

THYRISTOR SURGE SUPPRESSOR**DESCRIPTION**

The PSMP30-240 is a thyristor surge suppression (TSS) device designed to protect telecommunication equipment against lightning and transients induced by AC power lines. These devices can be used on central office equipment, PBX, DSU, OCU and other telecommunication equipment/systems. The bidirectional configuration provides protection for both positive and negative transients and the discrete surface mount package allows for individual placement of the device on line cards or other locations where multiple component devices do not offer the versatile in board trace layout.

This device can be used to provide protection in accordance with industry standards such as FCC Part 68, ANSI C62.41, UL 1459, GR-1089-CORE, and IEC 61000-4-5 requirements.

FEATURES

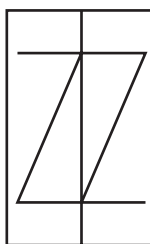
- Compatible with IEC 61000-4-2 (ESD)
- Compatible with IEC 61000-4-5 (Surge)
- Compliant with Various Standards (See Table 1)
- Available in 240V
- Low Leakage Current: 2 μ A Maximum
- Holding Current: 150mA min.
- Repetitive Peak Pulse Current: 30A (10/1000 μ s)
- Surge Current Capability (See Table 2)
- Low Capacitance: 10-20pF (Typical @50V)
- Bidirectional Crowbar Configuration
- RoHS Compliant
- REACH Compliant

MECHANICAL CHARACTERISTICS

- Molded Plastic DO-214AC Package
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- Flammability Rating UL 94V-0
- 12mm Tape and Reel per EIA Standard 481

APPLICATIONS

- T1/E1 Trunk & Line Cards
- SLIC Line Card
- DBX Branch Exchange Switches
- FCC Part 68 Customer Premise Equipment
- Line Interface Modem
- xDSL Architecture Interface



DEVICE SYMBOL
BIDIRECTIONAL

DEVICE CHARACTERISTICS

TABLE 1 - STANDARDS

STANDARD	PEAK SURGE VOLTAGE (V)	WAVEFORM VOLTAGE	REQUIRED PEAK CURRENT (A)	CURRENT WAVFORM	MIN. RESISTOR TO MEET STANDARD
GR-1089 Core First Level	2500 1000	2/10μs 10/1000μs	500 100	2/10μs 10/1000μs	20 24
GR-1089 Core Second Level	5000	2/10μs	500	2/10μs	40
GR-1089 Core Intra-Building	1500	2/10μs	100	2/10μs	0
ITU-T-K20/K21	6000 1500	10/700μs	150 37.5	5/310μs	110 0
ITU-T-K20 (IEC 61000-4-2)	8000 15000	1/60ns	ESD Contact Discharge ESD Air Discharge		0 0
VDE0433	4000 2000	10/700μs	100 50	5/310μs	60 10
VDE0878	4000 2000	1.2/50μs	100 50	1/20μs	18 0
IEC 61000-4-5	4000 1000	10/700μs 1.2/50μs	100 100	5/310μs 10/560μs	26 15
FCC Part 68 Lightning Surge Type A	1500 800	10/160μs 10/560μs	200 100	10/160μs 10/560μs	26 15
FCC Part 68 Lightning Surge Type B	1000	9/720μs	25	5/320μs	0

TABLE 2 - ABSOLUTE RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Surge Rating - IPP	I_{PP}	2/10μs @ 100A 8/20μs @ 70A 10/160μs @ 45A 10/560μs @ 35A 10/1000μs @ 30A 5/310μs @ 40A 1/20μs @ 70A	A
Fail-Safe Mode: Maximum Current @ 8/20μs	I_{FS}	2.5	kA
Non-Repetitive Surge Peak On-State Current (Sinusoidal)	I_{TSM}	14 (t = 0.2s) 10.5 (t = 1s) 9 (t = 2s) 3 (t = 15 min)	A
I ² t Value for Using	I^2t	5.7 (t = 16.6ms) 4.9 (t = 20ms)	A ² s
Maximum Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C
Maximum Lead Temperature	TL	260	°C
Thermal Resistance: Junction to Ambient	$R_{th(j-a)}$	150	°
Thermal Resistance: Junction to Leads	$R_{th(j-l)}$	30	°C

DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	MAXIMUM LEAKAGE CURRENT	MAXIMUM LEAKAGE CURRENT (Note 1)	MAXIMUM DYNAMIC BREAKOVER VOLTAGE	MAXIMUM STATIC VOLTAGE	MINIMUM HOLDING CURRENT	TYPICAL CAPACITANCE (Note 2)	TYPICAL CAPACITANCE (Note 3)
		$I_{RM} @ V_{RM}$	$I_R @ V_R$	V_{BO} VOLTS	$V_{BO} @ I_{BO}$	mA	@50V, 1MHz C pF	@2V, 1MHz C pF
PSMP30-240	P26A	2μA @ 216V	5μA @ 240V	300	320V @ 800mA	150	10	20

NOTES

1. I_R measured at V_R guaranteed $V_{BR} \min > V_R$.
2. $V_R = 50V$ bias, $V_{RMS} = 1V$, $F = 1MHz$.
3. $V_R = 2V$ bias, $V_{RMS} = 1V$, $F = 1MHz$.

