HIGH POWERED MULTI-LINE VSIP® TVS ARRAY

10 PIN VSIP® PACKAGE

DESCRIPTION

The VSIP Series are high powered multi-line TVS arrays available in a 10 pin VSIP package. This series is designed to protect telecommunications equipment from the damaging effects of ESD, EFT and secondary transient threats.

The VSIP Series "A" has a peak pulse power rating of 800 Watts for an 8/20µs waveshape and the VSIP Series "B" has a peak pulse power rating of 3400 Watts for an 8/20µs waveshape. These devices meets the IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 requirements.

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, 8/20µs - Level 2(Line-Gnd) & Level 3(Line-Line)
- Series "A" - 800 Watts Peak Pulse Power per Line (tp = 8/20µs)
- Series "B" - 3400 Watts Peak Pulse Power per Line (tp = 8/20µs)
- Bidirectional Configuration
- ESD Protection > 25 kilovolts
- High Surge Capability & Low Capacitance Option
- Available in Multiple Voltages
- Protects 8 to 9 Bidirectional Lines
- RoHS Compliant
- REACH Compliant

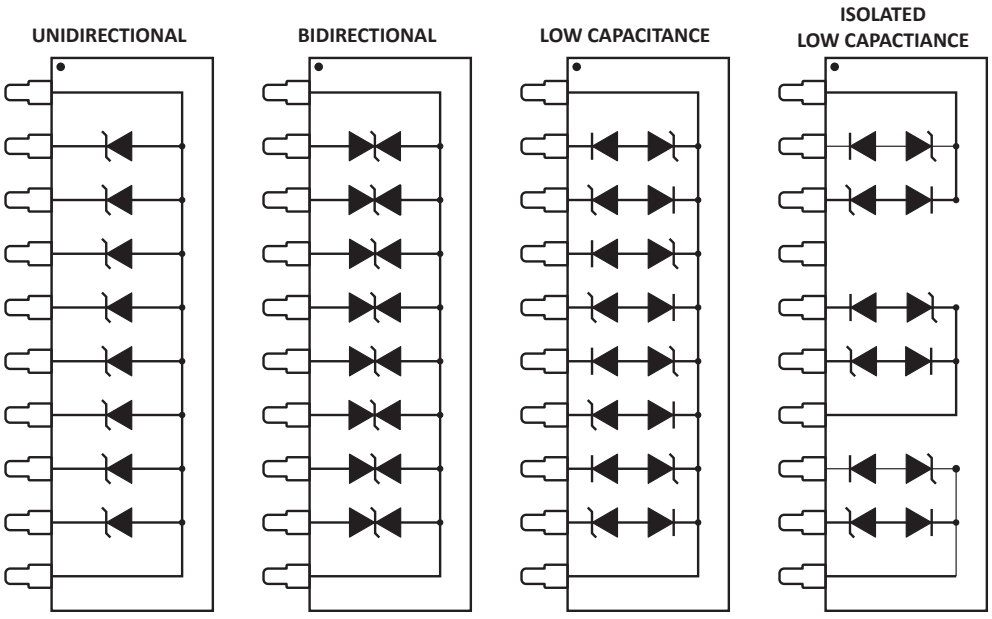
APPLICATIONS

- RS-232 & RS-423 Data Lines
- Telecommunications T/R Protection: ISDN, xDSL, V.34/V.90, HDLC, T1/E1 & T3/E3
- Low & High Speed Data Lines: Ethernet & Token Ring
- I/O Port Protection

MECHANICAL CHARACTERISTICS

- Molded 10 Pin Plastic VSIP® Package
- Approximate Weight: 1.5 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- Flammability Rating UL 94V-0

PIN CONFIGURATIONS



TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Series "A" Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	800	Watts
Series "B" Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	3400	Watts
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

