PROTEK DEVICES®
.....Engineered solutions for the transient environment

VSB06P05LCI thru VSB06P12LCI

LOW CAPACITANCE ISOLATED VSIP TVS ARRAY

APPLICATIONS

- **RS-232 & RS-423 Data Lines**
- **T1/E1 & T3/E3**
- **ATM Circuit Interface**
- **ADSL/HDSL & ISDN Interface**
- **V.34/V.90**
- **Cable Modem Intra-Structure Protection**

FEATURES

- **Meets IEC 1000-4-2, -4 & -5 Industry Requirements**
- **600 Watts Peak Pulse Power Dissipation (10/1000μs)**
- **0.100 Inch Lead Spacing**
- **Low Capacitance - 25 pF, < 50 pF per Line Pair**
- **High Surge Capability**
- **Available in 3 Voltage Types Ranging from 5.0V to 12V**
- **ESD Protection > 40 kilovolts**
- **UL 94V-0 Flammability Classification**

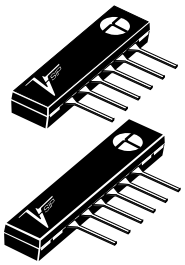
DESCRIPTION

The VSB06PxxLCI family is a series of 600 Watt, low capacitance, bidirectional transient voltage suppressor (TVS) arrays. This series is designed to provide secondary transmission line surge protections for intra-building on both tip-to-ground and ring-to-ground telephone lines. Each line pair is designed to handle to 800V - 100A, 2/10μs intra-building lightning surge required by TR-NWT-001089 (Reference Crystal Semiconductor Group Application Note CS61584 on their T1/E1 product). This device is also capable of meeting the 10/700μs surge required by CCITT K.20, EN61000-4, EN300 386-2 and IEC 1000-2-5.

The VSB06PxxLCI provides current and voltage limiting for metallic TIP/RING surges and takes advantage of the isolation provided by the line transformers to prevent damage from longitudinal (common mode) surges to ground. The low capacitance characteristics do not limit the performance of the T1 and E1 circuit line cards. The single in-line configuration, known as the VSIP®, is designed to be located at the circuit or card edge interface. It is designed on 0.1 inch centers to be consistent with edge card lead spacings.

MAXIMUM RATINGS	
P_{PP} @ 25°C (See Figure 1)	600 Watts, 10/1000 μs Waveshape
Operating & Storage Temperature	-55° to +150°C
Repetition Rate (Duty Cycle)	0.01%
$t_{Clamping}$ (0 Volts to $V_{(BR)}$ Min.)	Bidirectional: < 10 x 10^{-9} seconds
MECHANICAL CHARACTERISTICS	
Package	Molded Plastic VSIP Package
Approximate Weight	1.5 grams
Device Markings	Logo & Part Number
Miscellaneous	Pin No. 1 Indicated by Dot over Pin 1

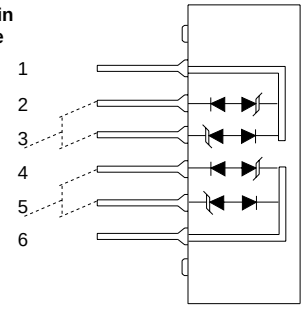
IEC 1000-4 COMPATIBLE



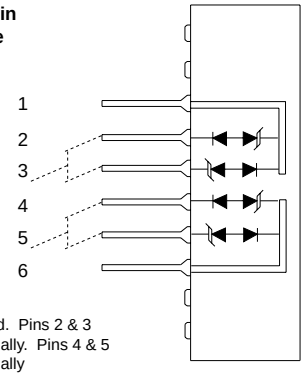
VSIP® PACKAGE

CIRCUIT DIAGRAM

Perferred 8 Pin VSIP Package

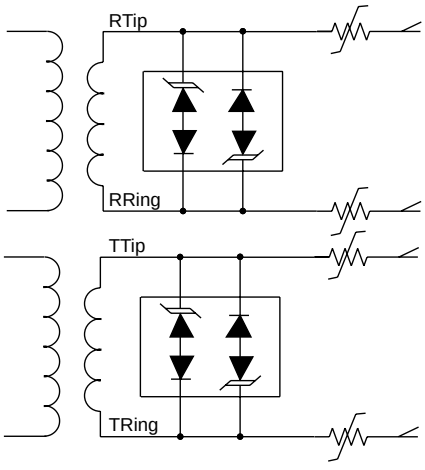


Optional 10 Pin VSIP Package



Pins 1 & 6 ground. Pins 2 & 3 connected externally. Pins 4 & 5 connected externally

