

## ULTRA LOW CAPACITANCE TVS ARRAY



**SOD-323 PACKAGE**

### DESCRIPTION

The GBLCxxHP/CHP Series are ultra low capacitance transient voltage suppressor arrays, designed to protect applications such as portable electronics and SMART phones. This series is available in both unidirectional and bidirectional configurations and is rated at 750 Watts for an 8/20μs waveshape.

The GBLCxxHP/CHP Series 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  
*Exceeds Level 4: Handles 20kV Contact & 25kV Air Discharge*
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge)
- Compatible with ISO 10605 (ESD): 330pF/2kΩ, ±20kV Contact
- 750 Watts Peak Pulse Power per Line (tp = 8/20μs)
- Replacement for MLV (0805)
- Unidirectional & Bidirectional Configuration
- Protects One Power or I/O Port
- ESD Protection > 25kV
- Low Clamping Voltage
- Maximum Peak Current of 35A @ 8/20μs
- Ultra Low Capacitance: 3pF (Typical)
- Low Leakage < 0.5μA
- RoHS Compliant
- REACH Compliant

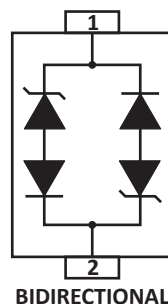
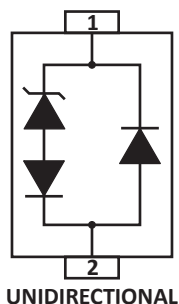
### APPLICATIONS

- Ethernet 10/100/1000 Base T
- SMART Phones
- Handheld - Wireless Systems
- USB Interface

### 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 CONFIGURATIONS



## TYPICAL DEVICE CHARACTERISTICS

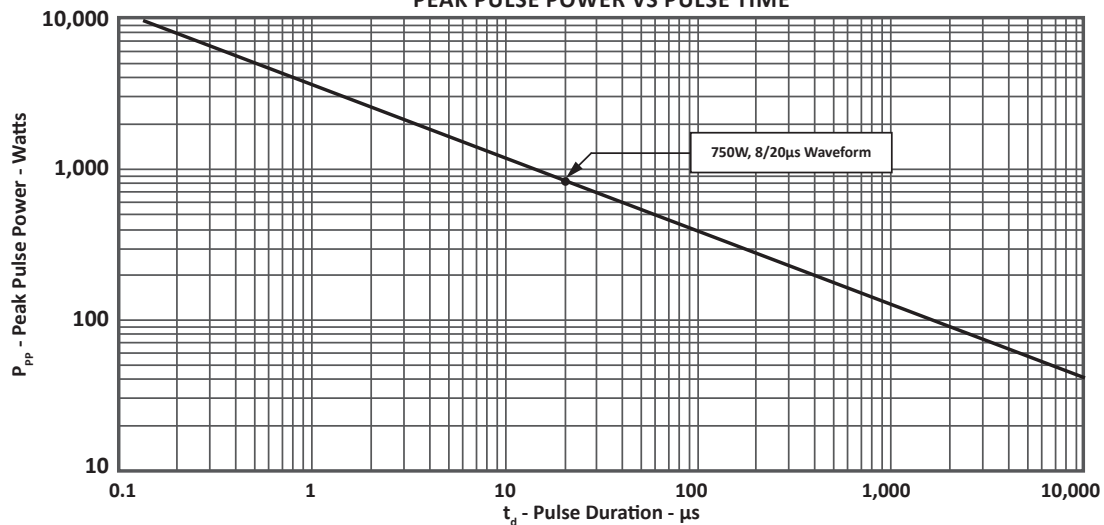
## MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1	$P_{PP}$	750	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) $V_C$ VOLTS			MAXIMUM LEAKAGE CURRENT @ $V_{WM}$ $I_D$ $\mu A$	TYPICAL CAPACITANCE @ 0V, 1MHz C pF
				IP @ 1A	IP @ 24A	IP @ 35A		
GBLC03HP	3HP	3.3	4.0	9.5	17.0	21.5	0.5	3
GBLC03CHP	3CP	3.3	4.0	9.5	17.0	21.5	0.5	3
GBLC05HP	5HP	5.0	6.0	10.5	19.0	23.0	0.5	3
GBLC05CHP	5CP	5.0	6.0	10.5	19.0	23.0	0.5	3

