

VSIP® TVS ARRAY

APPLICATIONS

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

IEC COMPATIBILITY (EN61000-4)

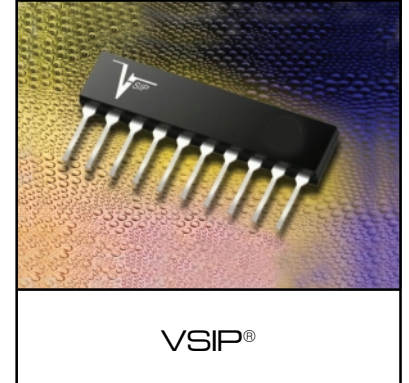
- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns
- ✓ 61000-4-5 (Surge): 24A, 8/20µs - Level 2(Line-Gnd) & Level 3(Line-Line)

FEATURES

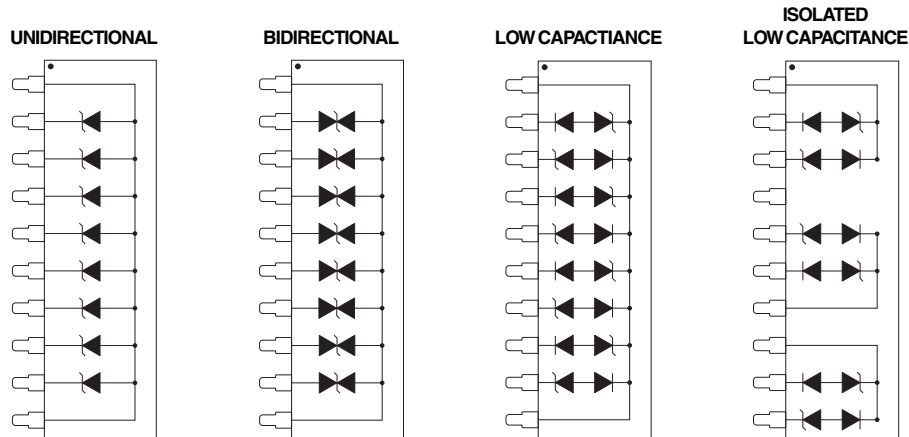
- ✓ Series A: 800 Watts Peak Pulse Power per Line (tp=8/20µs)
- ✓ Series B: 3,400 Watts Peak Pulse Power per Line (tp=8/20µs)
- ✓ ESD Protection > 40 kilovolts
- ✓ High Surge Capability & Low Capacitance Option
- ✓ Protects 8 to 9 Bidirectional Data Lines
- ✓ Available in 5 Voltages Types Ranging from 5V to 24V

MECHANICAL CHARACTERISTICS

- ✓ Molded Plastic VSIP® Package
- ✓ Weight 1.5 grams (Approximate)
- ✓ Flammability rating UL 94V-0
- ✓ Marking: Logo, Part Number, Date Code & Pin One Defined By Dot on Top of Package



PIN CONFIGURATIONS



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Series A Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	800	Watts
Series B Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	3400	Watts
Operating Temperature	T_J	-55°C to 150°C	°C
Storage Temperature	T_{STG}	-55°C to 150°C	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

RATED STAND-OFF VOLTAGE (See Notes 1-3)	MINIMUM BREAKDOWN VOLTAGE @ 1mA V_{BR} VOLTS	SERIES A				SERIES B			
		MAXIMUM CLAMPING VOLTAGE (See Fig. 2)	MAXIMUM CLAMPING VOLTAGE (See Fig. 2)	MAXIMUM LEAKAGE CURRENT	MAXIMUM PEAK PULSE CURRENT (See Fig. 2)	MAXIMUM CLAMPING VOLTAGE (See Fig. 2)	MAXIMUM CLAMPING VOLTAGE (See Fig. 2)	MAXIMUM LEAKAGE CURRENT	MAXIMUM PEAK PULSE CURRENT (See Fig. 2)
V_{WM} VOLTS		@ $I_P = 1A$ V_C VOLTS	@ $I_P = 10A$ V_C VOLTS	@ V_{WM} I_D AMPS	I_{PP} AMPS	@ $I_P = 1A$ V_C VOLTS	@ $I_P = 10A$ V_C VOLTS	@ V_{WM} I_D AMPS	I_{PP} AMPS
5.0	6.0	9.8	12.5	100	45	8.6	9.1	300	300
8.0	8.5	13.4	16.6	10	40	10.9	12.0	200	258
12.0	13.3	19.5	22.7	1	34	17.0	18.8	2	184
15.0	16.7	24.4	28.5	1	27	21.4	23.6	2	147
24.0	26.7	39.1	45.6	1	22	34.2	37.8	2	93

Note 1: For voltage types not shown on the product data sheet, consult the factory.

