

HIGH-SPEED, HIGH-CURRENT SURGE PROTECTORS

PMT/UMT (275) Series



DESCRIPTION

CP Clare's PMT(275) and UMT(275) Series surge protectors (350-500V and 550-2500V respectively) 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 20kA.

FEATURES

- Fast impulse breakdown ($\leq 125\%$ of typical DC breakdown at $5\text{kV}/\mu\text{s}$)
- Tight DC breakdown voltage tolerance ($\pm 10\%$)
- Low capacitance

APPLICATIONS

- Test equipment
- Video displays
- Medical electronics
- Instrumentation circuits

STANDARD VOLTAGES

Series	DC Breakdown Voltage (typ)	Unit
PMT(275)	350	V
	400	V
	450	V
	500	V
UMT(275)	550	V
	600	V
	650	V
	750	V
	800	V
	850	V
	1.0	kV
	1.5	kV
	2.0	kV
2.5	kV	

(See detailed specifications for more information.)

HIGH-SPEED, HIGH-CURRENT SURGE PROTECTORS

PMT/UMT (275) Series

SPECIFICATIONS

All characteristics at 25°C

PARAMETER	CONDITIONS	SYMBOL	PMT(275)350			PMT(275)400			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Device Specifications									
DC Breakdown	100V/s	V_{BD}	315	350	385	360	400	440	V
Impulse Breakdown	5kV/ μ s	V_{bd}	-	-	750	-	-	750	V
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	4	-	-	4	pF
Life Ratings									
Surge Life	1kA (PW=20 μ s)		500	-	-	500	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	PMT(275)450			PMT(275)500			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Device Specifications									
DC Breakdown	100V/s	V_{BD}	405	450	495	450	500	550	V
Impulse Breakdown	5kV/ μ s	V_{bd}	-	-	750	-	-	750	V
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	4	-	-	4	pF
Life Ratings									
Surge Life	1kA (PW=20 μ s)		500	-	-	500	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UMT(275)550			UMT(275)600			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Device Specifications									
DC Breakdown	100V/s	V_{BD}	495	550	605	540	600	660	V
Impulse Breakdown	5kV/ μ s	V_{bd}	-	-	688	-	-	750	V
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	4	-	-	4	pF
Life Ratings									
Surge Life	1kA (PW=20 μ s)		500	-	-	500	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UMT(275)650			UMT(275)750			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Device Specifications									
DC Breakdown	100V/s	V_{BD}	585	650	715	675	750	825	V
Impulse Breakdown	5kV/ μ s	V_{bd}	-	-	813	-	-	938	V
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	4	-	-	4	pF
Life Ratings									
Surge Life	1kA (PW=20 μ s)		500	-	-	500	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UMT(275)800			UMT(275)850			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Device Specifications									
DC Breakdown	100V/s	V_{BD}	720	800	880	765	850	935	V
Impulse Breakdown	5kV/ μ s	V_{bd}	-	-	1000	-	-	1063	V
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	4	-	-	4	pF
Life Ratings									
Surge Life	1kA (PW=20 μ s)		500	-	-	500	-	-	surges

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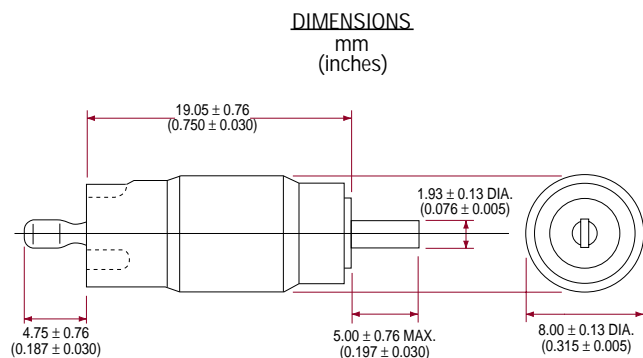
SPECIFICATIONS

All characteristics at 25°C

PARAMETER	CONDITIONS	SYMBOL	UMT(275)1.0			UMT(275)1.5			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Device Specifications									
DC Breakdown	100V/s	V_{BD}	0.9	1.0	1.1	1.35	1.50	1.65	kV
Impulse Breakdown	5kV/ μ s	V_{bd}	-	-	1.25	-	-	1.88	kV
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	4	-	-	4	pF
Life Ratings									
Surge Life	1kA (PW=20 μ s)	-	500	-	-	500	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UMT(275)2.0			UMT(275)2.5			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Device Specifications									
DC Breakdown	100V/s	V_{BD}	1.8	2.0	2.2	2.25	2.50	2.75	kV
Impulse Breakdown	5kV/ μ s	V_{bd}	-	-	2.5	-	-	3.13	kV
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	4	-	-	4	pF
Life Ratings									
Surge Life	1kA (PW=20 μ s)	-	500	-	-	500	-	-	surges

MECHANICAL DIMENSIONS



ORDERING INFORMATION

Devices in the PMT/UMT(275) series with other breakdown voltages in the 350-2500V 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(275)350 is a 350V PMT(275) series device, and UMT(275)2.0 is a 2kV UMT(275) series device.

PMT(275)	XXX	for 350-500 V
UMT(275)	XXX	for 550-850 V
UMT(275)	X.X	for 1.0-2.5 kV

Series ————— Breakdown Voltage
PMT(275) ————— See specification tables
UMT(275)