UNIDIRECTIONAL MONOLITHIC TVS DIODE ARRAY

APPLICATIONS

- **Multiple I/O Port Protection**
- **Board Level Interface Connections**
- **RS-232, RS-422 & RS-423 Data Lines**
- **Portable Electronics**

FEATURES

- **IEC 1000-4-2 & -4 Industry Requirements**
- **175 Watts Peak Pulse Power Dissipation per Line (8/20 μs)**
- **ESD Protection > 40 kilovolts**
- **Protects 5.0 Volt IC Components**
- **Standard SO-20L Package**
- **Low Clamping Voltage**
- **Unidirectional Monolithic Design**
- **UL 94V-0 Flammability Classification**

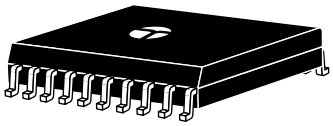
DESCRIPTION

The TMDA05-18 is a unidirectional eighteen (18) line monolithic, silicon transient voltage suppressor (TVS) array designed for power or data line applications. This device is designed to provide protection against ESD, tertiary lightning, and switching transients at the printed circuit board level. The TMDA05-18 protects against the electromagnetic compatibility (EMC) transient immunity standards IEC 1000-4-2, -4 and European standard EN50082 and EN61000-4.

The TMDA05-18 has a peak pulse power rating (P_{PP}) of 175 Watts an 8/20 μs waveshape. This device is offered in a standard TSSOP package in a unidirectional configuration.

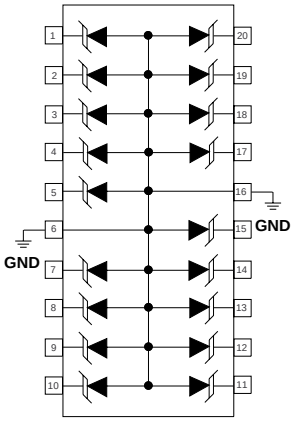
MAXIMUM RATINGS	
P_{PP} @ 25°C (See Figure 1)	175 Watts, 8/20 μs Waveshape
Operating & Storage Temperature	-55° to +150°C
Repetition Rate (Duty Cycle)	0.01%
$t_{Clamping}$ (0 Volts to $V_{(BR)}$ Min.)	Unidirectional: < 1 x 10^{-12} seconds
MECHANICAL CHARACTERISTICS	
Package	Molded TSSOP Surface Mount Package
Packaging	Tube or 24mm Tape per EIA 481
Common Ground Pins	6 & 16
Approximate Weight	0.6 grams
Device Markings	Logo & Part Number
Miscellaneous	Pin No. 1 Indicated by Dot on Top of Package

IEC 1000-4 COMPATIBLE

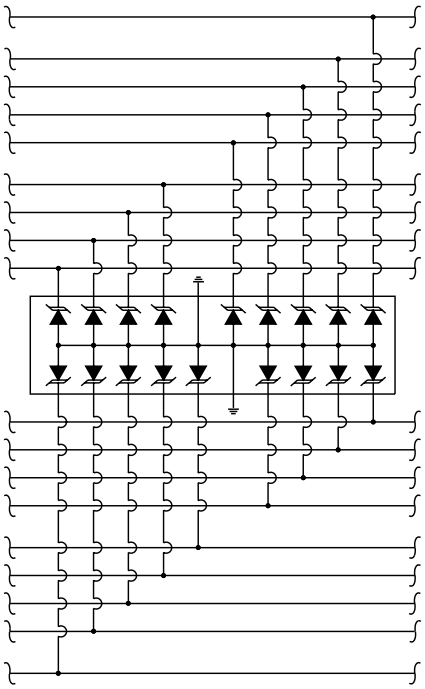


TSSOP PACKAGE

CIRCUIT DIAGRAM



DC DATALINE APPLICATION



ELECTRICAL CHARACTERISTICS @ 25° C Ambient Temperature							
PROTEK PART NUMBER	**RATED STAND-OFF VOLTAGE** V_{WM} **VOLTS**	**MINIMUM BREAKDOWN VOLTAGE** @ 1 mA $V_{(BR)}$ **VOLTS**	**MAXIMUM CLAMPING VOLTAGE (See Fig. 2)** @ I_P = 1 A V_C **VOLTS**	**MAXIMUM CLAMPING VOLTAGE (See Fig. 2)** @ I_P = 5 A V_C **VOLTS**	**MAXIMUM LEAKAGE CURRENT** @ V_{WM} I_D µA	**MAXIMUM FORWARD VOLTAGE** @ 200 MA V_F **VOLTS**	**TYPICAL CAPACITANCE** @ 0V, 1 MHz C **pF**
T0MDA05-18	5.0	6.0	9.8	11.0	20	1.25	120