FIGURE 1
PULSE WAVEFORM

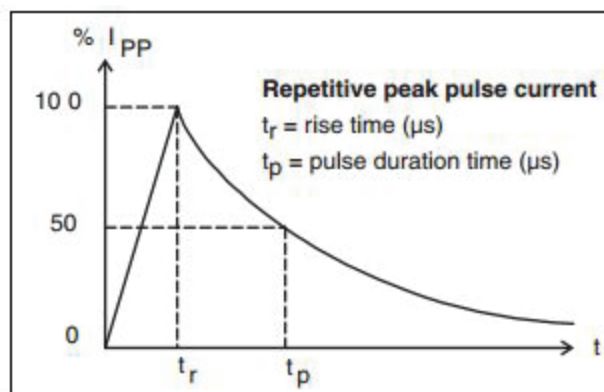


FIGURE 2
NON-REPETITIVE SURGE PEAK ON-STATE CURRENT VS OVERLOAD DURATION

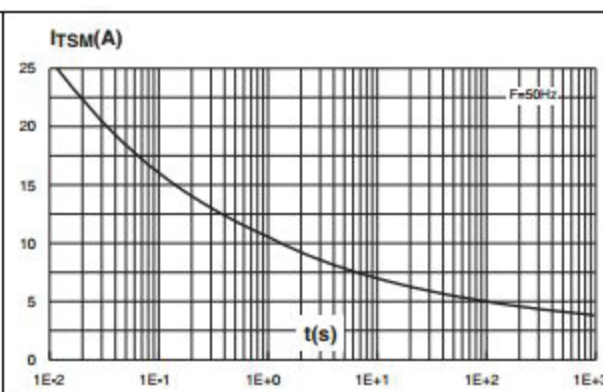


FIGURE 3
ON-STATE VOLTAGE VS ON-STATE CURRENT (TYP)

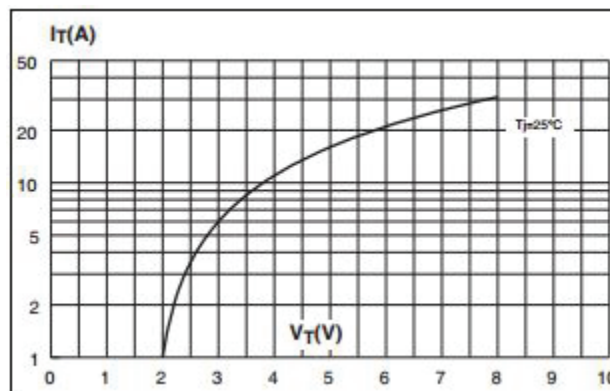
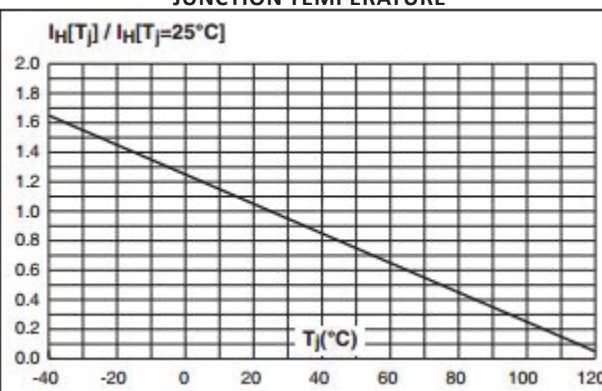