SERIES "A" ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1-4)	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) @ IP = 10A V_C VOLTS	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	MAXIMUM PEAK PULSE CURRENT (Fig. 2) I_{PP} amps
VS10P05	5.0	6.0	9.8	12.5	100	45
VS10P05C	5.0	6.0	9.8	12.5	100	45
VS10P05LC	5.0	6.0	9.8	12.5	100	45
VS10P05LCI	5.0	6.0	9.8	12.5	100	45
VS10P08	8.0	8.5	13.4	16.6	10	40
VS10P08C	8.0	8.5	13.4	16.6	10	40
VS10P08LC	8.0	8.5	13.4	16.6	10	40
VS10P08LCI	8.0	8.5	13.4	16.6	10	40
VS10P12	12.0	13.3	19.5	22.7	1	34
VS10P12C	12.0	13.3	19.5	22.7	1	34
VS10P12LC	12.0	13.3	19.5	22.7	1	34
VS10P12LCI	12.0	13.3	19.5	22.7	1	34
VS10P15	15.0	16.7	24.4	28.5	1	27
VS10P15C	15.0	16.7	24.4	28.5	1	27
VS10P15LC	15.0	16.7	24.4	28.5	1	27
VS10P15CLI	15.0	16.7	24.4	28.5	1	27
VS10P24	24.0	26.7	39.1	45.6	1	22
VS10P24C	24.0	26.7	39.1	45.6	1	22
VS10P24LC	24.0	26.7	39.1	45.6	1	22
VS10P24LCI	24.0	26.7	39.1	45.6	1	22

NOTES
1. The "C" suffix denotes a bidirectional device, such as VS10P5**C**.
2. Forward voltage (Unidirectional Configurations Only): V_F = 1.5V @ 200mA.
3. The "LC" suffix denotes a low capacitance device, such as VS10P05**LC**. These devices have a capacitance of 25pF.
4. The "LCI" suffix denotes an isolated low capacitance device, such as VS10P05LCI.

TYPICAL DEVICE CHARACTERISTICS

SERIES "B" ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1-4)	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) @ IP = 10A V_C VOLTS	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	MAXIMUM PEAK PULSE CURRENT (Fig. 2) I_{PP} amps
VSB10P05	5.0	6.0	8.6	9.1	300	300
VSB10P05C	5.0	6.0	8.6	9.1	300	300
VSB10P05LC	5.0	6.0	8.6	9.1	300	300
VSB10P05LCI	5.0	6.0	8.6	9.1	300	300
VSB10P08	8.0	8.5	10.9	12.0	200	258
VSB10P08C	8.0	8.5	10.9	12.0	200	258
VSB10P08LC	8.0	8.5	10.9	12.0	200	258
VSB10P08LCI	8.0	8.5	10.9	12.0	200	258
VSB10P12	12.0	13.3	17.0	18.8	2	184
VSB10P12C	12.0	13.3	17.0	18.8	2	184
VSB10P12LC	12.0	13.3	17.0	18.8	2	184
VSB10P12LCI	12.0	13.3	17.0	18.8	2	184
VSB10P15	15.0	16.7	21.4	23.6	2	147
VSB10P15C	15.0	16.7	21.4	23.6	2	147
VSB10P15LC	15.0	16.7	21.4	23.6	2	147
VSB10P15CLI	15.0	16.7	21.4	23.6	2	147
VSB10P24	24.0	26.7	34.2	37.8	2	111
VSB10P24C	24.0	26.7	34.2	37.8	2	111
VSB10P24LC	24.0	26.7	34.2	37.8	2	111
VSB10P24LCI	24.0	26.7	34.2	37.8	2	111
VSB10P28	28.0	31.1	39.8	40.0	2	93
VSB10P28	28.0	31.1	39.8	40.0	2	93
VSB10P28	28.0	31.1	39.8	40.0	2	93
VSB10P28	28.0	31.1	39.8	40.0	2	93
VSB10P33	33.0	36.7	47.0	51.9	2	83
VSB10P33	33.0	36.7	47.0	51.9	2	83
VSB10P33	33.0	36.7	47.0	51.9	2	83
VSB10P33	33.0	36.7	47.0	51.9	2	83
VSB10P36	36.0	40.0	51.2	56.6	2	68
VSB10P36	36.0	40.0	51.2	56.6	2	68
VSB10P36	36.0	40.0	51.2	56.6	2	68
VSB10P36	36.0	40.0	51.2	56.6	2	68

NOTES

1. The "C" suffix denotes a bidirectional device, such as VSB10P5**C**.
2. Forward voltage (Unidirectional Configurations Only): V_F = 1.5V @ 200mA.
3. The "LC" suffix denotes a low capacitance device, such as VSB10P05**LC**. These devices have a capacitance of 100pF.
4. The "LCI" suffix denotes an isolated low capacitance device, such as VSB10P05LCI.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

