

3000W TVS ARRAY



DFN2020-3 PACKAGE

DESCRIPTION

The PTVSxxA Series are 3000 Watt, unidirectional transient voltage suppressor arrays designed for power applications. These devices are available in a DFN-2020-3 package.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 30kV, Contact 30kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge)
- 3000 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
- Protects 1 Data or Power Line
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

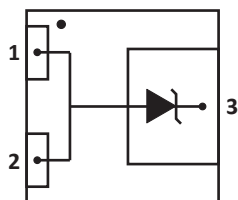
APPLICATIONS

- Power Supply Protection
- Industrial Applications
- Power Management

MECHANICAL CHARACTERISTICS

- Molded DFN2020-3 Package
- Lead-Free Plating: 100% Matte Sn(Tin)
- Solder Reflow Temperature - 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

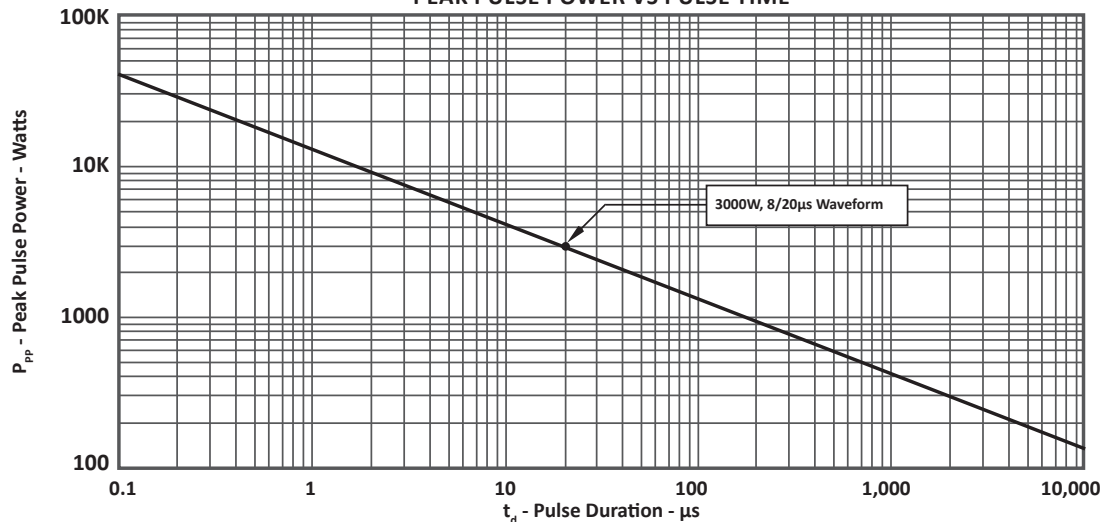
PARAMETER	SYMBOL	VALUE	UNITS
Storage Temperature	T_{STG}	-65 to 150	°C
Junction Temperature	T_J	-55 to 150	°C
Ambient Temperature	T_A	-55 to 150	°C
Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	3000	Watts
Peak Pulse Power ($t_p = 10/1000\mu s$) - See Figure 1	P_{PP}	300	Watts

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM CLAMPING VOLTAGE (Fig. 3)	MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D nA
				@ 8/20 μs $V_C @ I_{PP}$	@ 10/1000 μs $V_C @ I_{PP}$	
PTVS5.0A	5A	5.0	6.2	14.7V @ 204A	11.3V @ 26.7A	2000
PTVS7.0A	7A	7.0	8.0	19.0V @ 200A	12.9V @ 23.3A	1000
PTVS10A	10A	10.0	11.10	23.0V @ 148A	17.0V @ 17.6A	50
PTVS12A	12A	12.0	13.30	25.2V @ 131A	19.9V @ 15.1A	50
PTVS15A	15A	15.0	16.70	28.8V @ 111A	24.4V @ 12.3A	50
PTVS18A	18A	18.0	20.00	32.0V @ 97A	29.2V @ 10.3A	50
PTVS24A	24A	24.0	25.5	43.5V @ 69A	42.1V @ 7.0A	50

