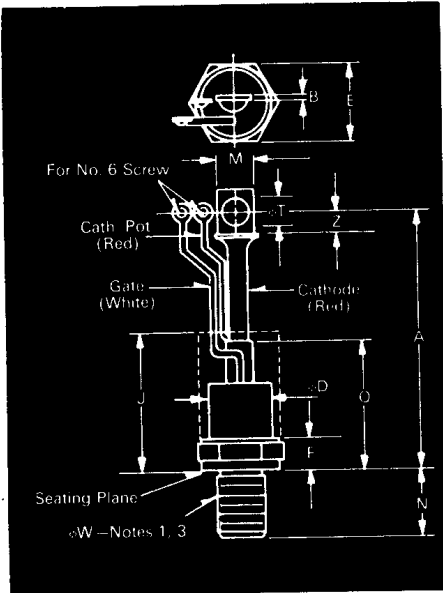


Fast Switching SCR T607_13

125A Avg.
(200 RMS)
Up to 1200 Volts
10-50 μ s

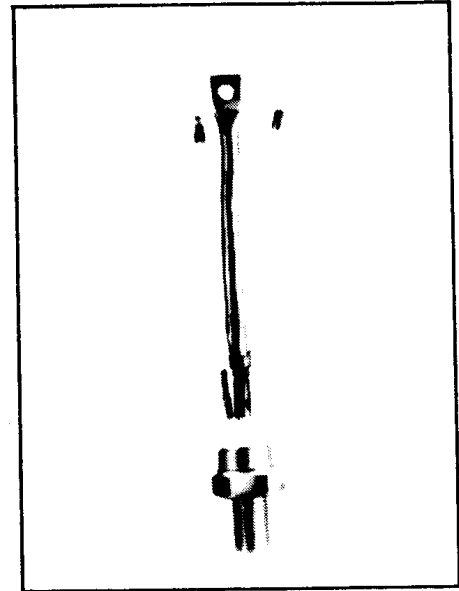


Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	7.750	8.100	196.85	205.74
A ₁	7.750	8.100	196.85	205.74
B	.063	.172	1.60	4.37
ϕ D	.980	1.090	24.89	27.69
E	1.212	1.250	30.78	31.75
F	.250	.630	6.35	16.00
J	3.25		82.55	
M	.530	.755	13.46	19.18
N	1.040	1.077	26.42	27.36
Q		2.250		57.15
ϕ T	.260	.290	6.60	7.37
Z	.340		8.64	
ϕ W	3/16 UNF-2A			

Creep Distance—.75 in. min. (19.05 mm).
Strike Distance—.69 in. min. (17.53 mm).

(In accordance with NEMA standards.)
Finish—Nickel Plate.
Approx. Weight—8 oz. (227 g).

- Complete threads to extend to within 2 1/2 threads of seating plane.
- Angular orientation of terminals is undefined.
- Pitch diameter of 3/16 UNF-2A (coated) threads (ASA B1.1—1960).
- Dimension "J" denotes seated height with leads bent at right angles.



Conforms to TO-93 Outline

Features:

- Center fire, di/dynamic gate
- High di/dt with soft gate control
- High frequency operation
- Sinusoidal waveform operation to 20 KHz
- Rectangular waveform operation to 20 KHz
- Low dynamic forward voltage drop
- Low switching losses at high frequency
- Westinghouse Lifetime Guarantee

Applications:

- Inverters for UPS
- AC motor control
- Induction heating
- Cycloconverters
- Choppers

Ordering Information

Type	Voltage		Current		Turn-off		Gate Current		Leads	
	V _{DRM} and V _{RRM} (V)	Code	I _{T(av)} (A)	t _{off} (μsec)	t _q (μsec)	Code	I _{GT} (ma)	Code	Case	Code
T607	100	01	125	13	10	3	150	4	TO-93	BT
	200	02			15					
	300	03			20					
	400	04			25					
	500	05			30					
	600	06			40					
	700	07			50					
	800	08								
	900	09								
	1000	10								
	1100	11								
	1200	*12								

Example

Obtain optimum device performance for your application by selecting proper Order Code.

