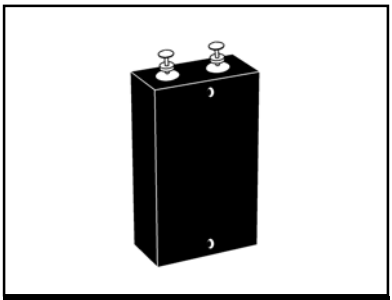
PROTEK DEVICES

PHP8.4-PHP500
thru
PIP8.4-PIP500

AC POWER BUS VOLTAGE SUPPRESSOR



PHP & PIP PACKAGE

APPLICATIONS

✔ Secondary AC Power Supply
✔ Aircraft & Shipboard AC Power Bus
✔ Heavy Duty AC Switching Power

IEC COMPATIBILITY (EN61000-4)

✔ *Meets the Following Military Specifications:*
- DOD-STD-1389 *- MIL-STD-2036*
- MIL-STD-704 *- MIL-PRF-STD-19500/507*
✔ 7,500 & 15,000 Watts Peak Pulse Power per Line (tp=10/1000µs)
✔ Each Device 100% Tested
✔ Available in Multiple Voltages Ranging From: 8.4V to 500V

MECHANICAL CHARACTERISTICS

✔ Hermetically Sealed Glass to Metal Sub-Assemblies (PHP)
✔ Sub-Assemblies are Packaged in Molded Epoxy Case (PIP)
✔ Weight 46 grams (Approximate)
✔ Flammability rating UL 94V-0
✔ Device Marking: Logo & Part Number
✔ Screening Available Upon Request - The PHP & PIP series can be screened upon request for military requirements in accordance with MIL-PRF-19500 (applicable test). Standard screening is available based on the following options:

H1 - Submodule Screening per test plans 05231 & 05232
H2 - Submodule & Module Screening per test plan 05233
H3 - Submodule & Module Screening, Module Group B & C Lot Testing per test plans 05234 & 05235

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 10/1000µs) - See Fig. 1	P_{PP}	7.5 & 15	kilowatts
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Steady State Power Disspiation @ 50°C	T_A	7.5	Watts

DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (See Notes 1-2)	AVERAGE RMS VOLTAGE V_{RMS} VOLTS	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE (See Note 1) @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ I_{PPM} V_C VOLTS	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	MAXIMUM PEAK PULSE CURRENT I_{PPM} AMPS	MAXIMUM PEAK PULSE POWER @ 1ms P_{PP} KILOWATTS
PHP8.4	8.4	12.0	14	22	250	341	7.5
PHP24	24.0	34.0	40	67	250	112	7.5
PHP30	30.0	42.5	50	84	250	90	7.5
PHP60	60.0	85.0	100	167	250	90	15.0
PHP120*	120.0	170.0	200	319	250	47	15.0
PHP208	208.0	295.0	347	536	250	28	15.0
PHP250*	250.0	354.0	418	652	250	23	15.0
PHP440	440.0	623.0	735	1138	250	13.2	15.0
PHP500*	500.0	708.0	835	1292	250	11.6	15.0
PIP8.4	8.4	12.0	14	22	250	341	7.5
PIP24	24.0	34.0	40	67	250	112	7.5
PIP30	30.0	42.5	50	84	250	90	7.5
PIP60	60.0	85.0	100	167	250	90	15.0
PIP120*	120.0	170.0	200	319	250	47	15.0
PIP208	208.0	295.0	347	536	250	28	15.0
PIP250*	250.0	354.0	418	652	250	23	15.0
PIP440	440.0	623.0	735	1138	250	13.2	15.0
PIP500*	500.0	708.0	835	1292	250	11.6	15.0

Note 1: An * indicates that this series is recommended for marine applications. For military and aerospace applications, use the PHP Series. For industrial applications use the PIP Series

Note 2: The following devices have a peak pulse power rating of 7,500W for a 10/1000µs waveform (see Figure 1): 8.4V, 24V and 30V.