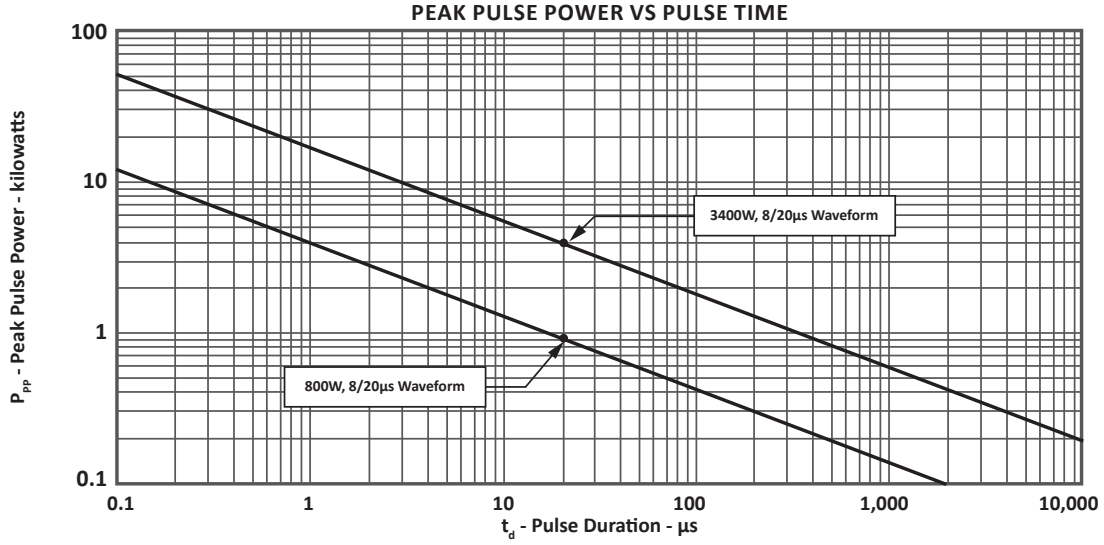
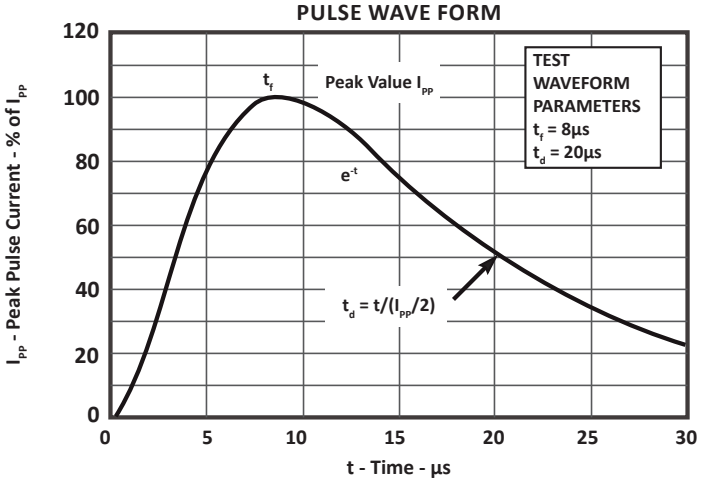


