

HIGH-ENERGY TRIGGERED SPARK GAPS

TX4.5



DESCRIPTION

CP Clare’s Triggergaps are high-energy spark gaps that are capable of switching stored energy in a fraction of a microsecond. Triggergaps use no standby power, are extremely rugged and require only a low energy high voltage triggering pulse.

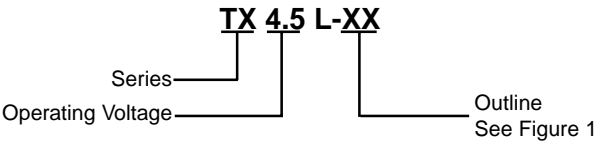
FEATURES

- Rugged ceramic-metal construction
- -55°C to +125°C operating temperature
- Short delay time
- Compact size
- High reliability
- Vibration tested to MIL-STD-202D method 204, test conditions A
- Thermal shock tested per MIL-STD-202D method 107, test condition B
- Mechanical shock tested per MIL-STD-202D method 204, test condition A
- Capable of >2500 discharges

APPLICATIONS

- High current surge generators
- Explosives detonation
 - Exploding Bridge Wire (EBW)
 - Exploding Foil Initiator (EFI)
 - Slapper Detonator
- Electronic Safe and Arm
- Crowbars
- Flash tube triggers
- Rocket motor ignition
- Missile stage separation
- Furnace ignition

ORDERING INFORMATION



STANDARD VOLTAGES

Series or P/N	Self Breakdown Voltage (typ)	Units
TX	4.5	kV

Note: Other voltages are available upon request.

SPECIFICATIONS

PARAMETER ¹	MODE	CONDITION	SYMBOL	MIN	TYP.	MAX	UNITS
Device Specifications							
Self-Breakdown Voltage	A/C	100V/s	E_z	4.3	4.5		kV
Operating Voltage	A/C	$V_{Ebb} = 3000$	E_{bb}	2000		4000	V
Trigger Voltage ²	A/C	$V_{Ebb} = 3000$	E_{trig}		2000		V
Delay Time ³	C	@ E_{bb} min	T_{delay}			1000	ns
	C	@ E_{bb} max				150	
	A	@ E_{bb} min				75	
	A	@ E_{bb} max				50	
Peak Pulse Current	A/C					5	kA
Isolation Resistance		4000V		200			GΩ
Life Ratings							
<u>Standard version</u>							
Discharge life ⁴	A/C	$I_b = 5$ kA Pulse energy = 1.6J $V_{Ebb} = 4000$ Load = 0.25 Ω		2500			Shots
	A/C	$I_b = 5$ kA Pulse energy = 0.7J $V_{Ebb} = 3000$ Load = 0.25 Ω		10,000			Shots

¹ Unless otherwise noted, specifications are determined by testing in the circuit shown in figure 2.

² The trigger voltages given in these tables are the minimum triggering voltages necessary for triggering at the corresponding operating voltage limits. As the applied trigger voltage increases, the trigger voltage required for triggering decreases. It is assumed that the trigger is applied across the trigger and adjacent main electrodes (mode C, see figure 3) or applied across the trigger electrode and opposite main electrodes (mode A, see figure 3)

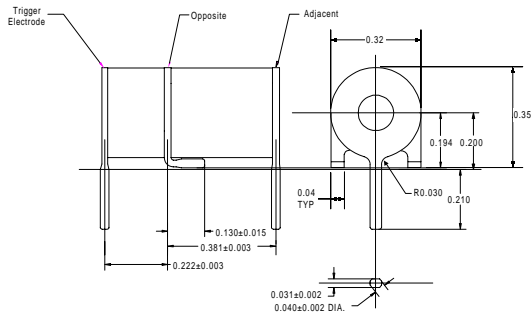
³ Delay time is defined as the delay between the time the trigger voltage reaches the point of breakover and the time the arc in the main gap begins conduction.

⁴ Product experiences a less than 10% reduction in self breakdown voltage after test.

