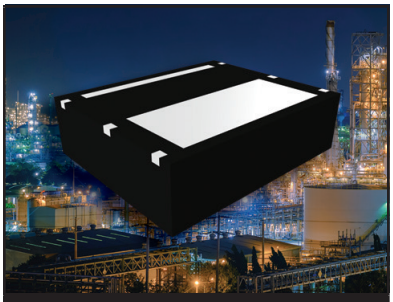
HYBRID TVS COMPONENT



DFN-2-KW

DESCRIPTION

The PHYTVSxxxV3 series is a patent pending hybrid state-of-the-art semiconductor technology intended for AC power transient protection. This series is designed to protect critical industrial and consumer applications, where a reliable overvoltage soluion with lower clamping voltage is required. The PHYTVSxxxV3 series technology is an ideal replacement for surface mount Metal Oxide Varistors (MOV), offering a more robust product in a small form factor that does not present a wear-out mechanism that is common with MOVs, thus extending signficantly its operation lifetime.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Level 4 Air ±15kV, Contact ±8kV
- Compatible with IEC 61000-4-4 (EFT): 40A
- Compatible with IEC 61000-4-5 (Surge): L-L Class 2, 250Apk, 8/20µs, 500V with Req = 2 Ohms
- Bidirectional Operation 50/60/400Hz AC Lines
- Very Low Clamping Voltage
- Form Factor Compatible with SMT 3225
- Available for SMT Reflow Soldering
- Low Profile and Space Saving Package
- Operating Temperature -55 to +125°C
- RoHS Compliant

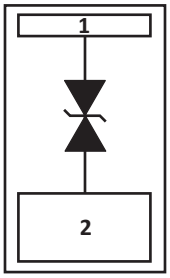
APPLICATIONS

- Power Adapters
- Home Appliances
- Industrial Equipment - Automation Controls
- Instrumentation
- SMART Meters

MECHANICAL CHARACTERISTICS

- Molded DFN-2-KW Package
- Approximate Weight: 0.4 grams
- Lead-Free Tin Matte Plating
- Solder Reflow Temperature: 260-270°C, 10 seconds
- 12mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION



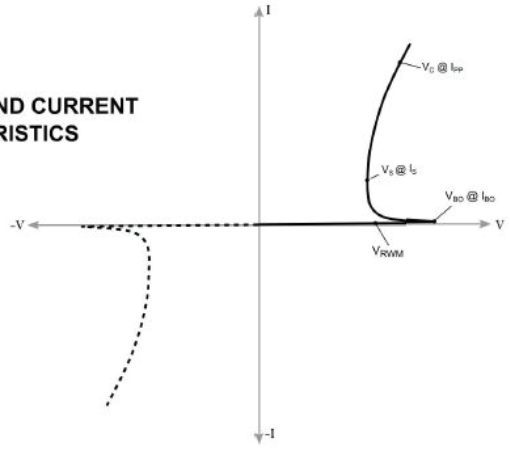
TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Current (8/20µs) - per IEC 61000-4-5	I_{PP}	250	A
Storage Temperature	T_{STG}	-55 to 125	°C
Operating Temperature	T_L	-55 to 125	°C
ESD Rating per IEC 61000-4-2 - Contact	-	±30	kV
ESD Rating per IEC 61000-4-2 - Air	-	±30	kV

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER	MARKING CODE	TYPICAL OPERATING VOLTAGE V_{RMS} VOLTS	MINIMUM REVERSE WORKING VOLTAGE V_{RWM} VOLTS	MAXIMUM REVERSE BREAKOVER VOLTAGE V_{BO} VOLTS	REVERSE BREAKOVER CURRENT I_{BO} mA	SWITCHING VOLTAGE V_S V	SWITCHING CURRENT I_S mA
PHYTVS125V3	125V3	125	200	220	1.0	110	100.0
PHYTVS250V3	250V3	250	375	420	1.0	200	100.0
PHYTVS277V3	277V3	277	410	440	1.0	220	100.0

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified				
PART NUMBER	MAXIMUM REVERSE LEAKAGE CURRENT @V_{RWM} I_R µA	MAXIMUM CLAMPING VOLTAGE V_C VOLTS	MAXIMUM PEAK PULSE CURRENT (8/20µs) I_{PP} A	MAXIMUM OFF-STATE CAPACITANCE @ 1MHz, 0V C_O pF
PHYTVS125V3	10.0	130	250	80.0
PHYTVS250V3	10.0	230	250	80.0
PHYTVS277V3	10.0	250	250	80.0

