

APPLICATIONS

- RS-232 & RS-423 Data Lines
- Microprocessor Based Equipment
- Low Frequency I/O Ports
- Power Bus Lines
- Monitoring & Industrial Data Ports

FEATURES

- Meets IEC 1000-4-2, -4 & -5 Industry Requirements
- 500 Watts Peak Pulse Power Dissipation (8/20 μ s)
- Available in 4 Voltage Types Ranging from 5.0V to 24V
- ESD Protection > 40 kilovolts
- Standard Dual-in-Line Package
- Internal Common Ground
- UL 94V-0 Flammability Classification

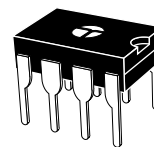
DESCRIPTION

This eight (8) pin diode array family is a series of silicon transient voltage suppressors (TVS) designed for use in applications where voltage transients such as ESD, EFT and tertiary lightning can permanently damage sensitive components or equipment. This device protects against the Electromagnetic Compatibility (EMC) transient immunity standards IEC 1000-4-2, -4, -5 and European standard EN50082.

This series has a peak pulse power (P_{PP}) rating of 500 Watts for an 8/20 μ s waveshape. Typically, the DA series can be used to protect a combination of 4 to 6 unidirectional or bidirectional lines with two ground pins per package for a low impedance ground connection.

MAXIMUM RATINGS	
P_{PP} @ 25°C (See Figure 1)	500 Watts, 8/20 μ s Waveshape
Forward Surge Rating	10A, 1/120 seconds @ 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 x 10 ⁻¹² seconds Bidirectional: < 10 x 10 ⁻⁹ seconds
MECHANICAL CHARACTERISTICS	
Package	Molded Plastic 8 Pin Dual-in-Line Package
Common Ground Pins	Pin Nos. 1 & 8
Approximate Weight	0.55 grams
Device Markings	Logo & Part Number
Miscellaneous	Pin No. 1 Indicated by Dot on Top of Package

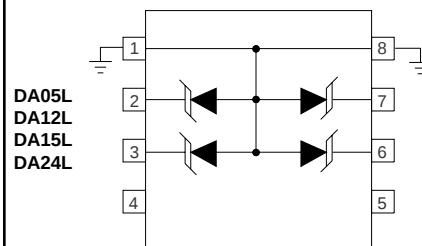
IEC 1000-4 COMPATIBLE



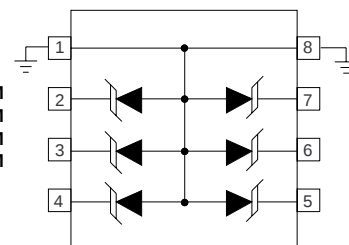
8 PIN PLASTIC DIP

CIRCUIT DIAGRAMS

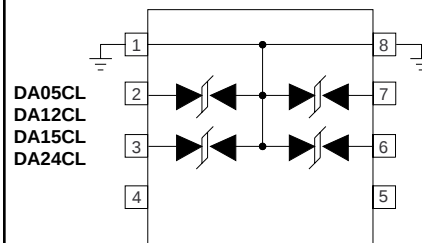
UNIDIRECTIONAL



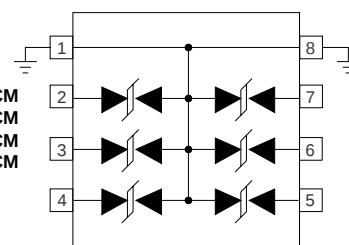
DA05M
DA12M
DA15M
DA24M



BIDIRECTIONAL



DA05CM
DA12CM
DA15CM
DA24CM



ELECTRICAL CHARACTERISTICS @ 25° C Ambient Temperature

PROTEK PART NUMBER (See Note 1)	UNIDIRECTIONAL					BIDIRECTIONAL				
	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE	MAXIMUM LEAKAGE CURRENT	MAXIMUM CAPACITANCE	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE	MAXIMUM LEAKAGE CURRENT	MAXIMUM CAPACITANCE
	(See Note 2) V_{WM} VOLTS	@ 1 mA $V_{(BR)}$ VOLTS	@ $I_P = 10$ A V_C VOLTS	@ V_{WM} I_D μA	@ 0V, 1 MHz C pF	(See Note 1) V_{WM} VOLTS	@ 1 mA $V_{(BR)}$ VOLTS	@ $I_P = 10$ A V_C VOLTS	@ V_{WM} I_D μA	@ 0V, 1 MHz C pF
See Circuit Diagram	5.0	6.0	12.5	200	880	5.0	6.0	12.5	200	500
	12.0	13.3	26.0	2	440	12.0	13.3	26.0	2	385
	15.0	16.7	33.0	2	400	15.0	16.7	33.0	2	300
	24.0	26.7	52.1	2	275	24.0	26.7	52.1	2	200

Note 1: For unidirectional devices only; $V_F = 1.5$ Volts @ 100mA, 300 μs (square wave).