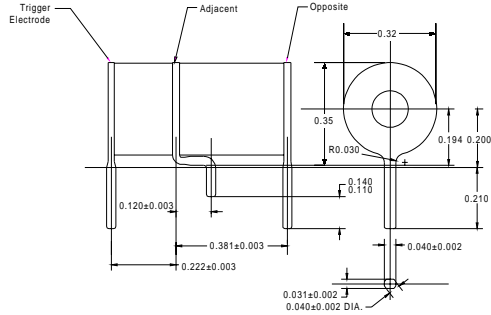
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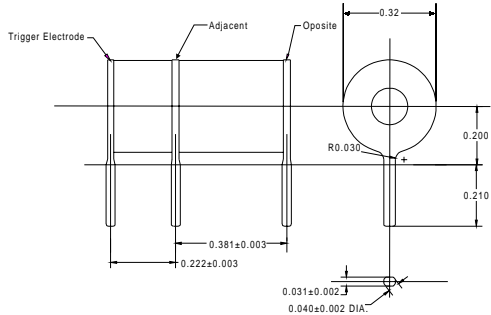
01 Outline



02 Outline



05 Outline



S Outline

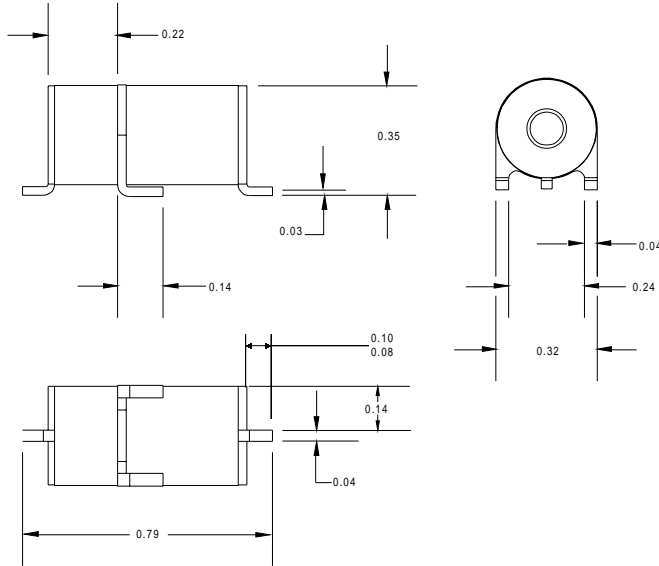


Figure 1
Construction: Ceramic with tin/lead plated metal electrodes, hermetically sealed.

TEST CIRCUIT

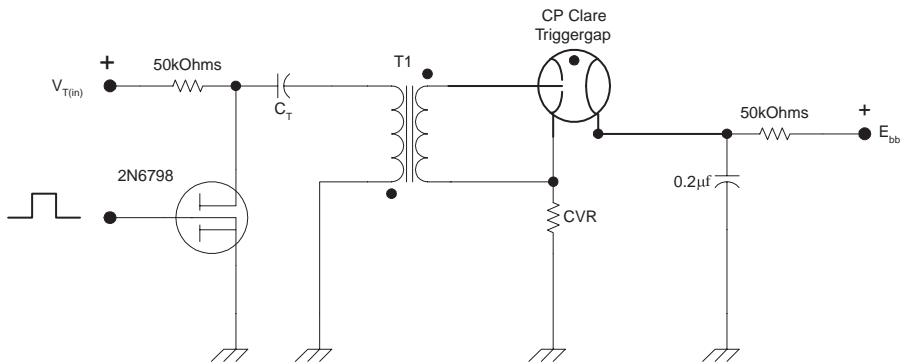


Figure 2

MODE DESIGNATIONS

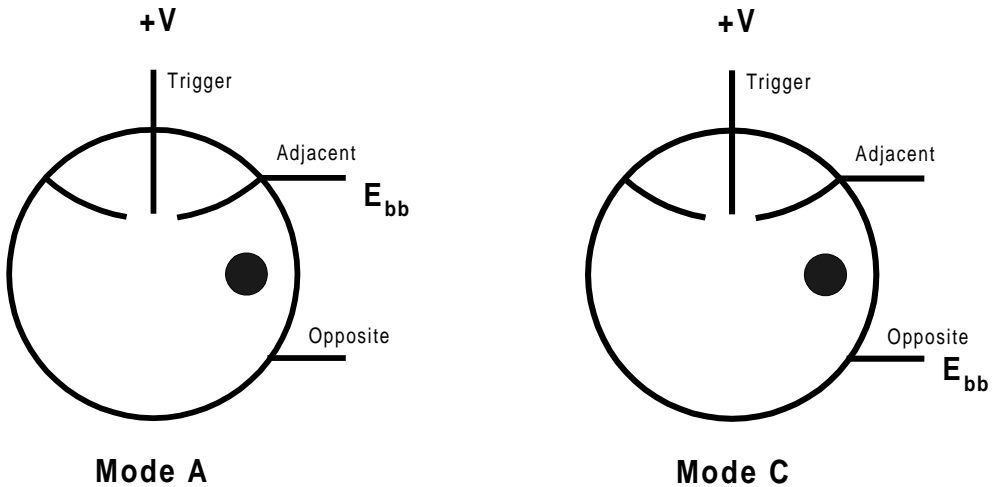


Figure 3