GRAPHS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

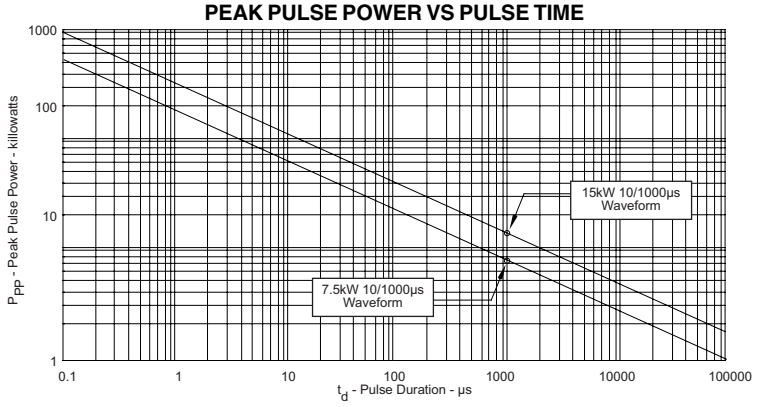


FIGURE 2
PULSE WAVE FORM

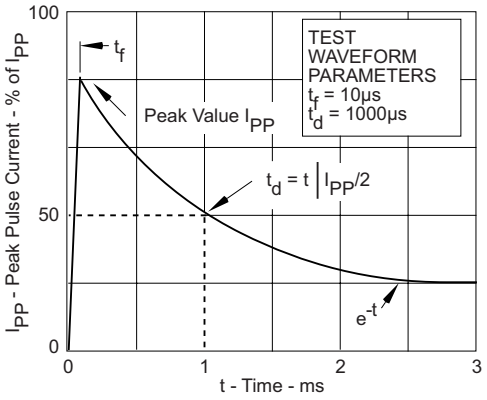
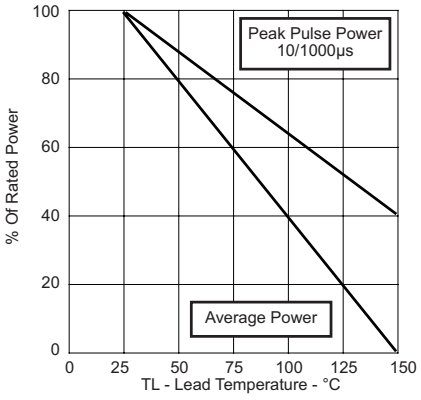
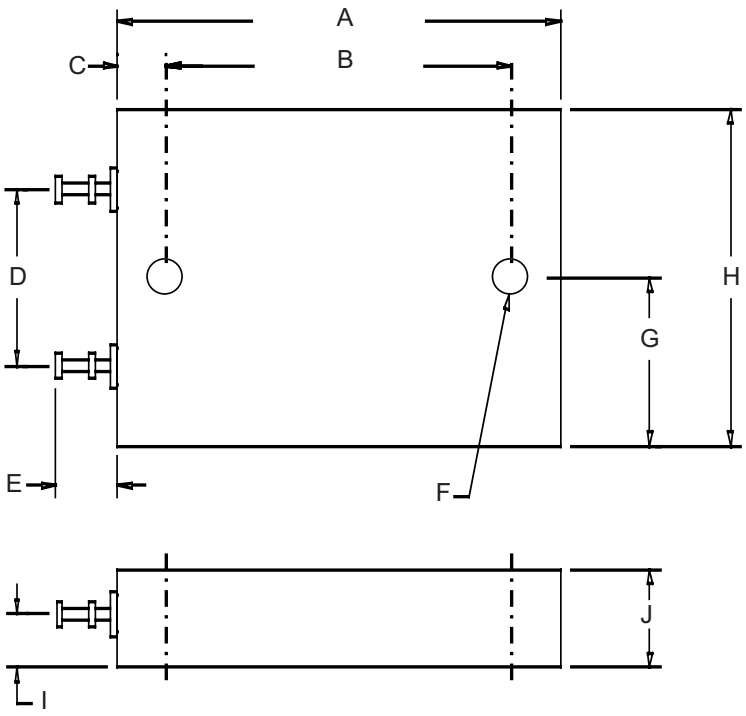


FIGURE 3
POWER DERATING CURVE

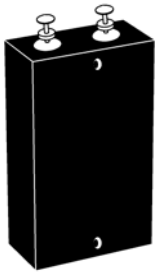


PACKAGE OUTLINE & DIMENSIONS

PHP & PIP PACKAGE OUTLINE



PHP & PIP PACKAGE



DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	56.38	57.91	2.22	2.28
B	49.02	50.03	1.93	1.97
C	3.43	4.17	0.135	0.165
D*	20.32	20.32	0.800	0.800
E	8.26	9.27	0.325	0.365
F*	3.18 DIA	3.18 DIA	0.125 DIA	0.125 DIA
G	16.76	18.29	0.660	0.720
H	34.16	35.69	1.345	1.405
I*	6.35	6.35	0.250	0.250
J	11.94	13.46	0.47	0.53

Note*: Dimensions are nominal.

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