Note 2: Use DA05L, DA05M, DA05CL, DA05CM for 5 Volt stand-off voltage, DA12L, DA12M, DA12CL, DA12CM for 12 Volt stand-off voltage, etc. . .

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

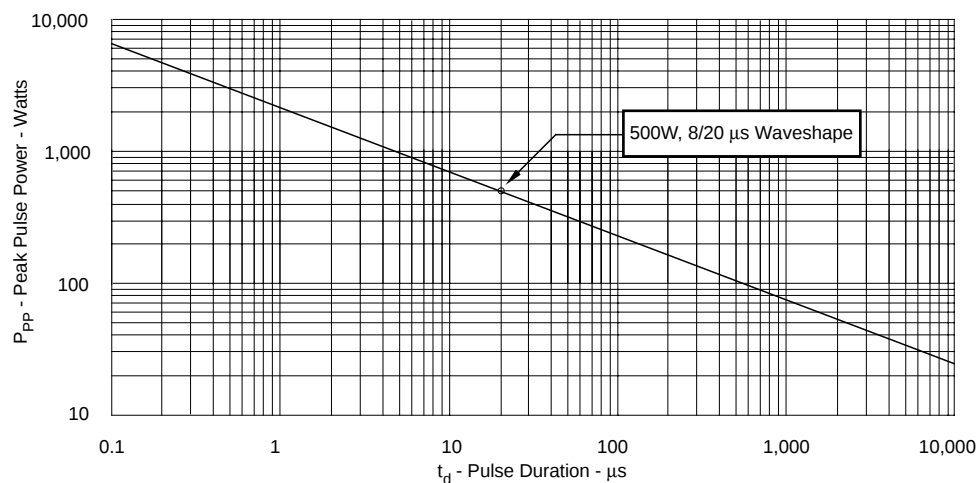


FIGURE 2
PULSE WAVE FORM

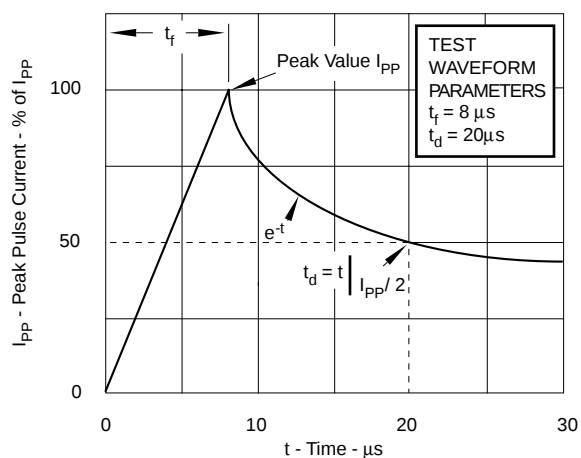
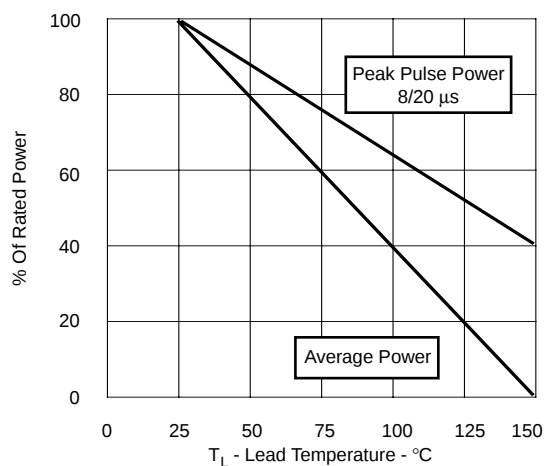


FIGURE 3
POWER DERATING CURVE



8 PIN PLASTIC DIP