FIGURE 2
PULSE WAVE FORM



TYPICAL DEVICE CHARACTERISTICS

FIGURE 3
POWER DERATING CURVE

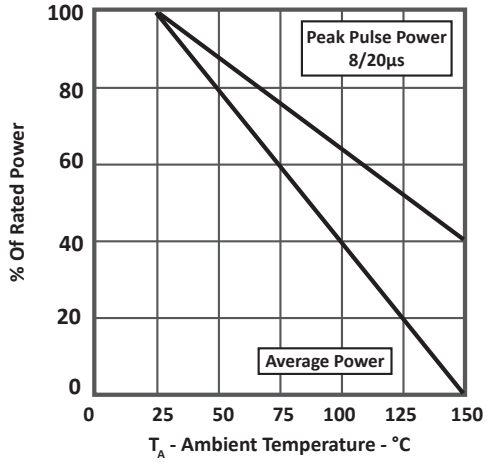
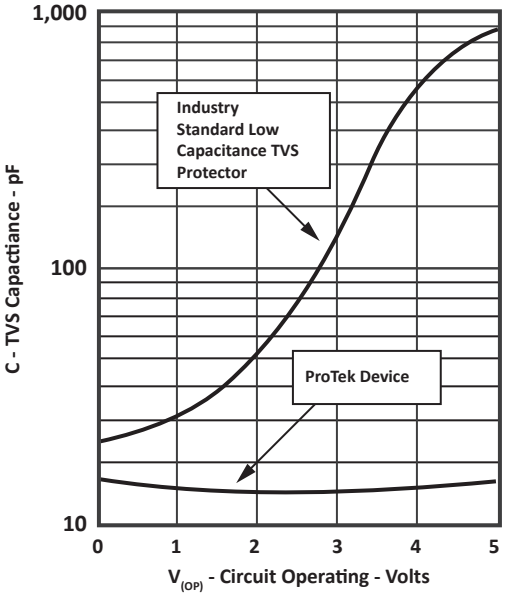


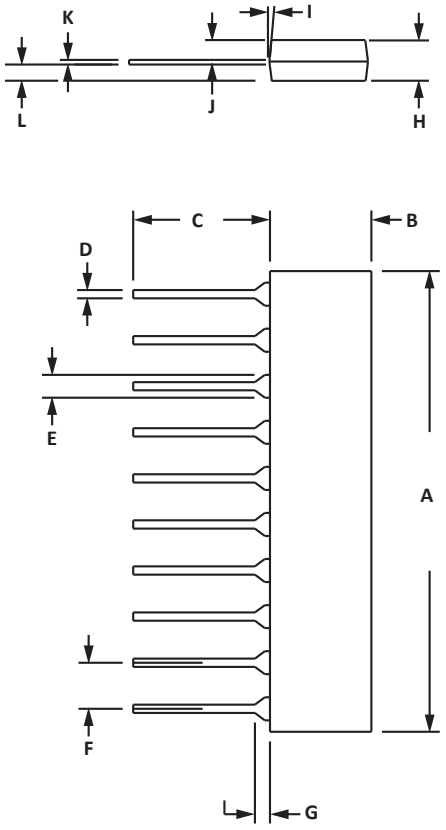
FIGURE 4
TYPICAL LOW CAPACITANCE CURVE



10 PIN VSIP PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	25.65	26.01	1.01	1.024
B	5.68	6.45	0.244	0.254
C	5.92	6.73	0.233	0.265
D	0.406	0.508	0.016	0.020
E	1.27	1.65	0.05	0.065
F	2.49	2.59	0.098	0.102
G	0.38	1.40	0.015	0.055
H	2.65	3.17	0.104	0.125
I	7° TYP	7° TYP	7° TYP	7° TYP
J	1.47	1.98	0.058	0.078
K	0.20	0.30	0.008	0.012
L	0.81	1.57	0.032	0.062

NOTES
1. Dimensions are exclusive of mold flash and metal burrs.
2. Controlling dimensions in inches.



ORDERING INFORMATION					
BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
VS10Pxx/VSB10Pxx	-LF	n/a	n/a	n/a	18
VS10PxxC/VSB10PxxC	-LF	n/a	n/a	n/a	18
VS10PxxLC/VSB10PxxLC	-LF	n/a	n/a	n/a	18
VS10PxxLCI/VSB10PxxLCI	-LF	n/a	n/a	n/a	18

NOTES
1. Marking on Part - logo, part number, date code and pin one defined by dot on top of package.
2. This device available only in a lead-free configuration.

Package outline per document number 06017.R2 9/09

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 years, ProTek Devices™ is a privately-held company located in Tempe, Arizona, that offers a product line of transient voltage suppressors (TVS); avalanche breakdown diodes; steering diode TVS arrays and other surge suppressor component products. These TVS devices protect electronic systems from the effects of lightning, electrostatic discharge (ESD), nuclear electromagnetic pulses (NEMP), inductive switching and EMI / RFI. ProTek Devices also offers high performance interface and linear products that include analog switches; multiplexers; LED drivers; audio control ICs; RF and related high frequency products. The analog devices work in a host of consumer; industrial; automotive and other applications.

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