VOLTAGE AND CURRENT CHARACTERISTICS



TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PULSE WAVE FORM

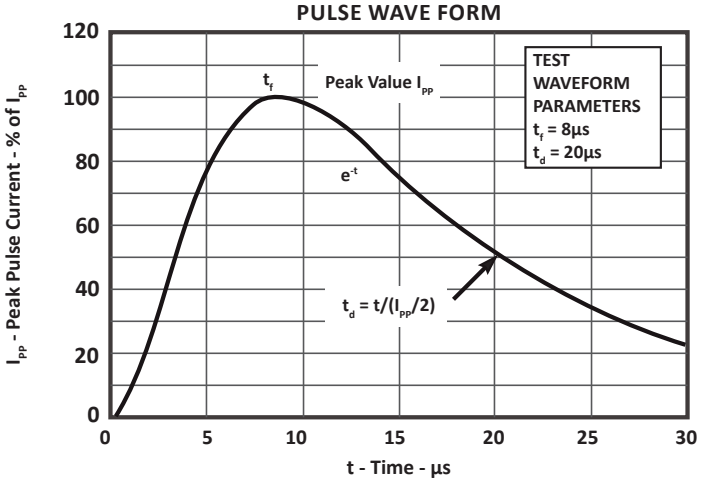
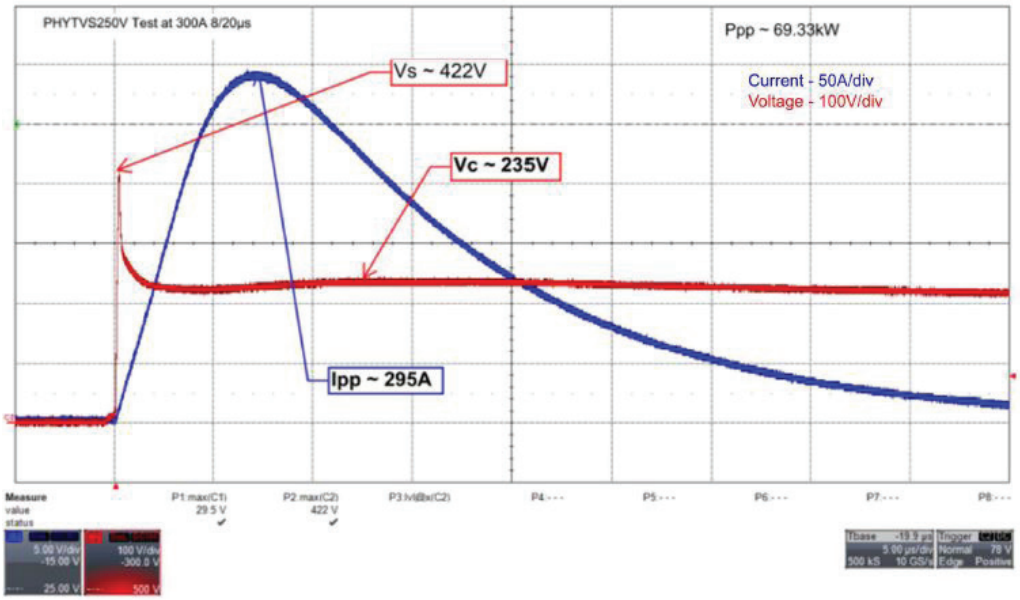


FIGURE 2
DYNAMIC PERFORMANCE EXAMPLE UNDER SURGE PULSE - 8/20µs



PACKAGE INFORMATION

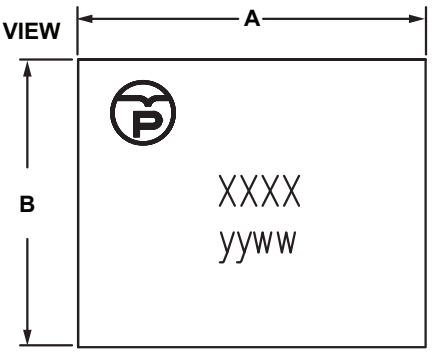
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	7.46	7.72	0.296	0.304
B	5.99	6.19	0.236	0.244
C	2.90	3.10	0.114	0.122
D	3.96	4.16	0.156	0.164
E	0.68	0.84	0.027	0.033
F	2.43	2.59	0.096	0.102
G	3.12	3.28	0.123	1.029
H	0.42	0.58	0.017	0.023
J	5.00	5.16	0.197	0.203
K	0.44	0.56	0.018	0.022
L	3.23		0.127	
M	2.54		0.100	
N	0.60	0.70	0.024	0.028
P	0.20	0.30	0.008	0.012

