

HIGH POWER TELCOM TVS DIODE ARRAY
APPLICATIONS

- RS-422, RS-423 & RS-485 Data Lines
- SCSI Bus Lines
- Board Level Interface Protection
- Industrial & Instrumentation
- Portable Electronics
- Power Supplies

FEATURES

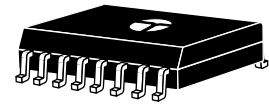
- IEC 1000-4-2, -4 & -5 Industry Requirements
- 600 Watts Peak Pulse Power Dissipation per Line (10/1000 μ s)
- ESD Protection > 40 kilovolts
- Low Clamping Voltage
- Available in 11 Voltage Types Ranging from 5.0V to 58V
- Unidirectional & Bidirectional Configurations
- Four (4) TVS Devices per Package
- UL 94V-0 Flammability Classification

DESCRIPTION

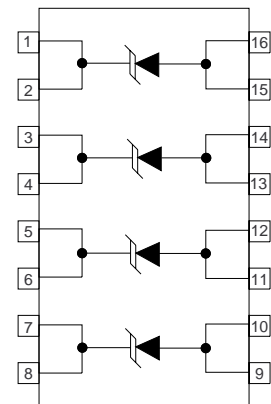
The SM16P6K series are four line, surface mount, silicon transient voltage suppressor (TVS) arrays designed for multiple power and data line applications. This series provides protection against ESD, EFT, secondary lightning, and switching transients in accordance with IEC 1000-4-2, -4, -5 and European standard EN50082 and EN61000-4. This device was designed to replace four P6KE devices in a single package with 600 Watts per line. In addition, there is complete isolation between devices to reduce cross talk or noise interference.

The SM16P6K series is available in a standard SO-16 surface mount package with a peak pulse power rating (P_{PP}) of 600 Watts per line for an 10/1000 μ s waveshape.

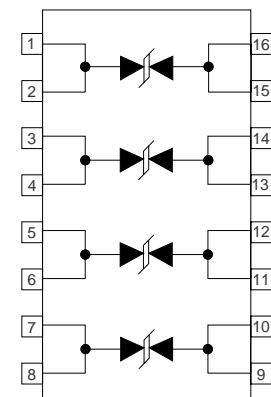
MAXIMUM RATINGS	
P_{PP} @ 25°C (See Figure 1)	600 Watts per Line, 10/1000 μ s Waveshape
Forward Surge Rating	100A, 1/120 seconds at 25°C (Unidirectional Only)
Operating & Storage Temperature	-55° to +150°C
Repetition Rate (Duty Cycle)	0.01%
$t_{Clamping}$ (0 Volts to $V_{(BR)}$ Min.)	Unidirectional: < 1×10^{-12} seconds Bidirectional: < 10×10^{-9} seconds
MECHANICAL CHARACTERISTICS	
Package	Molded SO-16 Surface Mount Package
Packaging	Tube or 16mm Tape per EIA 481
Approximate Weight	0.15 grams
Device Markings	Logo & Part Number
Miscellaneous	Pin No. 1 Indicated by Dot on Top of Package

IEC 1000-4 COMPATIBLE

SO-16 PACKAGE
CIRCUIT DIAGRAMS
UNIDIRECTIONAL

SM16P6K05A	SM16P6K28A
SM16P6K08A	SM16P6K33A
SM16P6K12A	SM16P6K36A
SM16P6K15A	SM16P6K48A
SM16P6K18A	SM16P6K58A
SM16P6K24A	


BIDIRECTIONAL

SM16P6K05CA	SM16P6K28CA
SM16P6K08CA	SM16P6K33CA
SM16P6K12CA	SM16P6K36CA
SM16P6K15CA	SM16P6K48CA
SM16P6K18CA	SM16P6K58CA
SM16P6K24CA	