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

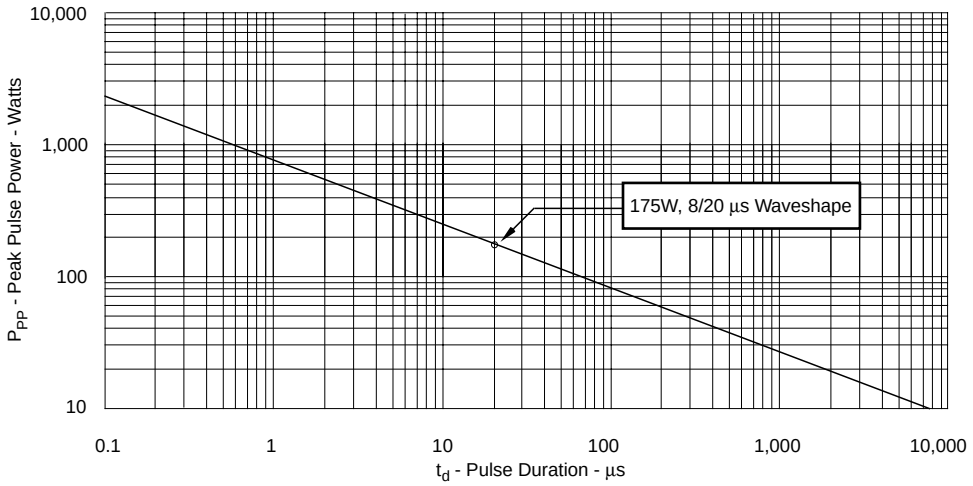


FIGURE 2
PULSE WAVE FORM

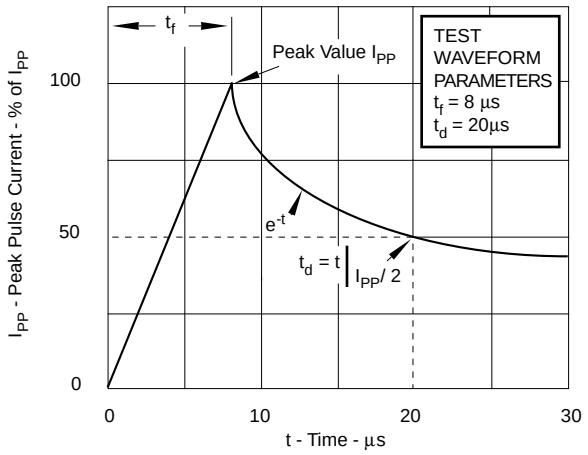
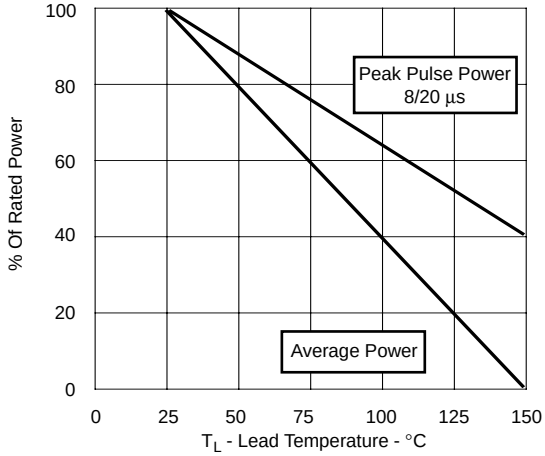


FIGURE 3
POWER DERATING CURVE



PACKAGE OUTLINE & DIMENSIONS

TSSOP PACKAGE DIMENSIONS				
	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	0.500	0.800	0.019	0.031
B	4.300	4.500	0.169	0.177
C	6.250	6.550	0.246	0.258
D	6.400	6.600	0.252	0.259
E	1.000	1.200	0.039	0.047
F	0.050	1.50	0.002	0.006
G	0.190	0.300	0.007	0.012
J	0.800	1.050	0.031	0.041
K	0°	6°	0°	6°
M	0.254	0.254	0.010	0.010
N	0.450	0.750	0.018	0.029
P	0.090	0.200	0.004	0.008

TSSOP 20 PIN PACKAGE OUTLINE