TELECOMMUNICATION CIRCUIT LINE CARD APPLICATION



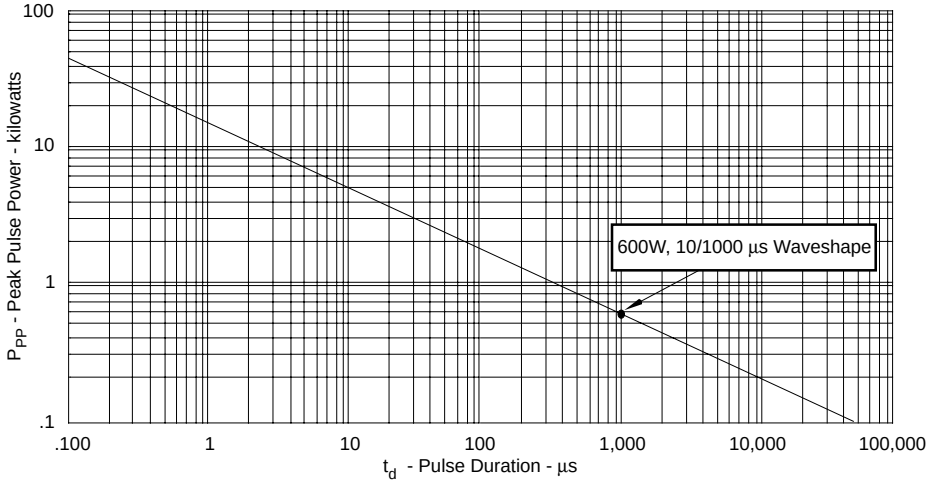
2929 South Fair Lane • Tempe, Arizona 85282 • USA
Tel 602-431-8101 • Fax 602-431-2288 • E-mail sales@protek-tvs.com • Web www.protekdevices.com

ELECTRICAL CHARACTERISTICS @ 25° C Ambient Temperature

PROTEK PART NUMBER (See Note 1)	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1 mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ I_P = 10 A V_C VOLTS	MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D µA	MAXIMUM CAPACITANCE @ 0V, 1 MHz C pF
VSB06P05LCI	5.0	6.0	12.5	300	25
VSB06P6.5LCI	6.5	7.2	11.6	300	25
VSB06P12LCI	12.0	13.3	18.8	2.0	25

Note 1: Do not surge from pins 2 to 1, 1 to 3 or 4 to 6, 6 to 5. PIV typically greater than 100 Volts for each rectifier diode.

FIGURE 1
PEAK PULSE POWER VS. PULSE TIME



VSB06 PACKAGE OUTLINE

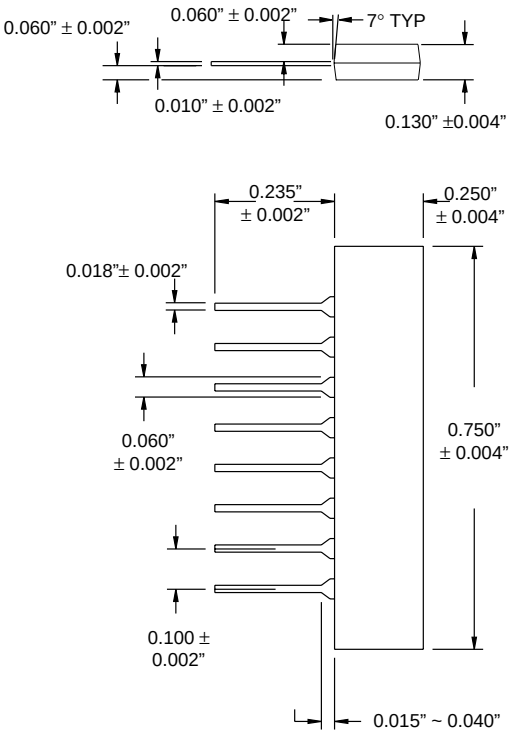


FIGURE 2
PULSE WAVE FORM

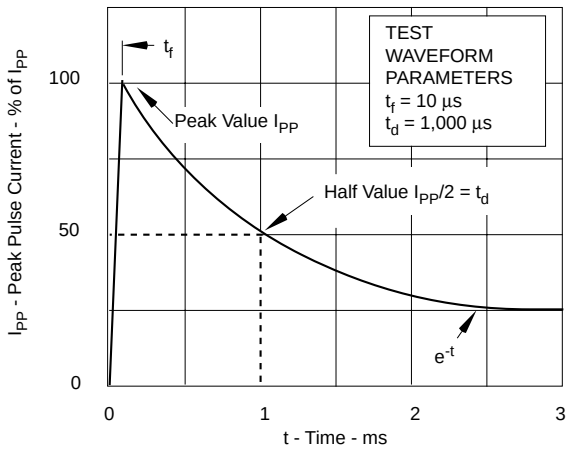


FIGURE 3
POWER DERATING CURVE