UNI-IMPS

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 (≤120% of typical DC breakdown to 200kV/μs)
- Tight DC breakdown voltage tolerance (±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.)

UNI-IMPS

SPECIFICATIONS

All characteristics at 25˚C

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

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

PARAMETER	CONDITIONS	SYMBOL	UBD-1.2 MIN	UBD-1.2 TYP	UBD-1.2 MAX	UBD-1.5 MIN	UBD-1.5 TYP	UBD-1.5 MAX	UBD-2.0 MIN	UBD-2.0 TYP	UBD-2.0 MAX	UNITS
Device Specifications												
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/µs	V_{bd}	-	-	1.44	-	-	1.80	-	-	2.40	kV
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	15.0	-	-	15.0	-	-	10.0	pF
Life Ratings												
Surge Life	3kA (PW=15µs)	-	1410	-	-	1900	-	-	2400	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UBD-2.5 MIN	UBD-2.5 TYP	UBD-2.5 MAX	UBD-3.0 MIN	UBD-3.0 TYP	UBD-3.0 MAX	UBD-4.0 MIN	UBD-4.0 TYP	UBD-4.0 MAX	UNITS
Device Specifications												
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/µs	V_{bd}	-	-	3.00	-	-	3.60	-	-	4.80	kV
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	10.0	-	-	5.0	-	-	5.0	pF
Life Ratings												
Surge Life	3kA (PW=15µs)	-	2400	-	-	2400	-	-	2400	-	-	surges

PARAMETER	CONDITIONS	SYMBOL	UBT-4.0 UGT-4.0 MIN	UBT-4.0 UGT-4.0 TYP	UBT-4.0 UGT-4.0 MAX	UBT-5.0 UGT5.0 MIN	UBT-5.0 UGT5.0 TYP	UBT-5.0 UGT5.0 MAX	UBT-6.0 UGT-6.0 MIN	UBT-6.0 UGT-6.0 TYP	UBT-6.0 UGT-6.0 MAX	UNITS
Device Specifications												
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/µs	V_{bd}	-	-	4.80	-	-	6.00	-	-	7.20	kV
Insulation Resistance	100V	IR	10^{10}	-	-	10^{10}	-	-	10^{10}	-	-	Ω
Capacitance	1MHz	C	-	-	5.0	-	-	3.0	-	-	3.0	pF
Life Ratings												
Surge Life	10kA (PW=5µs)	-	1300	-	-	1300	-	-	1300	-	-	surges

SPECIFICATIONS

All characteristics at 25˚C

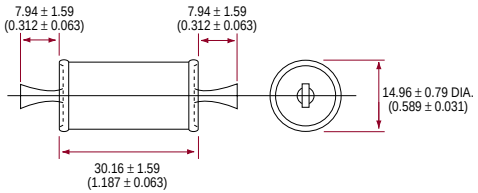
PARAMETER	CONDITIONS	SYMBOL	UBT-7.5 UGT-7.5 MIN	TYP	MAX	UBT-10.0 UGT-10.0 MIN	TYP	MAX	UBT-12.0 UGT-12.0 MIN	TYP	MAX	UNITS
Device Specifications												
DC Breakdown	100V/s	V_{BD}	6.75	7.50	8.25	9.0	10.0	11.0	10.8	12.0	13.2	kV
Impulse Breakdown	5KV/µs	V_{bd}	-	-	4.8	-	-	6	-	-	7.2	kV
Insulation Resistance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

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

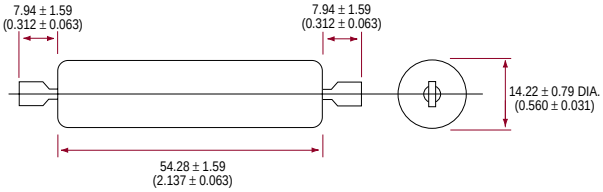
MECHANICAL DIMENSIONS

DIMENSIONS
mm
(inches)

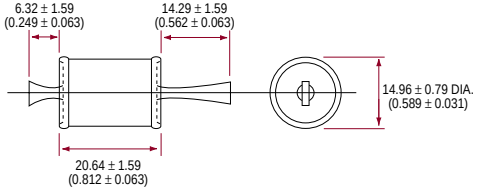
UBT SERIES



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 ≥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
UBD
UBT
UGT

Breakdown Voltage
See specifications tables