Note 2: The low capacitance configuration values for each bidirectional line pair is as follows:

Series "A" C = 25pF Series "B" C = 100pF

Note 3: Forward voltage (*unidirectional configurations only*):

Series "A": $V_F = 1.5V$ @ 200mA Series "B": $V_F = 1.5V$ 200mA

STANDARD PRODUCT ORDERING BY PART NUMBER

Unidirectional - VS10Pxx (A Series), VSB10Pxx (B Series)

Bidirectional - VS10PxxC (A Series), VSB10PxxC (B Series)

Low Capacitance - VS10PxxLC (A Series), VSB10PxxLC (B Series)

Isolated Low Capacitance- VS10PxxLCI (A Series), VSB10PxxLCI (B Series)

xx = Selected Voltage

GRAPHS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

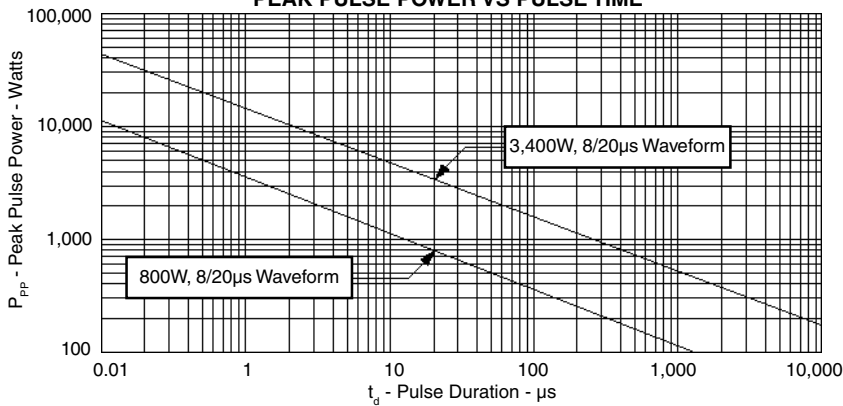


FIGURE 2
PULSE WAVE FORM

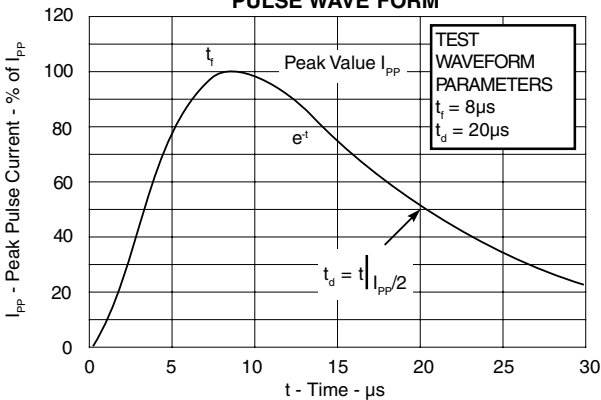


FIGURE 3
POWER DERATING CURVE

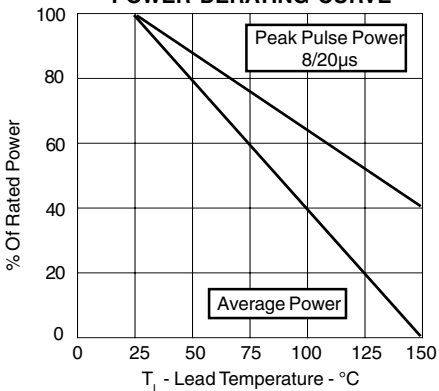
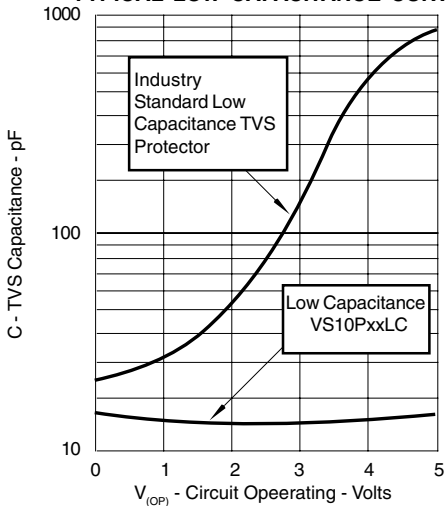
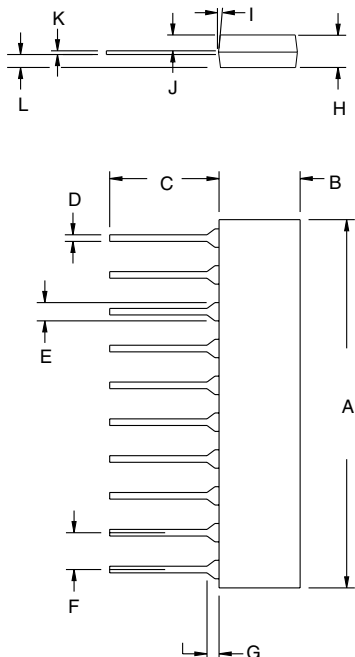


FIGURE 4
TYPICAL LOW CAPACITANCE CURVE

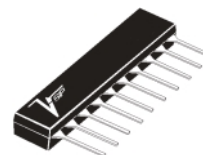


PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE



VSIP® PACKAGE



VSIP DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	25.81	26.01	1.016	1.024
B	6.25	6.45	0.246	0.254
C	5.92	6.02	0.233	0.237
D	0.406	0.508	0.016	0.020
E	1.47	1.57	0.058	0.062
F	2.49	2.59	0.098	0.102
G	0.38	1.02	0.015	0.040
H	3.20	3.40	0.126	0.134
I	7° TYP	7° TYP	7° TYP	7° TYP
J	1.47	1.57	0.058	0.062
K	0.20	0.30	0.008	0.012
L	1.47	1.57	0.058	0.062

NOTES

1. Dimensions are exclusive of mold flash and metal burrs.

BULK ORDERING NOMENCLATURE

1. Product Shipped in Tubes of 18 pcs per Tube.

Outline & Dimensions: Rev 1 - 11/01, 06016

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