Type T607 rated at 125A average with V_{DRM} = 1000V, I_{GT} = 150 ma, t_q = 30 μ sec and standard flex lead — order as

*for 10 μ sec turn-off, consult factory

Type	Voltage	Current	Turn Off	Gate Current	Leads
T 6 0 7	1 0	1 3	5	4	B T

**125A Avg.
(200 RMS)
Up to 1200 Volts
10-50 μ s**

**Fast Switching
SCR
T607_13**

Voltage

Blocking State Maximums ^② ($T_J = 125^\circ\text{C}$)

Repetitive peak forward blocking voltage, V	V_{DRM}	100	200	300	400	500	600	700	800	900	1000	1100	1200
Repetitive peak reverse voltage, V	V_{RRM}	100	200	300	400	500	600	700	800	900	1000	1100	1200
Non-repetitive transient peak reverse voltage, V $t \leq 5.0$ m sec	V_{RSM}	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Forward leakage current, mA peak	I_{DRM}	←----- 25 ----->											
Reverse leakage current, mA peak	I_{RRM}	←----- 25 ----->											

Current

Conducting State Maximums
($T_J = 125^\circ\text{C}$)

Symbol	T607_13
RMS forward current, A	$I_T(\text{rms})$ 200
Ave. forward current, A	$I_T(\text{av})$ 125
One-half cycle surge current ^③ , A	I_{TSM} 3500
I^2t for fusing (for times ≥ 8.3 ms), A ² -sec.	I^2t 50,000
Forward voltage drop at $I_{TM} = 625$ A and $T_J = 25^\circ\text{C}$, V	V_{TM} 2.35
Min. repetitive di/dt ^{④⑤} , A/ μ sec	di/dt 200

Switching

($T_J = 25^\circ\text{C}$)

Symbol	T607_13
Max. turn-off time, $I_T = 150$ A, $T_J = 125^\circ\text{C}$, $di/dt = 12.5$ A/ μ sec, reapplied $dv/dt =$ 20V/ μ sec linear to .8V DRM , μ sec ^{⑥⑦}	t_q 10 to 50
Typ. turn-on-time, $I_T = 100$ A, $V_D = 100$ V, μ sec	t_{on} 3.5
Min. critical dv/dt , exponential to V_{DRM} , $T_J = 125^\circ\text{C}$, V/ μ sec ^{⑧⑨}	dv/dt 300
Min. di/dt non-repetitive, ^{⑩⑪} A/ μ sec	di/dt 800

