

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 meet 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

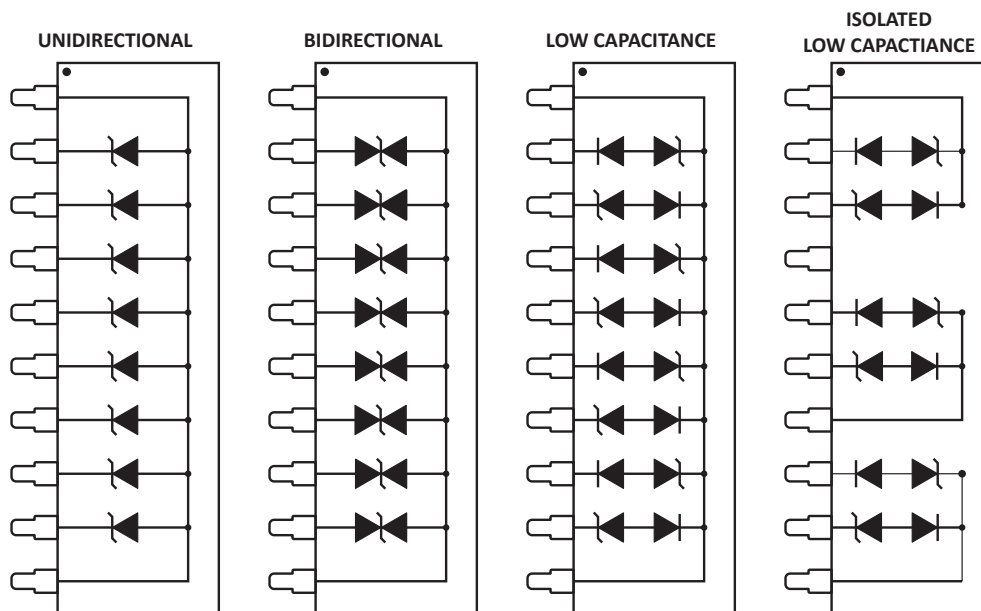
APPLICATIONS

- 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
VS10P15LCI	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 VS10P5C.
2. Forward voltage (Unidirectional Configurations Only): V_f = 1.5V @ 200mA.
3. The "LC" suffix denotes a low capacitance device, such as VS10P05LC. 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
VSBI0P05	5.0	6.0	8.6	9.1	300	300
VSBI0P05C	5.0	6.0	8.6	9.1	300	300
VSBI0P05LC	5.0	6.0	8.6	9.1	300	300
VSBI0P05LCI	5.0	6.0	8.6	9.1	300	300
VSBI0P08	8.0	8.5	10.9	12.0	200	258
VSBI0P08C	8.0	8.5	10.9	12.0	200	258
VSBI0P08LC	8.0	8.5	10.9	12.0	200	258
VSBI0P08LCI	8.0	8.5	10.9	12.0	200	258
VSBI0P12	12.0	13.3	17.0	18.8	2	184
VSBI0P12C	12.0	13.3	17.0	18.8	2	184
VSBI0P12LC	12.0	13.3	17.0	18.8	2	184
VSBI0P12LCI	12.0	13.3	17.0	18.8	2	184
VSBI0P15	15.0	16.7	21.4	23.6	2	147
VSBI0P15C	15.0	16.7	21.4	23.6	2	147
VSBI0P15LC	15.0	16.7	21.4	23.6	2	147
VSBI0P15LCI	15.0	16.7	21.4	23.6	2	147
VSBI0P24	24.0	26.7	34.2	37.8	2	111
VSBI0P24C	24.0	26.7	34.2	37.8	2	111
VSBI0P24LC	24.0	26.7	34.2	37.8	2	111
VSBI0P24LCI	24.0	26.7	34.2	37.8	2	111
VSBI0P28	28.0	31.1	39.8	44.0	2	93
VSBI0P28C	28.0	31.1	39.8	44.0	2	93
VSBI0P28LC	28.0	31.1	39.8	44.0	2	93
VSBI0P28LCI	28.0	31.1	39.8	44.0	2	93
VSBI0P33	33.0	36.7	47.0	51.9	2	83
VSBI0P33C	33.0	36.7	47.0	51.9	2	83
VSBI0P33LC	33.0	36.7	47.0	51.9	2	83
VSBI0P33LCI	33.0	36.7	47.0	51.9	2	83
VSBI0P36	36.0	40.0	51.2	56.6	2	68
VSBI0P36C	36.0	40.0	51.2	56.6	2	68
VSBI0P36LC	36.0	40.0	51.2	56.6	2	68
VSBI0P36LCI	36.0	40.0	51.2	56.6	2	68

