

ULTRA LOW CAPACITANCE TVS ARRAY



DESCRIPTION

The GBLC03CIHP is an ultra low capacitance transient voltage suppressor array, designed to protect applications such as portable electronics and SMART phones. This device is available in a bidirectional configuration and is rated at 500 Watts for an 8/20 μ s waveshape.

The GBLC03CIHP meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This series offers a ultra low capacitance and low leakage current in a miniature SOD-323 package.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 24A, 8/20 μ s - Level 2 (Line-Gnd) & Level 3 (Line-Line)
- 500 Watts Peak Pulse Power per Line (tp = 8/20 μ s)
- Bidirectional Configuration
- Replacement for MLV (0805)
- Protects One Power or I/O Port
- Low Clamping Voltage
- Ultra Low Capacitance: 0.6pF (Typical)
- RoHS Compliant
- REACH Compliant

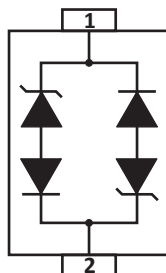
APPLICATIONS

- Ethernet 10/100/1000 Base T
- Cellular & SMART Phones
- Handheld - Wireless Systems
- USB 1.0, USB 2.0 & USB 3.0

MECHANICAL CHARACTERISTICS

- Molded JEDEC SOD-323 Package
- Approximate Weight: 5 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION



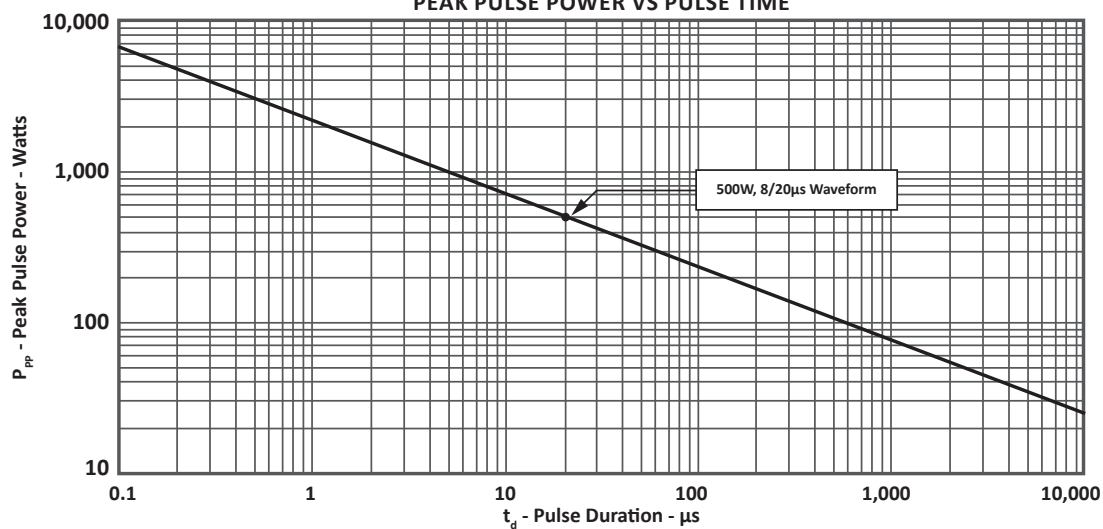
TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20μs) - See Figure 1	P_{PP}	500	Watts
Operating Temperature	T_A	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ IP = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 8/20μs $V_C @ I_{PP}$	MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA	TYPICAL CAPACITANCE @ 0V, 1MHz C pF
GBLC03CIHP	CC	3.0	4.0	6.0	24.0V @ 20.0A	5	0.6

FIGURE 1
PEAK PULSE POWER VS PULSE TIME



TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

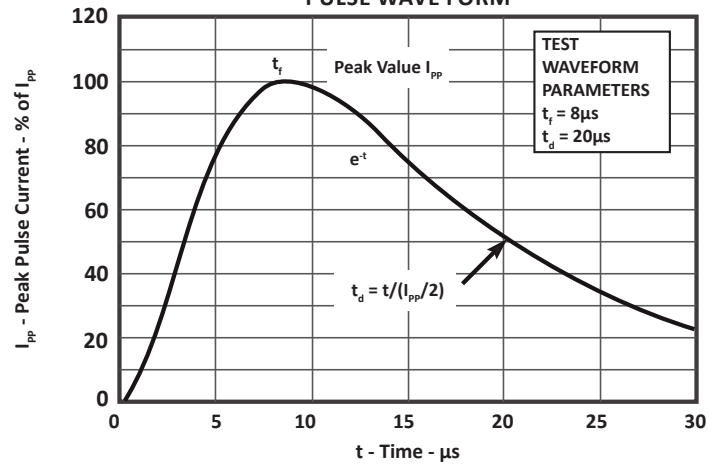
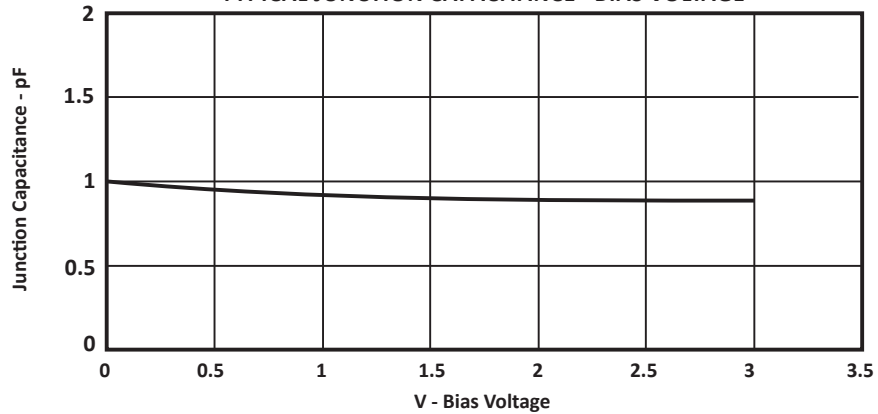
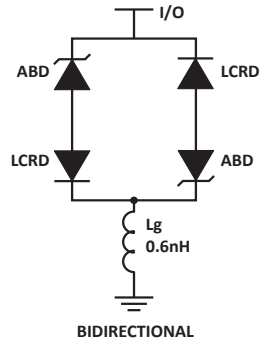