NOTE

1. Measured from pin 1 and 2 to pin 3.

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


TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

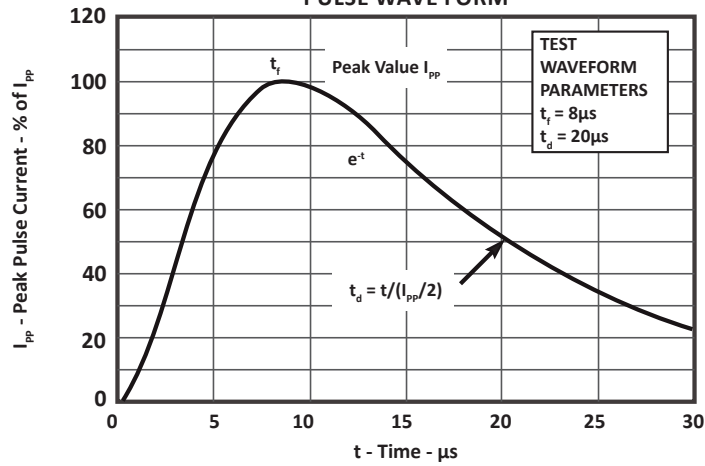


FIGURE 3
PULSE WAVEFORM

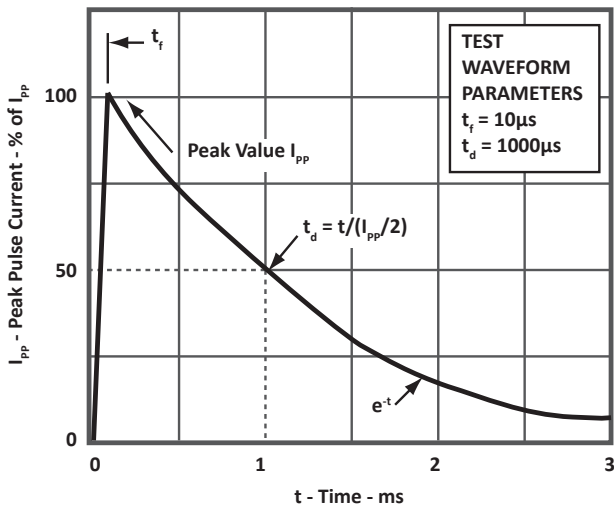
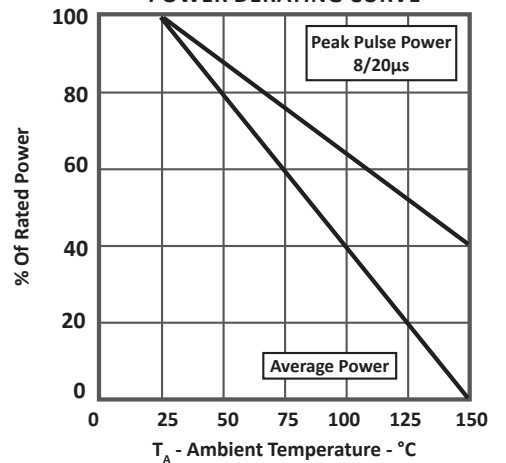


FIGURE 4
POWER DERATING CURVE



PACKAGE INFORMATION

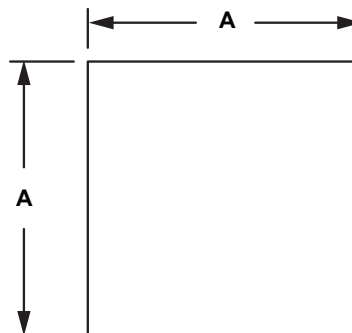
OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.90	2.10	0.075	0.083
B		0.65		0.026
C	0.25	0.35	0.010	0.014
D	0.35	0.45	0.014	0.018
E	1.30		0.051	
F	0.95	1.05	0.037	0.041
F1	0.90	1.10	0.035	0.043
G	0.20	0.30	0.008	0.012
H	1.40	1.60	0.056	0.063
K	0.30	0.35	0.012	0.014
L	0.15	0.20	0.006	0.008