FIGURE 1  
PEAK PULSE POWER VS PULSE TIME



## TYPICAL DEVICE CHARACTERISTICS

FIGURE 2  
PULSE WAVE FORM

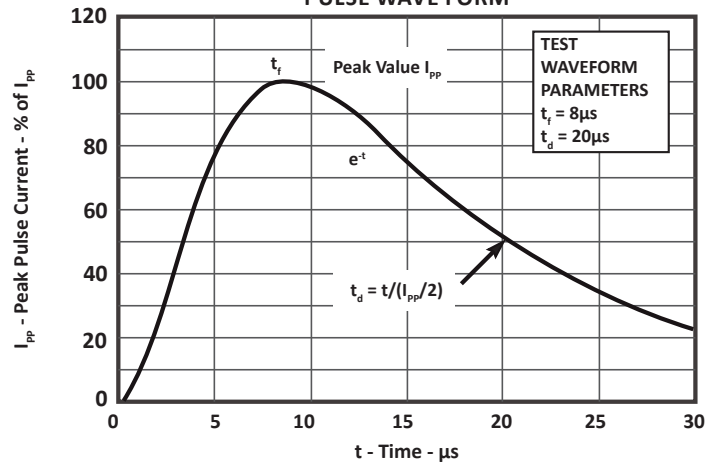
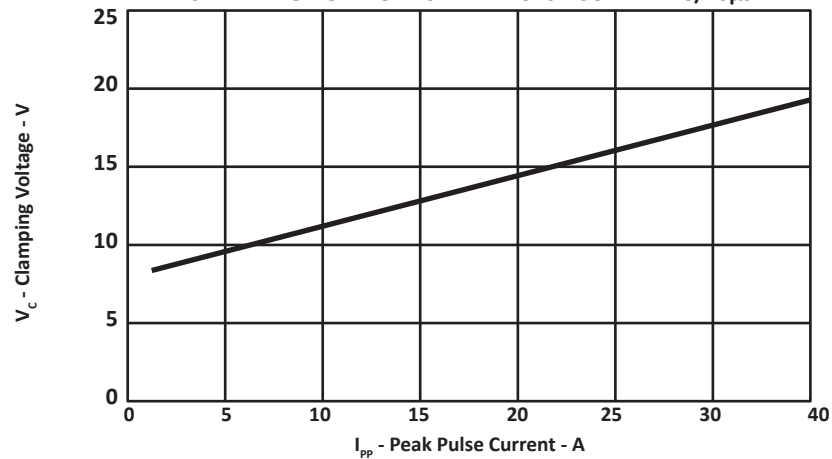
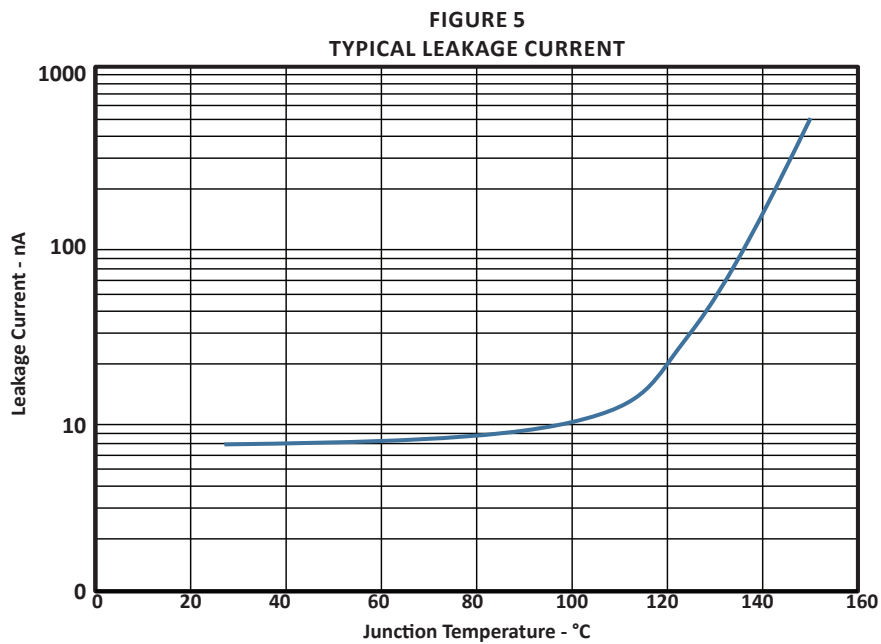
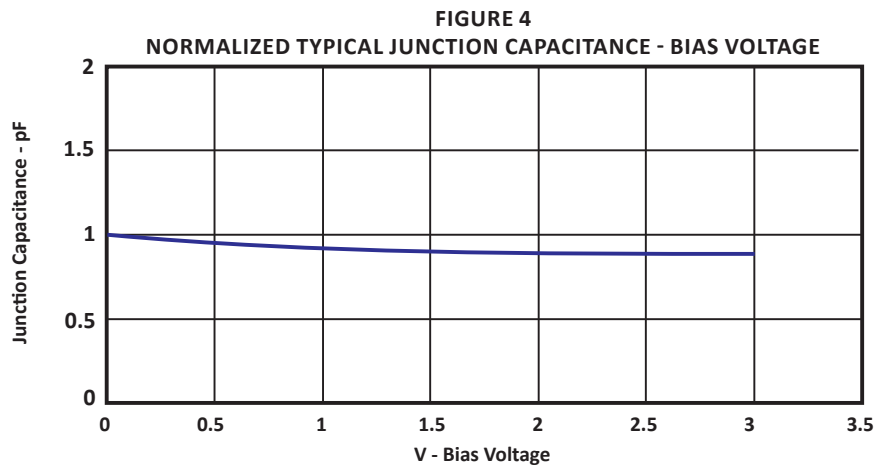