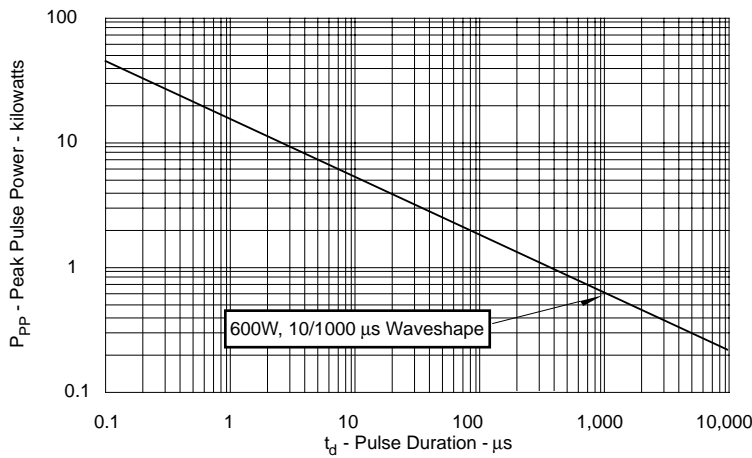


ELECTRICAL CHARACTERISTICS @ 25° C Ambient Temperature

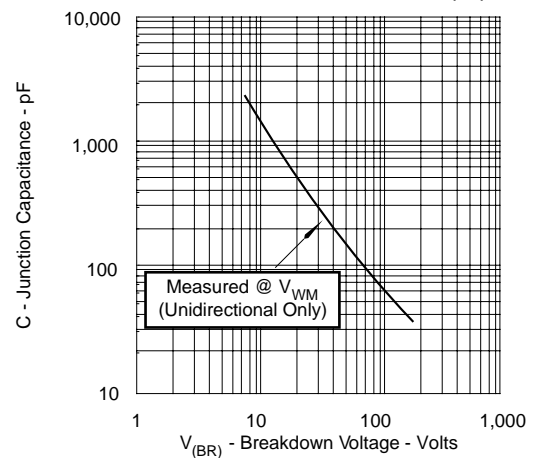
PROTEK PART NUMBER (See Note 1)	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1 mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 3) @ $I_p = 1 A$ V_C VOLTS	MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA	MAXIMUM PEAK PULSE CURRENT (See Fig. 3) @ I_{PP} I_{PPM} AMPS	TEMPERATURE COEFFICIENT OF $V_{(BR)}$ $\Theta V_{(BR)}$ mV/°C
SM16P6K05A	5.0	6.4	9.2	800	65	5
SM16P6K08A	8.0	8.9	13.6	50	44	7
SM16P6K12A	12.0	13.3	19.9	5	30	12
SM16P6K15A	15.0	16.7	24.4	5	24	16
SM16P6K18A	18.0	20.0	29.2	5	21	20
SM16P6K24A	24.0	26.7	38.9	5	15	28
SM16P6K28A	28.0	31.1	45.4	5	13	31
SM16P6K33A	33.0	36.7	53.3	5	11	39
SM16P6K36A	36.0	40.0	58.1	5	10	41
SM16P6K48A	48.0	53.3	77.4	5	7.7	56
SM16P6K58A	58.0	64.4	93.6	5	6.4	70

Note 1: Part numbers shown are for unidirectional devices. Add a "CA" suffix to specify bidirectional devices, such as SM16P6K05CA.

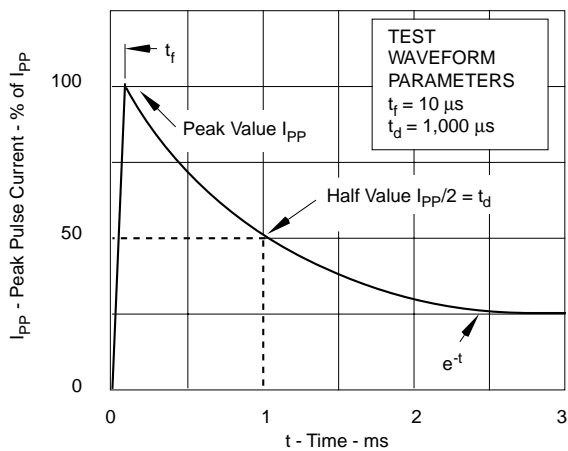
**FIGURE 1
PEAK PULSE POWER VS PULSE TIME**



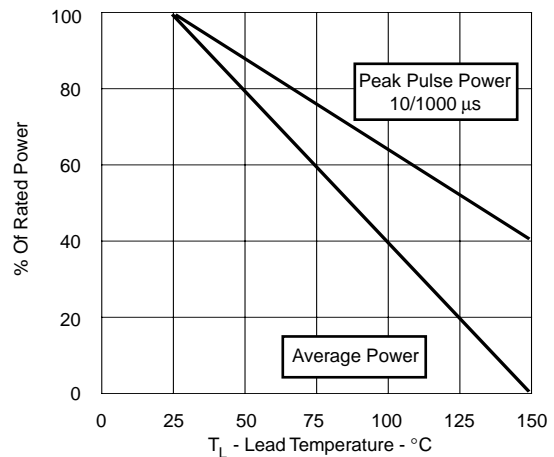
**FIGURE 2
TYPICAL CAPACITANCE vs $V_{(BR)}$**