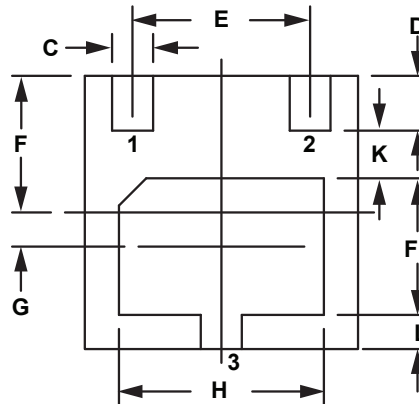
NOTES

1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: inches.

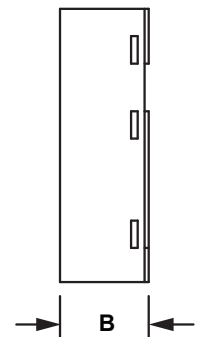
TOP VIEW



BOTTOM VIEW



SIDE VIEW

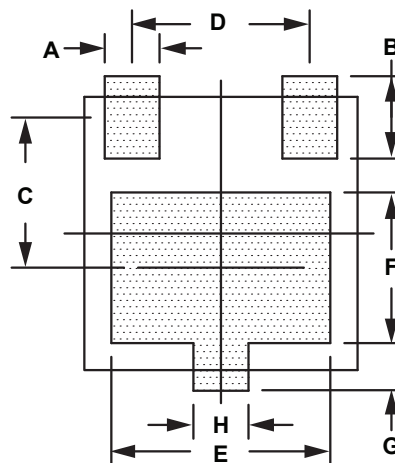


PAD LAYOUT DIMENSIONS

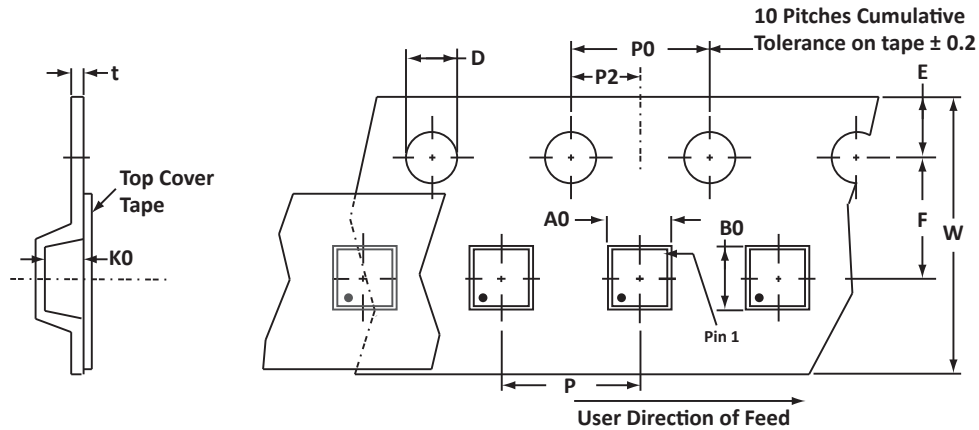
DIM	MILLIMETERS	INCHES
	NOM	NOM
A	0.40	0.016
B	0.50	0.020
C	1.05	0.041
D	1.30	0.051
E	1.60	0.063
F	1.10	0.043
G	0.25	0.010
H	0.40	0.016

NOTES

1. Decimal tolerances for mounting pad: $\pm 0.003''$ (± 0.08 mm).



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	2.20 ± 0.05	2.20 ± 0.05	0.8 ± 0.05	1.55 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.05	0.25

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T74 = 7" Reel - 4000 pieces per 8mm tape.
- Marking on Part - marking code and dot on package (see page 2).

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PTVSxxA	N/A	-T74	4,000	7"	N/A

This device is only available in a Lead-Free configuration.

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 LED wafer die for ESD protection and related high frequency products.

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