



### DESCRIPTION

CP Clare's UNI-IMP high-speed transient surge protectors (0.55-20kV) provide the ultimate protection from high-energy, fast-rising transients such as Nuclear EMP. These devices are constructed using a proprietary semiconductor junction process that results in nanosecond response times combined with peak current ratings in excess of 20kA. A unique benefit of this technology is that the breakdown voltage is virtually independent of the rise time of the transient. In addition, the low capacitance of these devices allows for direct placement on high-frequency lines and antenna feeds without excessive loading.

### FEATURES

- Fast impulse breakdown ( $\leq 120\%$  of typical DC breakdown to  $200\text{kV}/\mu\text{s}$ )
- Tight DC breakdown voltage tolerance ( $\pm 10\%$ )
- Non-radioactive
- Low capacitance

### APPLICATIONS

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

### STANDARD VOLTAGES

Series	DC Breakdown Voltage (typ)	Unit
UBD	550	V
	600	V
	650	V
	750	V
	850	V
	1.0	kV
	1.2	kV
	1.5	kV
	2.0	kV
	2.5	kV
	3.0	kV
4.0	kV	
UBT and UGT	4.0	kV
	5.0	kV
	6.0	kV
	7.5	kV
	10.0	kV
	12.0	kV
	15.0	kV
20.0	kV	

(See detailed specifications for more information.)

# HIGH-SPEED TRANSIENT SURGE PROTECTORS

## UNI-IMPS

### SPECIFICATIONS

All characteristics at 25°C

PARAMETER	CONDITIONS	SYMBOL	UBD-550			UBD-600			UBD-650			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>												
DC Breakdown	100V/s	$V_{BD}$	495	550	605	540	600	660	585	650	715	V
Impulse Breakdown	5kV/ $\mu$ s	$V_{bd}$	-	-	660	-	-	720	-	-	780	V
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	20.0	-	-	20.0	-	-	20.0	pF
<b>Life Ratings</b>												
Surge Life	3kA (PW=15 $\mu$ s)	-	330	-	-	420	-	-	500	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UBD-750			UBD-850			UBD-1.0			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>												
DC Breakdown	100V/s	$V_{BD}$	675	750	825	765	850	935	900	1000	1100	V
Impulse Breakdown	5kV/ $\mu$ s	$V_{bd}$	-	-	900	-	-	1020	-	-	1200	V
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	20.0	-	-	20.0	-	-	15.0	pF
<b>Life Ratings</b>												
Surge Life	3kA (PW=15 $\mu$ s)	-	660	-	-	830	-	-	1080	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UBD-1.2			UBD-1.5			UBD-2.0			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>												
DC Breakdown	100V/s	$V_{BD}$	1.08	1.20	1.32	1.35	1.50	1.65	1.80	2.00	2.20	kV
Impulse Breakdown	5kV/ $\mu$ s	$V_{bd}$	-	-	1.44	-	-	1.80	-	-	2.40	kV
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	15.0	-	-	15.0	-	-	10.0	pF
<b>Life Ratings</b>												
Surge Life	3kA (PW=15 $\mu$ s)	-	1410	-	-	1900	-	-	2400	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UBD-2.5			UBD-3.0			UBD-4.0			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>												
DC Breakdown	100V/s	$V_{BD}$	2.25	2.50	2.75	2.70	3.00	3.30	3.60	4.00	4.40	kV
Impulse Breakdown	5kV/ $\mu$ s	$V_{bd}$	-	-	3.00	-	-	3.60	-	-	4.80	kV
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	10.0	-	-	5.0	-	-	5.0	pF
<b>Life Ratings</b>												
Surge Life	3kA (PW=15 $\mu$ s)	-	2400	-	-	2400	-	-	2400	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UBT-4.0 UGT-4.0			UBT-5.0 UGT5.0			UBT-6.0 UGT-6.0			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>												
DC Breakdown	100V/s	$V_{BD}$	3.60	4.00	4.40	4.50	5.00	5.50	5.40	6.00	6.60	kV
Impulse Breakdown	5kV/ $\mu$ s	$V_{bd}$	-	-	4.80	-	-	6.00	-	-	7.20	kV
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	5.0	-	-	3.0	-	-	3.0	pF
<b>Life Ratings</b>												
Surge Life	10kA (PW=5 $\mu$ s)	-	1300	-	-	1300	-	-	1300	-	-	surges