FIGURE 3  
CLAMPING VOLTAGE VS PEAK PULSE CURRENT 8/20 $\mu s$



## TYPICAL DEVICE CHARACTERISTICS



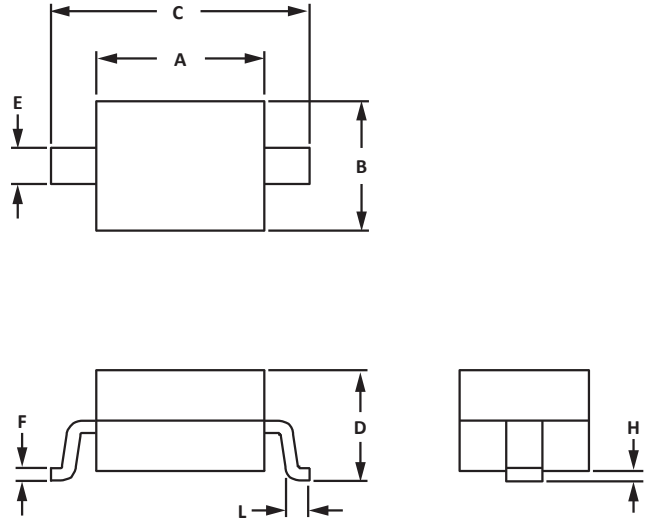
## SOD-323 PACKAGE INFORMATION

## 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.

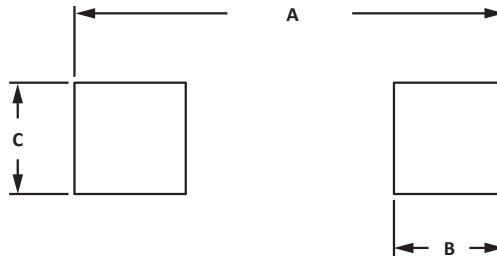


## PAD LAYOUT DIMENSIONS

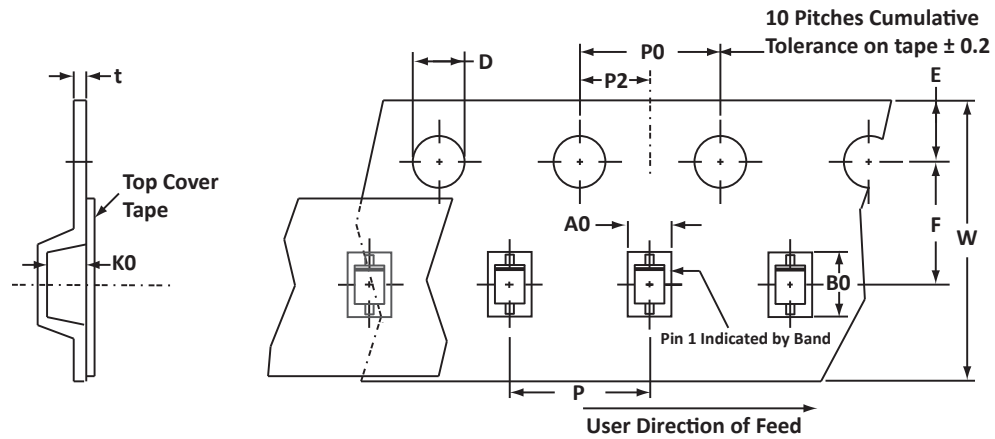
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.87	3.12	0.113	0.123
B	0.66	0.91	0.026	0.036
C	0.66	0.91	0.026	0.036

## 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

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T73 = 7" Reel - 3,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2), polarity band (Unidirectional Only).

## ORDERING INFORMATION

BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
GBLCxxHP/GBLCxxCHP	n/a	-T73	3,000	7"	n/a

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

## COMPANY INFORMATION

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### COMPANY PROFILE

In business more than 25 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. ProTek Devices is ISO 9001:2015 certified.

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