NOTES

1. The "C" suffix denotes a bidirectional device, such as VSBI0P5C.
2. Forward voltage (Unidirectional Configurations Only): $V_F = 1.5V @ 200mA$.
3. The "LC" suffix denotes a low capacitance device, such as VSBI0P05LC. These devices have a capacitance of 100pF.
4. The "LCI" suffix denotes an isolated low capacitance device, such as VSBI0P05LCI.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

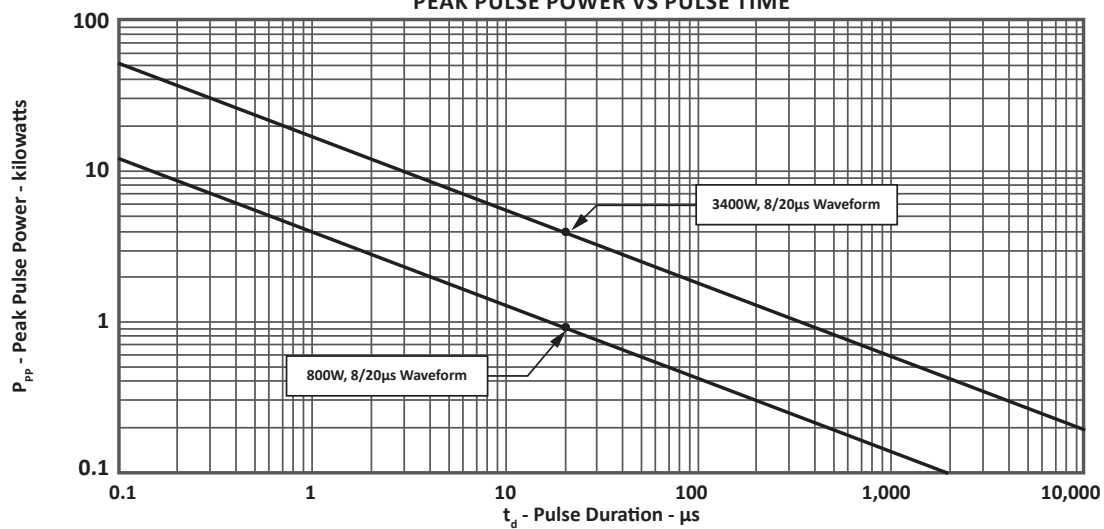
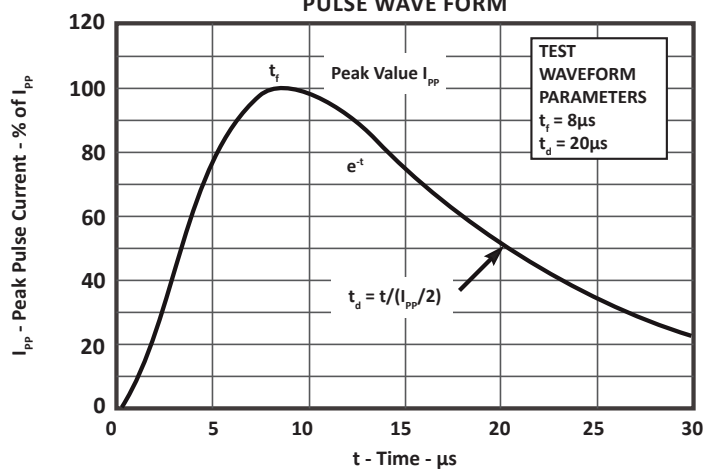
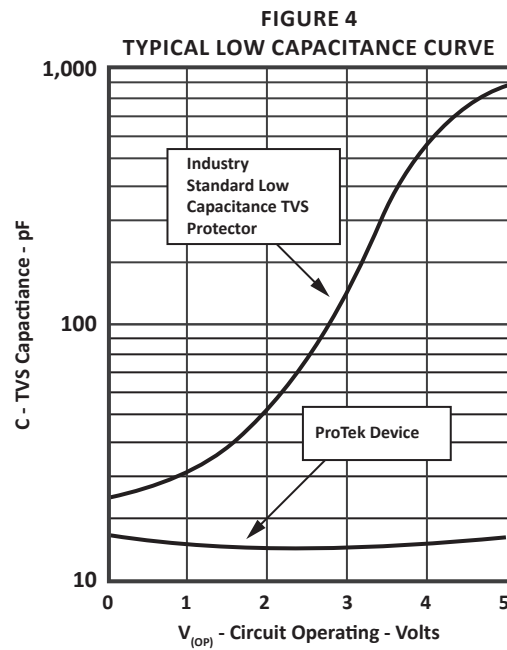
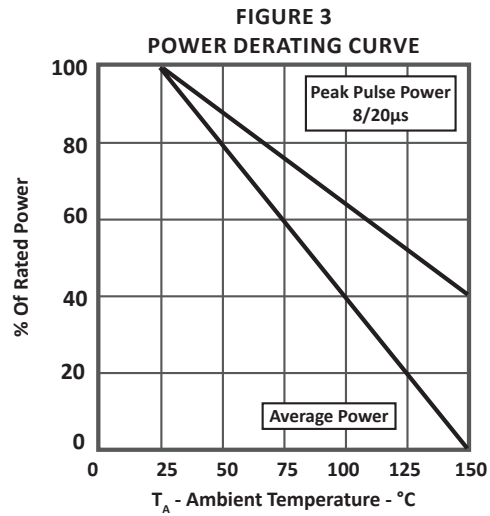


