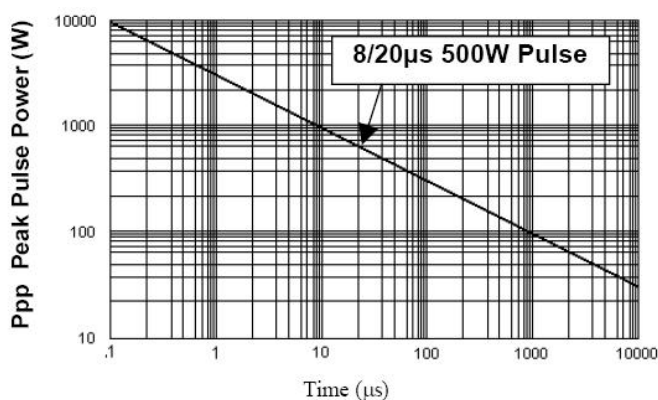


Figure 1. Peak Pulse Power Vs Pulse Time ( $\mu$ s)

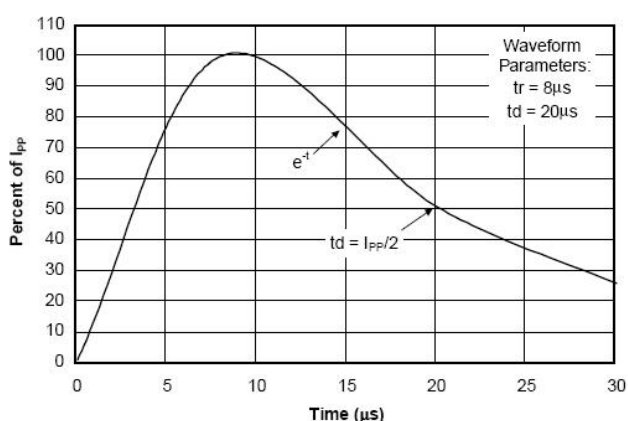


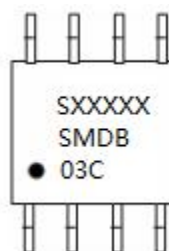
Figure 2. Pulse Wave Form

**Ordering Information**

Device	Package	Shipping
SMDB03C THRU SMDB24C	SO-8 (Pb-Free)	2500pcs / reel
SMDB03CTR THRU SMDB24CTR	SO-8 (Pb-Free)	2500pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**



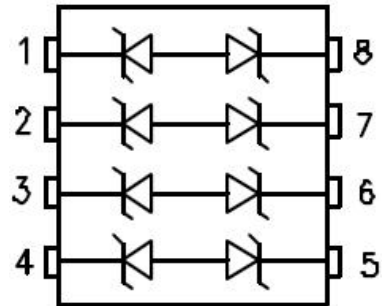
Where XXXXX is YYWWL

SMDB03C = Part Number  
S = S  
YY = Year  
WW = Week  
L = Lot Number

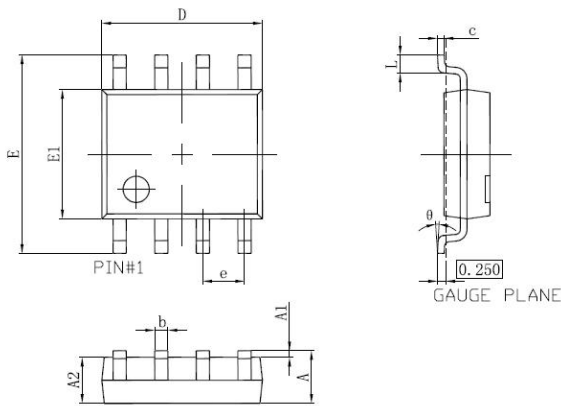
## Circuit Diagram

The SMDBxxC series of devices are designed to protect up to four data lines. The devices are connected as follows:

- ✓ The SMDBxxC are bidirectional devices and are designed for use on line where the normal operating voltage is above ground. Pins 1, 2, 3, and 4 are connected to the protected lines. Pins 5, 6, 7, and 8 are connected to ground. Since the device is electrically symmetrical, these connections may be reversed. The ground connections should be made directly to the ground plane for best results. The path length is kept as short as possible to reduce the effects of parasitic inductance in the board traces.

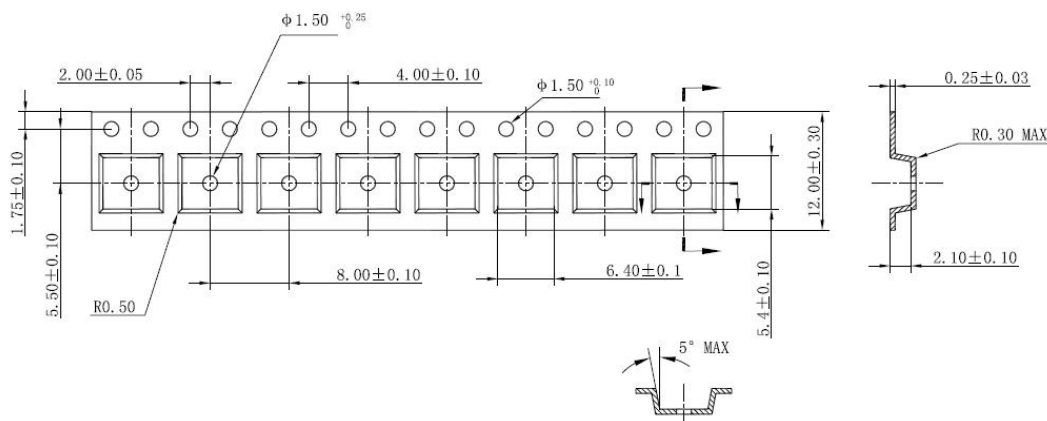


## Mechanical Dimensions SO-8



SYMBOL	Millimeters		Inches	
	MIN.	MAX.	MIN.	MAX.
A	1.350	1.800	0.053	0.071
A1	0.100	0.250	0.004	0.010
A2	1.350	1.750	0.053	0.069
b	0.306	0.510	0.012	0.020
c	0.150	0.300	0.006	0.012
D	4.720	5.120	0.186	0.202
e	1.140	1.400	0.045	0.055
E	5.700	6.300	0.224	0.248
E1	3.750	4.150	0.148	0.163
L	0.300	1.270	0.012	0.050
θ	0°	8°	0°	8°

## Carrier Tape Specification SO-8







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