FIGURE 3
TYPICAL JUNCTION CAPACITANCE - BIAS VOLTAGE



SPICE MODEL

FIGURE 1
SPICE MODEL



ABD - Avalanche Breakdown Diode (TVS)
 LCRD: Low Capacitance Rectifier Diode
 Lg - Lead Inductance

TABLE 1 - SPICE PARAMETERS

PARAMETER	UNIT	ABD(TVS)	LCRD
BV	V	4.0	100
IBV	μA	1	0.5
C _{jo}	pF	200	0.3
I _s	A	1E-11	1E-11
Vj	V	0.6	0.6
M	-	0.33	0.33
N	-	1	1
R _s	Ohms	0.22	0.75
TT	s	1E-8	1E-9
EG	eV	1.11	1.11

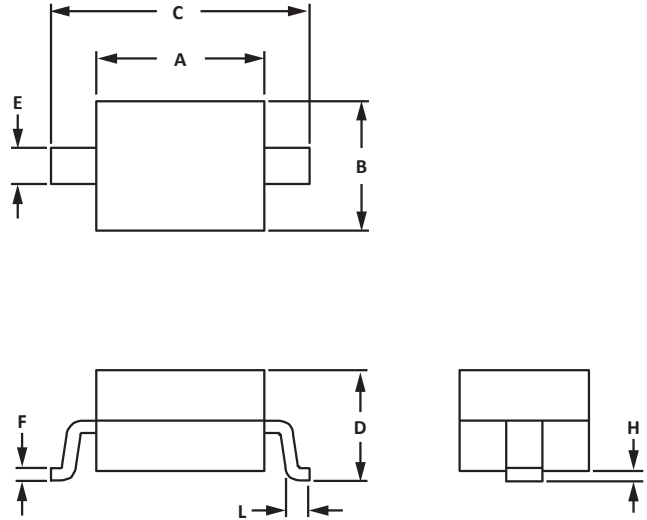
SOD-323 PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.60	1.90	0.063	0.075
B	1.15	1.45	0.045	0.057
C	2.39	2.70	0.094	0.106
D	0.80	1.10	0.031	0.043
E	0.25	0.40	0.010	0.016
F	0.10	0.20	0.004	0.008
H	-	0.10	-	0.004
L	0.20	-	0.008	-

NOTES

- Controlling dimension: millimeters.
- Dimensioning and tolerances per ANSI Y14.5M, 1985.
- Dimensions are exclusive of mold flash and metal burrs.

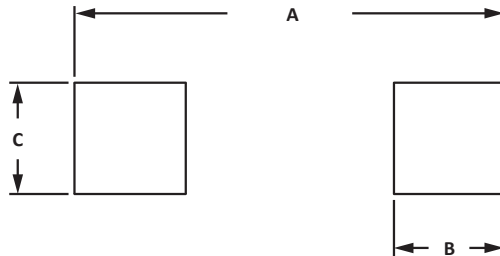


PAD LAYOUT DIMENSIONS

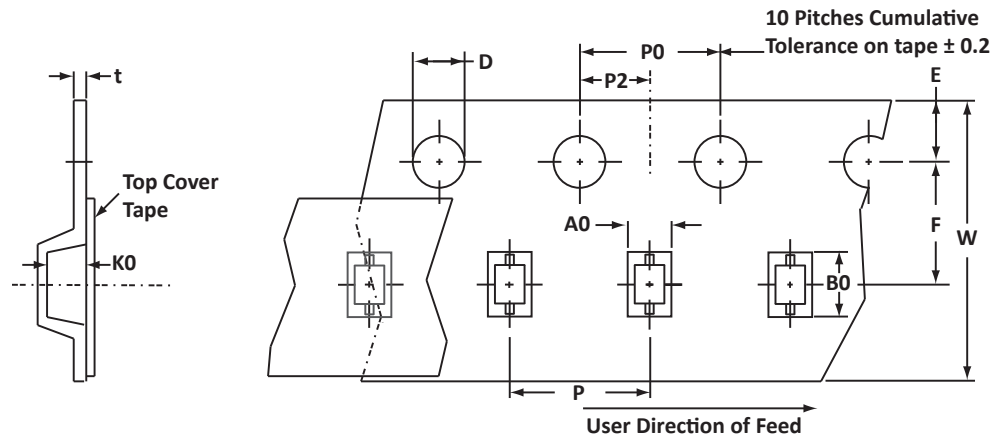
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.87	3.12	0.113	0.123
B	0.66	0.91	0.026	0.036
C	0.66	0.91	0.026	0.036

NOTES

- Controlling dimension: millimeters.



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.55 ± 0.10	2.90 ± 0.10	1.35 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25

NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T7 = 7" Reel - 3,000 pieces per 8mm tape.
4. Marking on Part - marking code (see page 2).

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
GBLC03CIHP	N/A	-T7	3,000	7"	n/a

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products.

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