

# THYRISTOR - SCR

T-25-23

GENERAL ELECTRIC

SLTT

6RT55HK  
6RT55HK04D11  
WITH G2 OPTION

## SEPARATE LIGHT TRIGGERED THYRISTOR

The 6RT55 SLTT is an optically fired pilot thyristor designed to provide electrical trigger pulses to the gate of a companion power thyristor for the purpose of isolating the gating circuit from the electrical power system. It has an asymmetrical voltage blocking characteristic requiring a series diode for reverse blocking and is normally used in the anode to the electrical gate with appropriate current limiting resistance. It is supplied in a dual in-line package (DIP) together with a spring clamp for mounting to a commercially available heat dissipator. It is thermally rated for pulse duty only. 6RT55HK04D11 denotes a 6RT55HK supplied mounted to an extruded aluminum heat dissipator. G2 option provides increased light sensitivity for triggering with commercial LED's.

### SUMMARY OF RATINGS AND CHARACTERISTICS

Peak Repetitive OFF-STATE Blocking	---- $V_{DRM}$	---- 4500V
Working Peak OFF-STATE Voltage	---- $V_{DWM}$	---- 3150V
Peak Repetitive Reverse Blocking Voltage	--- $V_{RRM}$	---- 200V
Non-repetitive Reverse Blocking Voltage	--- $V_{RSM}$	---- 500V
Critical Rate of Rise of Off-State Voltage	dv/dt	---- 4000V/us

Light Trigger Requirement at  $V_D = 50V - 3150V$

- Mating optical connector - Amp Optimate 1-530530-3
- Low loss, large core fiber Quartz Products QSF600A or equivalent
- Pulsed Cesium-vapor light source (Refer to page 7 and other General Electric CR&D Reports/EPRI Contracts T1578CRD106/79CRD122)
- Light Emitting Diodes (consult factory - for trial use only) with 6RT55HKG2 or 6RT55HK04D11G2) which are more light sensitive
- Light intensity requirements (refer to page 6)

	STD. UNITS	G2 UNITS
Max. critical light intensity to trigger	--- 110mV	50mV
Nom. overdrive light intensity for operation	--- 200mV	(later)
Max. withstand light intensity (non-trigger)	--- 1mV	None

On-state Voltage 500ma DC at 25°C,  $V_{TM}$  .....2.4V  
 Peak Repetitive Current Rating  $V_D = 2500V$ , 60 HZ, 18A (3 $\mu$ s)  
 Peak Non-repetitive Current Rating,  $V_D = 4200V$  30A (3 $\mu$ s)  
 Maximum Repetitive Rate of Rise of Current,  $V_D = 2500V$ , 70A/ $\mu$ s

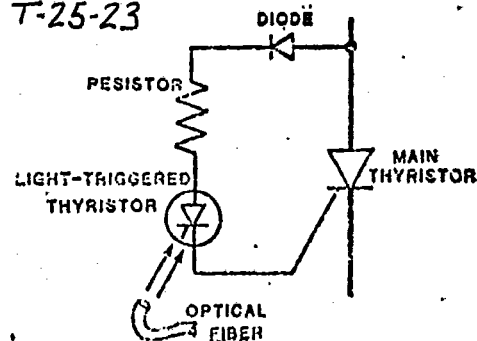
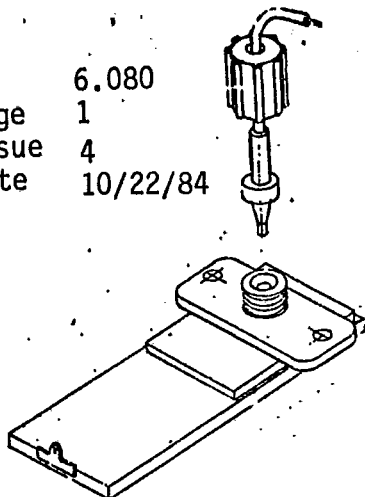
#### Power Dissipation:

- 18A(3 $\mu$ s) from  $V_{DWM} = 3150V$  (100 $\Omega$  series resistor) 0.8W
- Off-State leakage at dark gate - 0.45W
- " " " with keep alive light - 1.65W