Gate

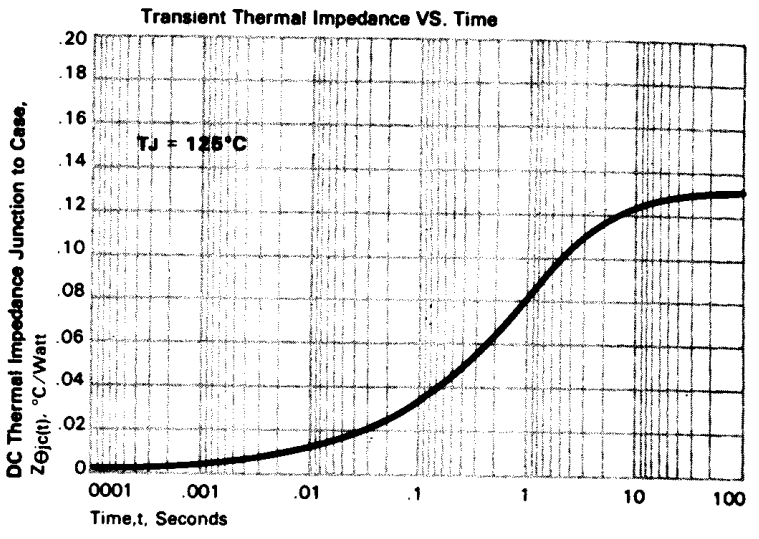
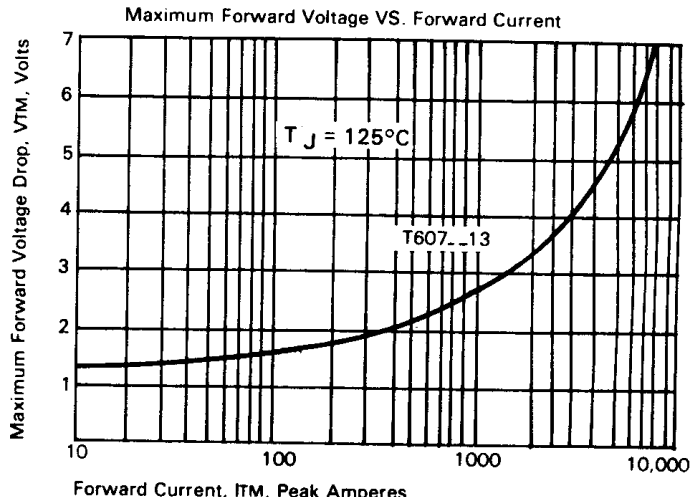
Maximum Parameters
($T_J = 25^\circ\text{C}$)

Symbol	T607_13
Gate current to trigger at $V_D = 12$ V, mA	I_{GT} 150
Gate voltage to trigger at $V_D = 12$ V, V	V_{GT} 3
Non-triggering gate voltage, $T_J = 125^\circ\text{C}$, and rated V_{DRM} , V	V_{GDM} 0.15
Peak forward gate current, A	I_{GTM} 4
Peak reverse gate voltage, V	V_{GRM} 5
Peak gate power, Watts	P_{GM} 16
Average gate power, Watts	$P_{G(av)}$ 3

Thermal and Mechanical

Symbol	T607_13
Min., Max. oper. junction temp., $^\circ\text{C}$	T_J -40 to +125
Min., Max. storage temp., $^\circ\text{C}$	T_{stg} -40 to +150
Max. mounting torque, in lb. ^⑬	300
Max. Thermal resistance ^⑭	
Junction to case, $^\circ\text{C}/\text{Watt}$	$R_{\theta JC}$.13
Case to sink, lubricated, $^\circ\text{C}/\text{Watt}$	$R_{\theta CS}$.08

- ① Consult recommended mounting procedures.
- ② Applies for zero or negative gate bias.
- ③ Per JEDEC RS-397, 5.2.2.1.
- ④ With recommended gate drive.
- ⑤ Higher dv/dt ratings available, consult factory.
- ⑥ Per JEDEC standard RS-397, 5.2.2.6.
- ⑦ For operation with antiparallel diode, consult factory.