FIGURE 2
PULSE WAVE FORM



TYPICAL DEVICE CHARACTERISTICS

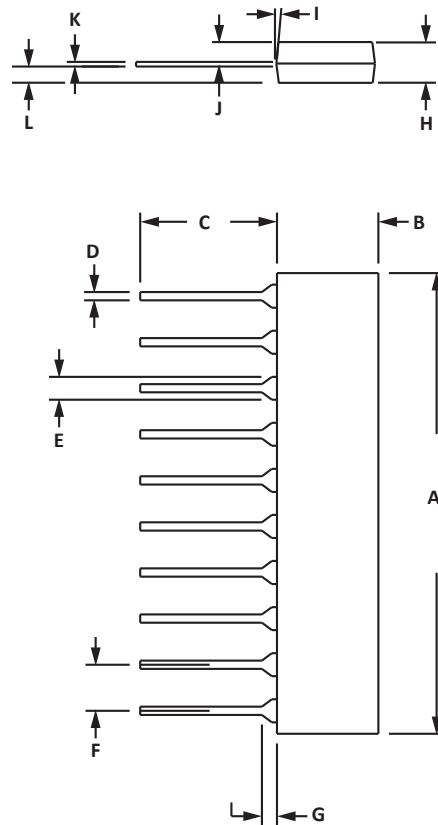


10 PIN VSIP PACKAGE INFORMATION
OUTLINE DIMENSIONS

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

- Dimensions are exclusive of mold flash and metal burrs.
- Controlling dimensions in inches.


ORDERING INFORMATION

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

NOTES

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

Package outline per document number 06016.R2 9/09

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 high performance interface and linear products. They include analog switches; multiplexers; LED drivers; LED wafer die for ESD protection; audio control ICs; RF and related high frequency products.

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