# HIGH-SPEED TRANSIENT SURGE PROTECTORS

## UNI-IMPS

### SPECIFICATIONS

All characteristics at 25°C

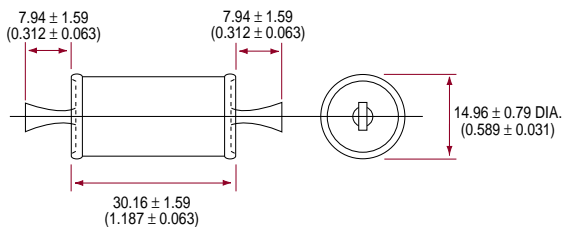
PARAMETER	CONDITIONS	SYMBOL	UBT-7.5 UGT-7.5			UBT-10.0 UGT-10.0			UBT-12.0 UGT-12.0			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>												
DC Breakdown	100V/s	$V_{BD}$	6.75	7.50	8.25	9.0	10.0	11.0	10.8	12.0	13.2	kV
Impulse Breakdown	5KV/ $\mu$ s	$V_{bd}$	-	-	4.8	-	-	6	-	-	7.2	kV
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	5.0	-	-	3.0	-	-	3.0	pF
<b>Life Ratings</b>												
Surge Life	10kA (PW=5 $\mu$ s)	-	1300	-	-	1300	-	-	1300	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UBT-15.0 UGT-15.0			UBT-20.0 UGT-20.0			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
<b>Device Specifications</b>									
DC Breakdown	100V/s	$V_{BD}$	13.5	15.0	16.5	18.0	20.0	22.0	kV
Impulse Breakdown	5KV/ $\mu$ s	$V_{bd}$	-	-	18.0	-	-	24.0	kV
Insulation Resistance	100V	IR	$10^{10}$	-	-	$10^{10}$	-	-	$\Omega$
Capacitance	1MHz	C	-	-	2.0	-	-	2.0	pF
<b>Life Ratings</b>									
Surge Life	10kA (PW=5 $\mu$ s)	-	1300	-	-	1300	-	-	surges

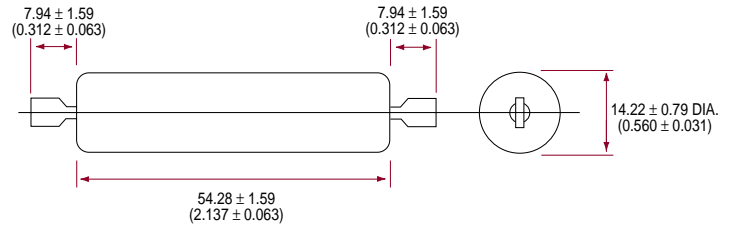
### MECHANICAL DIMENSIONS

DIMENSIONS  
mm  
(inches)

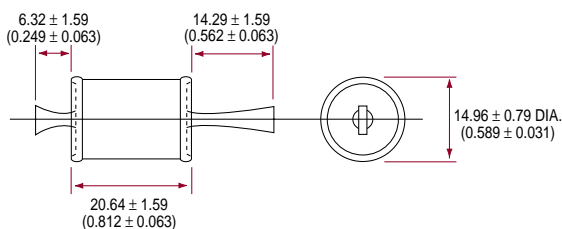
#### UBT SERIES



#### UGT SERIES



#### UBD SERIES



### ORDERING INFORMATION

UNI-IMPS with other breakdown voltages in the 0.55 to 20kV range are available on request. All UNI-IMPs are available with .360 O.D. endcaps. UGTs are also available with .250 O.D. endcaps. UBDs are available with a threaded male termination (#8-20) on one end.

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, UBD-550 is a 550V UBD series device, and UBT-10.0 is a 10kV UBT series device.

UBT- X.X	for 4.0-9.0kV
UBT-XX.X	for 10.0-20.0kV
UGT- X.X	for 4.0-9.0kV
UGT-XX.X	for 10.0-20.0kV

Series ——— Breakdown Voltage  
 UBD ——— See specifications  
 UBT ——— tables  
 UGT