FIGURE 4
RELATIVE VARIATION OF HOLDING CURRENT VS JUNCTION TEMPERATURE



DEVICE CHARACTERISTICS

FIGURE 6
 RELATIVE VARIATION OF BREAKOVER VOLTAGE
 VS JUNCTION TEMPERATURE

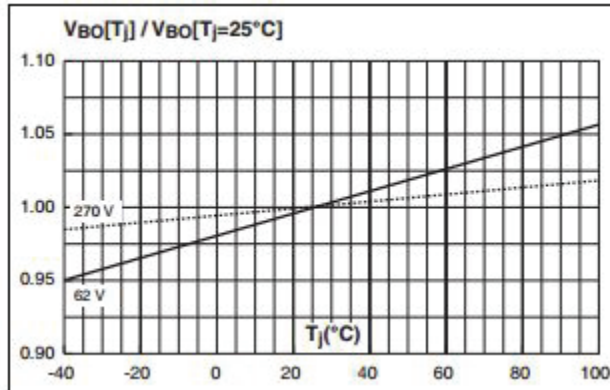


FIGURE 7
 RELATIVE VARIATION OF LEAKAGE CURRENT VS
 REVERSE VOLTAGE APPLIED (TYP)

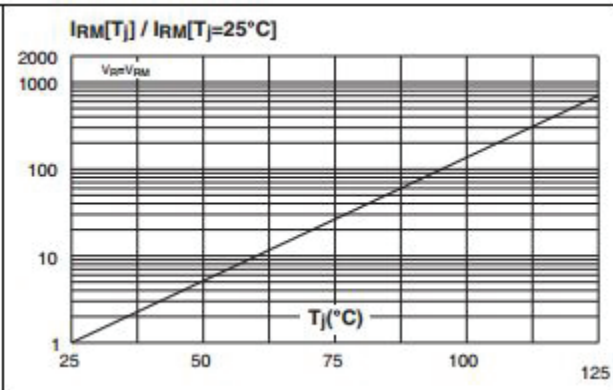


FIGURE 8
 VARIATION OF THERMAL IMPEDANCE
 JUNCTION TO AMBIENT VS PULSE DURATION

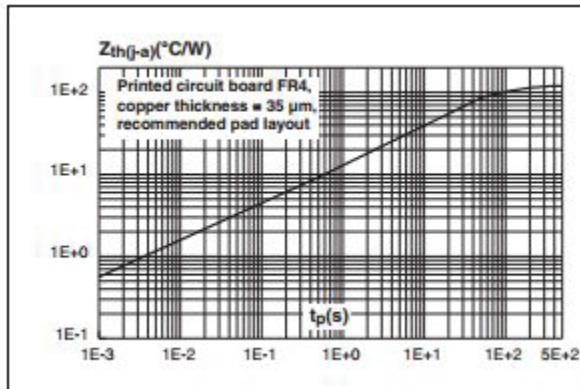


FIGURE 9
 RELATIVE VARIATION OF JUNCTION CAPACITANCE VS REVERSE VOLTAGE APPLIED (TYP)

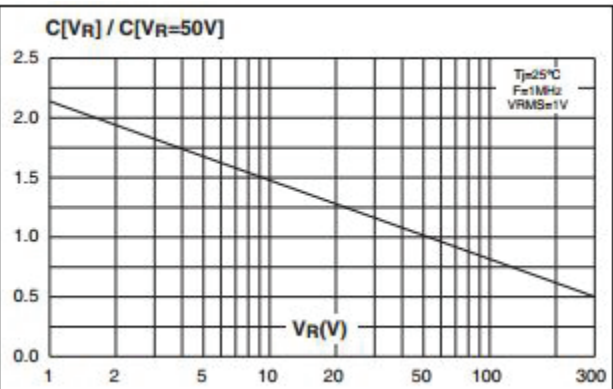
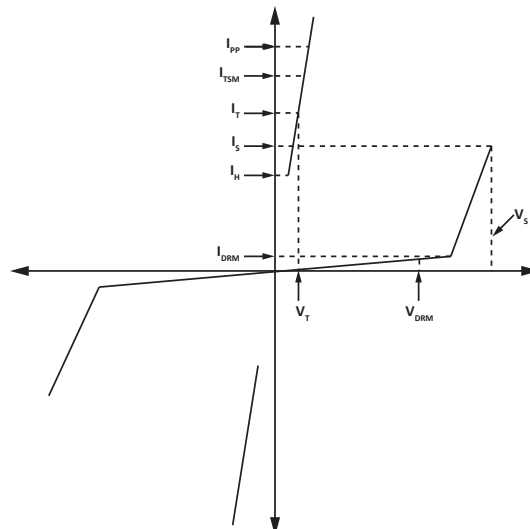