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

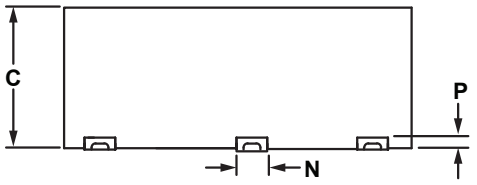
PCB PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	0.95	0.032	0.038
B	1.07	1.22	0.042	0.048
C	3.23		0.127	
D	2.54		0.100	
E	6.03		0.238	
F	4.22	4.32	0.165	0.171
G	0.92	1.02	0.036	0.040
H	2.26	2.38	0.089	0.094
J	3.36	3.46	0.130	0.138

NOTES
1. Suggested solder print uses some dimensions as PCB pad layout.

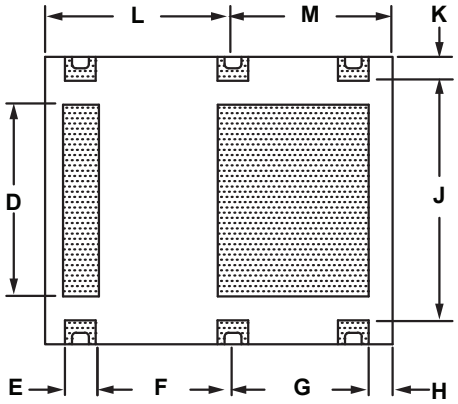
TOP VIEW



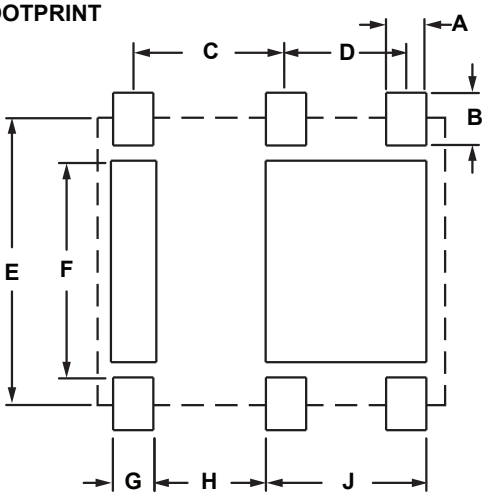
SIDE VIEW



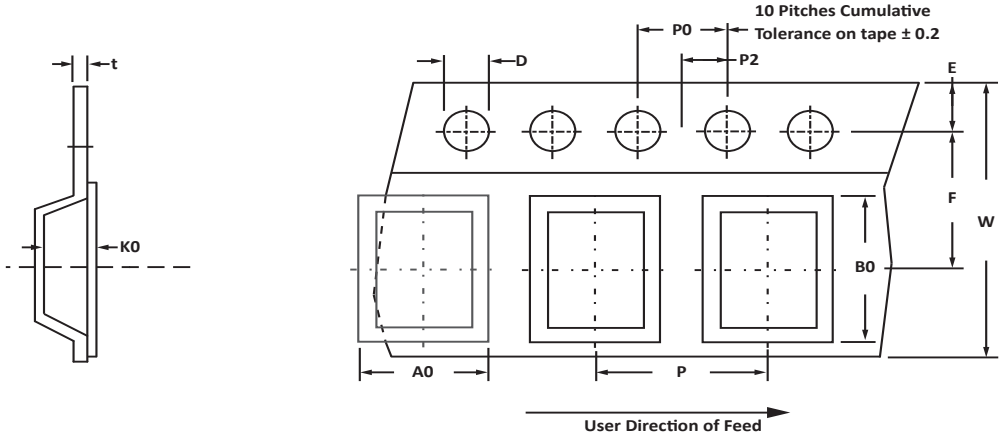
BOTTOM VIEW



FOOTPRINT



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
330mm (13")	16mm	6.8 ± 0.10	7.8 ± 0.10	3.30 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50±0.05	16.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	8.00 ± 0.10	0.25

NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Marking on Part - marking code (see page 2), date code and logo.

ORDERING INFORMATION					
BASE PART NUMBER (XXX=VOLTAGE)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PHYTVSxxxV3	n/a	-T13	1000	13"	n/a
This device is only available in a Lead-Free configuration.					

COMPANY INFORMATION

RTCA DO-160G COMPLIANT PRODUCT

COMPANY PROFILE

In business more than 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices is an ISO 9001 certified company.

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