Thermal Resistance Junction to Sink,  $R_{thJS}$  - < 3°C/W

Operating Junction Temperature ----- 0 - 85°C

PG 6.080  
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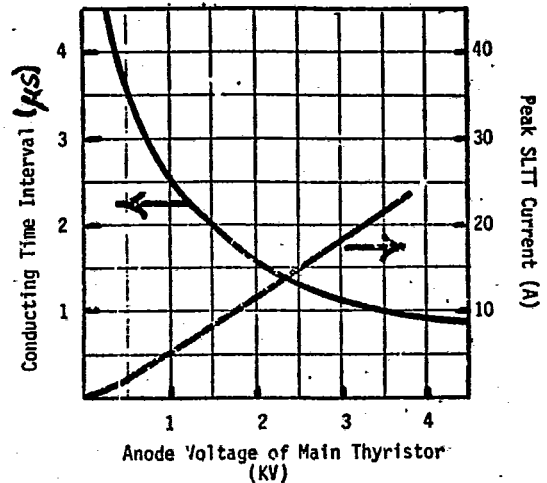
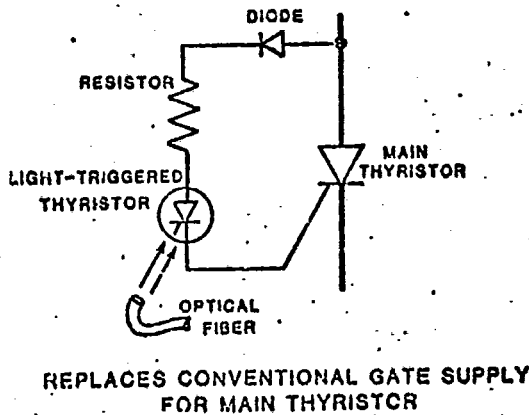
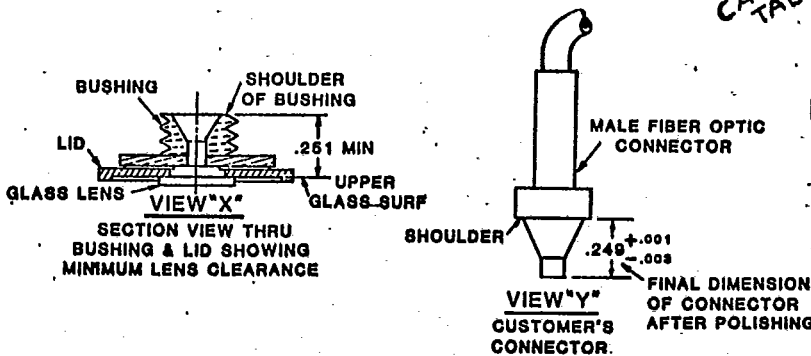
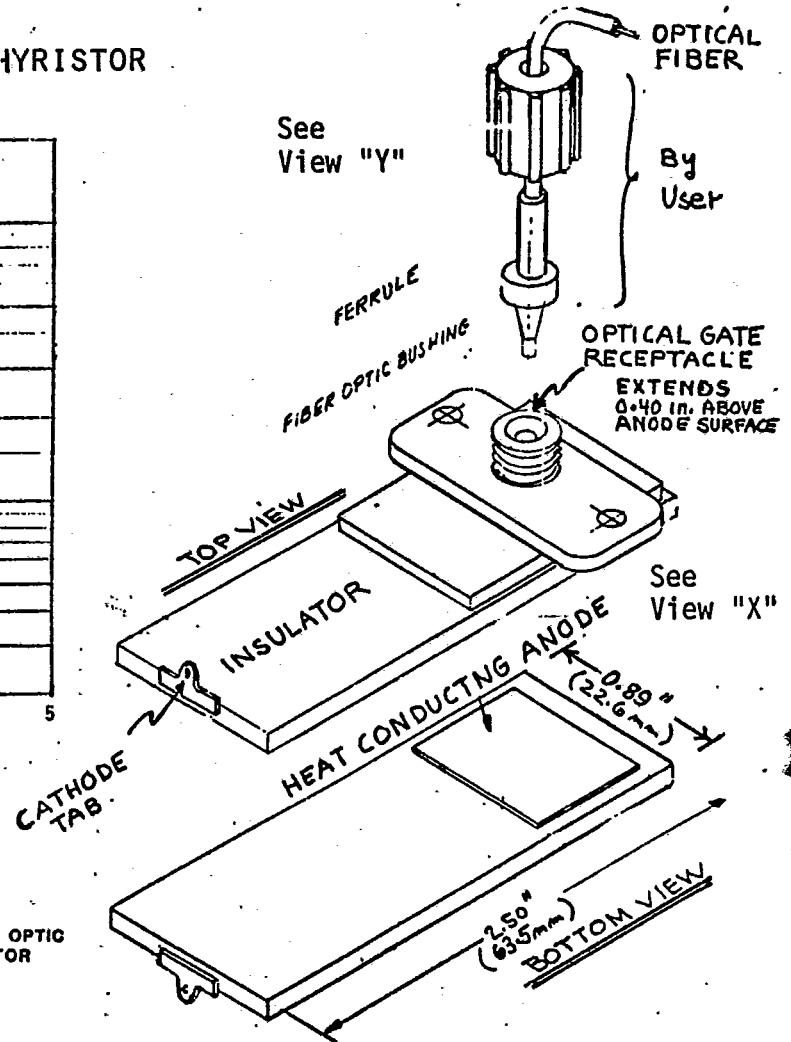
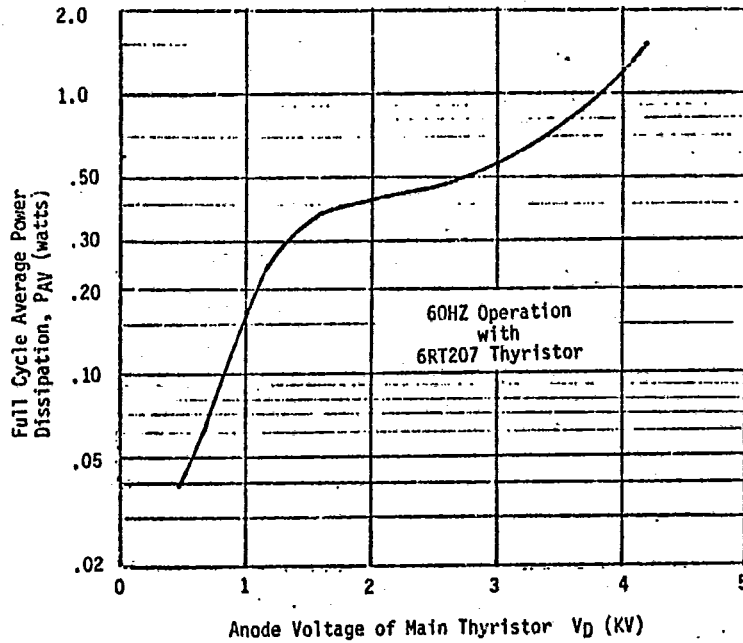




PRODUCT INFORMATION

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6RT55 SEPARATE LIGHT TRIGGER THYRISTOR



Typical Design Duty Cycle for Industrial Life Expectancy @ 50/60 HZ