**FIGURE 3
PULSE WAVE FORM**



**FIGURE 4
POWER DERATING CURVE**



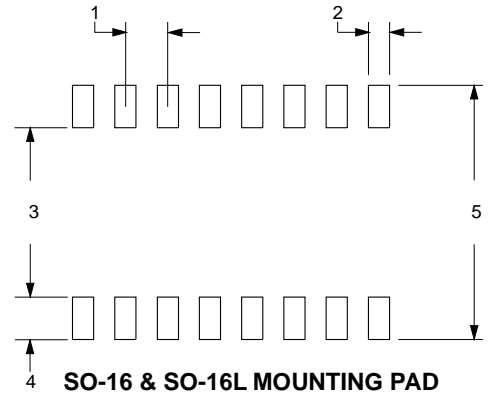
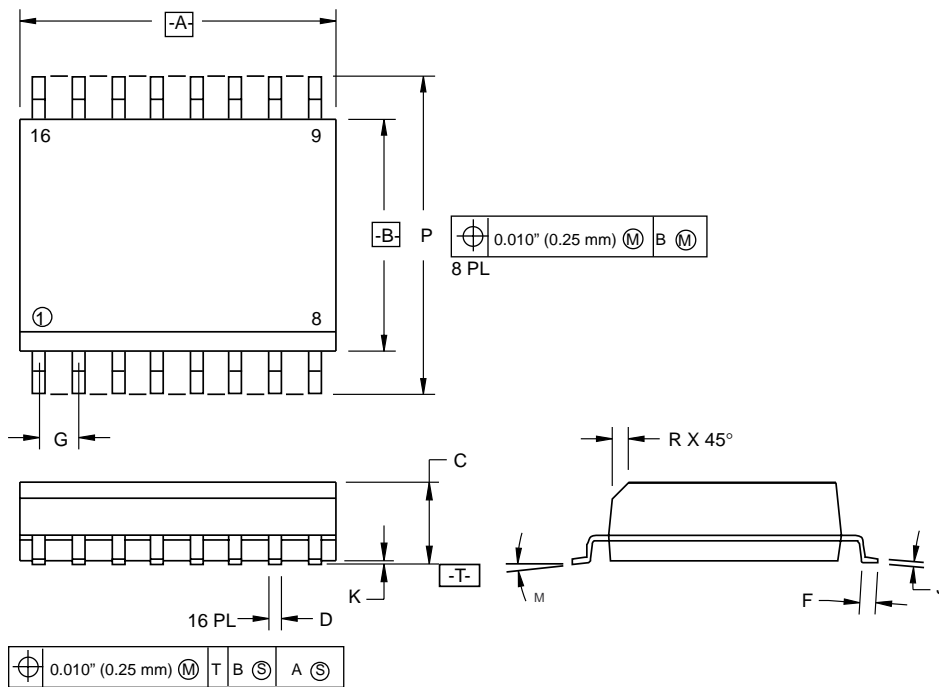
SO-16 PACKAGE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.80	10.00	0.386	0.393
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC	1.27 BSC	0.05 BSC	0.05 BSC
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

NOTES:

- T - = Seating Plane
- Dimension "A" is Datum
- Dimension "A" and "B" do not include mold protusion.
- Dimensioning and tolerances per ANSI Y14.5M, 1982.

SO-16 & SO-16L PACKAGE OUTLINE



DIM	MOUNTING PAD	
	SO-16	SO-16L
1	0.050" TYP	0.050 TYP
2	0.030" ± 0.005"	0.030" ± 0.005"
3	0.160" ± 0.005"	0.325" ± 0.005"
4	0.045" ± 0.005"	0.045" ± 0.005"
5	0.245" MIN	0.420" MIN