Microsemi Corp.
The diode experts

SANTA ANA, CA

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PHP8.4 thru PHP500 and PIP8.4 thru PIP500

TRANSIENT ABSORPTION ZENER

FEATURES

- 7,500 AND 15,000 WATTS PEAK PULSE POWER DISSIPATION
- AVAILABLE IN RANGES FROM 8.4 TO 500 VOLTS
- EACH DEVICE IS 100% TESTED
- DESIGNED FOR MILITARY (PHP SERIES) AND COMMERCIAL (PIP SERIES)

PHP/PIP is designed for applications requiring "across the line" AC power protection. These TAZ modules are used in applications where extreme voltage transients can permanently damage voltage sensitive systems or components. These devices are most often used when discrete TAZ do not have high enough power requirements to suppress large power surges.

TAZ modules can be used to protect equipment from induced lightning, power surges and transients originating from inductive switching or power interrupt. The modules used for both commercial and military applications, including telecommunications, central office switching and PABX, CATV distribution, aircraft, shipboard, computers, distributed data processing and power supplies.

For military applications, the PHP module sub-assemblies are packaged in a hermetically sealed glass-to-metal package. Also available screened in accordance with MIL-S-19500/507. The PHP series modules can have design consistency with the following military requirements as controlling specifications:

- MIL-STD-1399, Section 300
- MIL-STD-704
- MIL-E-16400
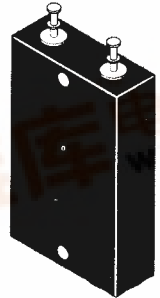- MIL-S-19500/507

MAXIMUM RATINGS

7,500 and 15,000 watts Peak Pulse power dissipation at the 1 msec pulse and 25°C (see derating curve)

Operating and Storage temperatures: –65° to +150°C

Average Steady State power dissipation at 50°C: 7.5 watts

$t_{clamping}$ (0 volts to BV): Less than 1×10^{-8} seconds

Case 11
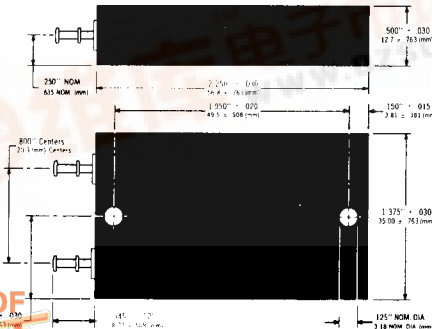
MECHANICAL CHARACTERISTICS

CASE: Molded case.

TERMINAL: Silver plated brass.

POLARITY: Bidirectional.

WEIGHT: 50 grams (Appx.).

MOUNTING POSITION: Any.

Case 11

MILITARY APPLICATIONS: PHP series sub-assemblies are packaged in a hermetically sealed glass-to-metal package, available with design consistency to MIL-S-19500/507.

PHP8.4 thru PIP500
ELECTRICAL CHARACTERISTICS @ 25°C

MICROSEMI PART NUMBER	AVERAGE RMS VOLTAGE VOLTS AC	REVERSE STAND-OFF VOLTAGE (NOTE 1) V_{WM} VOLTS DC	MINIMUM BREAKDOWN VOLTAGE $V_{(BR)}$ @ It VOLTS	mA	MAXIMUM REVERSE LEAKAGE I_D @ V_{WM} MICRO AMPERES	MAXIMUM CLAMPING VOLTAGE V_C @ I_{PP} VOLTS DC	MAXIMUM PEAK PULSE CURRENT (FIG. 3) I_{PP} A	MAXIMUM PEAK PULSE POWER (1 MSEC) P_p KILOWATTS
PHP8.4	8.4	12.0	14	10	250	22	341	7.5
PHP24	24.0	34.0	40	10	250	67	112	7.5
PHP30	30.0	42.5	50	1.0	250	84	90	7.5
PHP60	60.0	85.0	100	1.0	250	167	90	15.0
PHP120*	120.0	170.0	200	1.0	250	319	47	15.0
PHP208	208.0	295.0	347	1.0	250	536	28	15.0
PHP250*	250.0	354.0	418	1.0	250	652	23	15.0
PHP440	440.0	623.0	735	1.0	250	1138	13.2	15.0
PHP500*	500.0	708.0	835	1.0	250	1292	11.6	15.0
PIP8.4	8.4	12.0	14	10	250	22	341	7.5
PIP24	24.0	34.0	40	10	250	67	112	7.5
PIP30	30.0	42.5	50	1.0	250	84	90	7.5
PIP60	60.0	85.0	100	1.0	250	167	90	15.0
PIP120*	120.0	170.0	200	1.0	250	319	47	15.0
PIP208	208.0	295.0	347	1.0	250	536	28	15.0
PIP250*	250.0	354.0	418	1.0	250	652	23	15.0
PIP440	440.0	623.0	735	1.0	250	1138	13.2	15.0
PIP500*	500.0	708.0	835	1.0	250	1292	11.6	15.0

Special Voltages available from factory. *Recommended for marine applications.

NOTE 1: A TAZ is normally selected according to the reverse "Stand Off Voltage" (V_R) which should be equal to or greater than the DC or continuous peak operating voltage level.
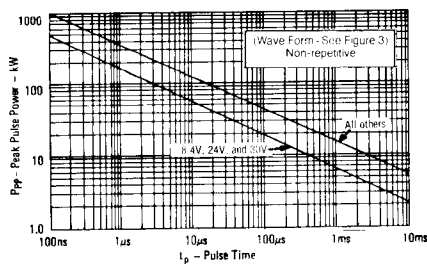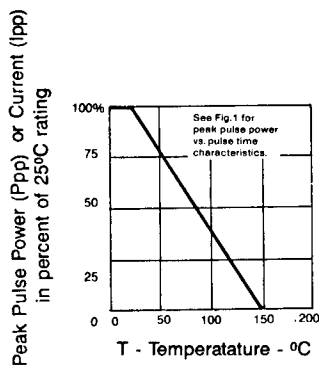

FIGURE 1
PEAK PULSE POWER
VS. PULSE TIME

DERATING CURVE

Test waveform parameters
$t_r = 10\,\mu s$
$t_p = 1000\,\mu s$