

# HIGH-SPEED, HIGH-CURRENT SURGE PROTECTORS

## PMT(301) Series



### DESCRIPTION

CP Clare's PMT(301) Series surge protectors (350-3500V) provide a high level of protection from high-speed, high-current transient surges. These devices are constructed using a proprietary semiconductor junction process, which results in nanosecond response times combined with peak current ratings in excess of 10kA.

### FEATURES

- Fast impulse breakdown
- Tight DC breakdown voltage tolerance ( $\pm 10\%$ )
- Rugged ceramic-metal construction
- Low capacitance

### APPLICATIONS

- Test equipment
- Medical electronics
- Instrumentation circuits
- TWT drive circuitry
- Avionics

### STANDARD VOLTAGES

Series	DC Breakdown Voltage (typ)	Unit
PMT(301)	350	V
	400	V
	500	V
	550	V
	600	V
	800	V
	1.0	kV
	1.5	kV
	2.0	kV
	2.5	kV
	3.0	kV
	3.5	kV

(See detailed specifications for more information.)

# TWO ELECTRODE HIGH VOLTAGE SURGE ARRESTERS

## PMT(301) Series

### SPECIFICATIONS

All characteristics at 25°C

PARAMETER	CONDITIONS	SYMBOL	PMT(301)350			PMT(301)400			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>									
DC Breakdown	100V/s	$V_{BD}$	315	350	385	360	400	440	V
Impulse Breakdown	80kV/ $\mu$ s	$V_{bd}$	-	-	1150	-	-	1200	V
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	4.0	-	-	4.0	pF
<b>Life Ratings</b>									
Surge Life	100A (PW=20 $\mu$ s)	-	6000	-	-	6500	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	PMT(301)500			PMT(301)550			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>									
DC Breakdown	100V/s	$V_{BD}$	450	500	550	495	550	605	V
Impulse Breakdown	80kV/ $\mu$ s	$V_{bd}$	-	-	1300	-	-	1350	V
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	4.0	-	-	4.0	pF
<b>Life Ratings</b>									
Surge Life	100A (PW=20 $\mu$ s)	-	7800	-	-	8500	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	PMT(301)600			PMT(301)800			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>									
DC Breakdown	100V/s	$V_{BD}$	540	600	660	720	800	880	V
Impulse Breakdown	80kV/ $\mu$ s	$V_{bd}$	-	-	1400	-	-	1600	V
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	4.0	-	-	4.0	pF
<b>Life Ratings</b>									
Surge Life	100A (PW=20 $\mu$ s)	-	9300	-	-	16600	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	PMT(301)1.0			PMT(301)1.5			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>									
DC Breakdown	100V/s	$V_{BD}$	0.9	1.0	1.1	1.35	1.50	1.65	kV
Impulse Breakdown	80kV/ $\mu$ s	$V_{bd}$	-	-	1.8	-	-	2.3	kV
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	4.0	-	-	4.0	pF
<b>Life Ratings</b>									
Surge Life	100A (PW=20 $\mu$ s)	-	29300	-	-	53700	-	-	surges

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## PMT(301) Series

### SPECIFICATIONS

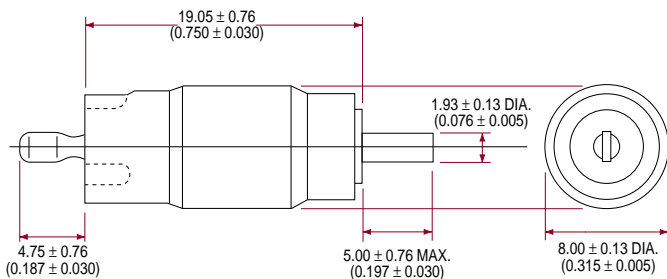
All characteristics at 25°C

PARAMETER	CONDITIONS	SYMBOL	PMT(301)2.0			PMT(301)2.5			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>									
DC Breakdown	100V/s	$V_{BD}$	1.8	2.0	2.2	2.25	2.5	2.75	kV
Impulse Breakdown	80kV/ $\mu$ s	$V_{bd}$	-	-	2.55	-	-	3.19	kV
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	4.0	-	-	4.0	pF
<b>Life Ratings</b>									
Surge Life	100A (PW=20 $\mu$ s)	-	68100	-	-	68100	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	PMT(301)3.0			PMT(301)3.5			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>									
DC Breakdown	100V/s	$V_{BD}$	2.7	3.0	3.3	3.15	3.5	3.85	kV
Impulse Breakdown	80kV/ $\mu$ s	$V_{bd}$	-	-	3.83	-	-	4.47	kV
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	4.0	-	-	4.0	pF
<b>Life Ratings</b>									
Surge Life	100A (PW=20 $\mu$ s)	-	68100	-	-	68100	-	-	surges

### MECHANICAL DIMENSIONS

DIMENSIONS  
mm  
(inches)



### ORDERING INFORMATION

Devices in the PMT(301) series with other breakdown voltages in the 350 to 3500 V range are available upon request.

A complete part number is represented by the digits below. Breakdown voltages are expressed in Volts for devices <1000V and kV for devices  $\geq$ 1KV. For example, PMT(301)2.0 is a 2kV PMT(301) series device.

PMT(301) XXX for 350-800V  
 PMT(301) X.X for 1.0-3.5 kV  
 Series: PMT3(310)  
 Breakdown Voltage: See specifications tables