FIGURE 10
 VI CHARACTERISITC CURVE



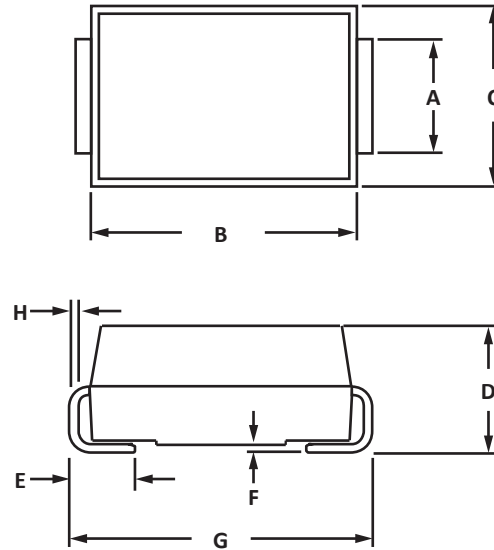
DO-214AC PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.23	1.63	0.049	0.064
B	4.10	4.55	0.162	0.179
C	2.51	2.76	0.099	0.109
D	1.96	2.26	0.077	0.089
E	0.75	1.51	0.03	0.06
F	0.00	0.20	0.000	0.008
G	4.87	5.22	0.192	0.206
H	0.15	0.30	0.006	0.012

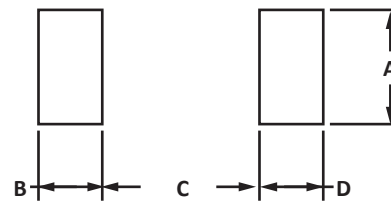
NOTES

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

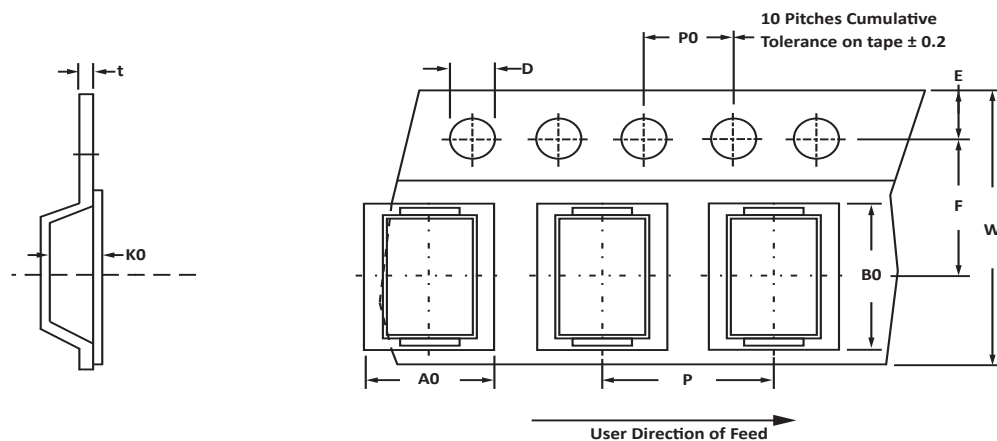


PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.57	-	0.062	-
B	1.55	-	0.061	-
C	-	2.28	-	0.090
D	1.55	-	0.061	-



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P	tmax
330mm (13")	12mm	2.79 ± 0.10	5.33 ± 0.10	2.36 ± 0.10	1.55 ± 0.10	1.75 ± 0.10	5.5 ± 0.05	12.00 ± 0.30	4.00 ± 0.10	4.00 ± 0.10	0.4

NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T13 = 13" Reel - 5,000 pieces per 12mm tape.
4. Marking on Part - marking code (see page 2), date code and logo.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PSMP30-240	N/A	-T13	5,000	13"	N/A

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

COMPANY INFORMATION

COMPANY PROFILE

In business more than 25 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. ProTek Devices is ISO 9001:2015 certified.

CONTACT US

Corporate Headquarters

2929 South Fair Lane
Tempe, Arizona 85282
USA

By Telephone

General: 602-431-8101
Sales: & Marketing: 602-414-5109
Customer Service: 602-414-5114
Product Technical Support: 602-414-5107

By Fax

General: 602-431-2288

By E-mail:

Asia Sales: asiasales@protekdevices.com
Europe Sales: europesales@protekdevices.com
U.S. Sales: ussales@protekdevices.com
Distributor Sales: distysales@protekdevices.com
Customer Service: service@protekdevices.com
Technical Support: support@protekdevices.com

ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19
Zervex
Singapore - 408538
Tel: +65-67488312
Fax: +65-67488313

Web

www.protekdevices.com

COPYRIGHT © ProTek Devices 2016 - This literature is subject to all applicable copyright laws and is not for resale in any manner.

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice.

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance. ProTek assumes no responsibility with respect to the selection or specifications of such products. ProTek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ProTek assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability without limitation special, consequential or incidental damages.

LIFE SUPPORT POLICY: ProTek Devices products are not authorized for use in life support systems without written consent from the factory.