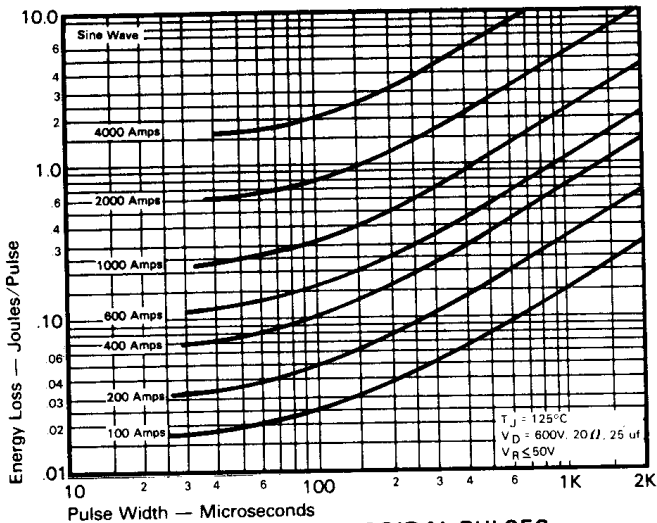


FAST SWITCHING THYRISTORS

Fast Switching SCR T607_13

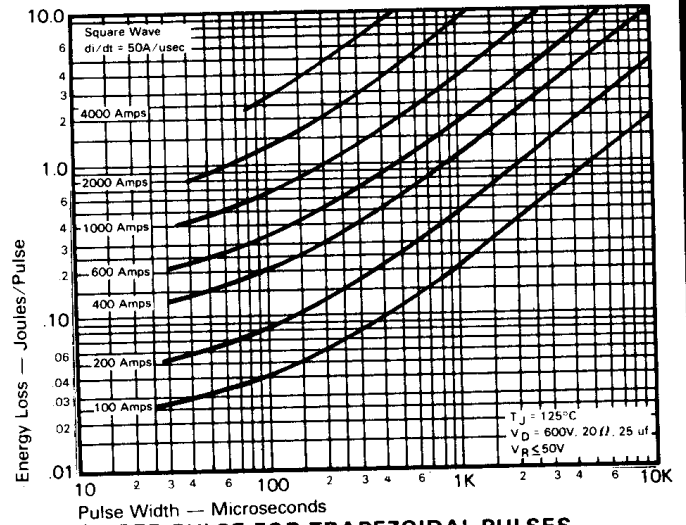
125A Avg.
(200 RMS)
Up to 1200 Volts
10-50 μ s

Sinusoidal Current Data

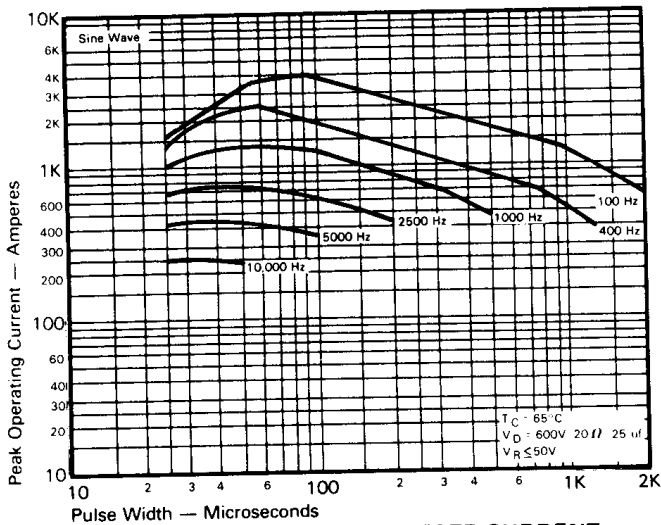


ENERGY PER PULSE FOR SINUSOIDAL PULSES

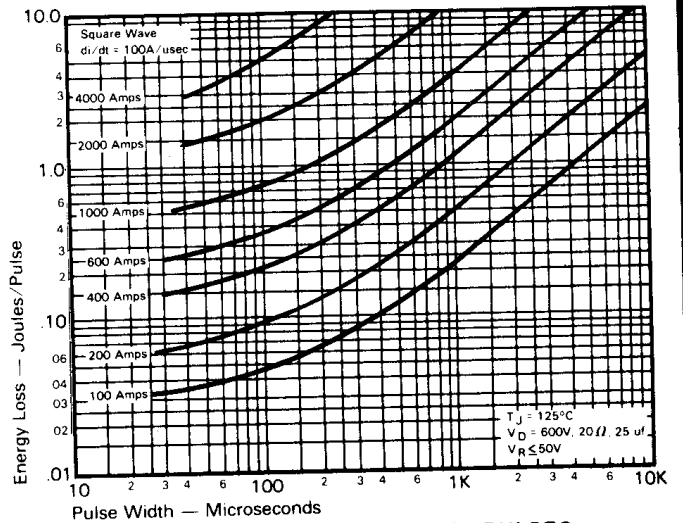
Trapezoidal Wave Current Data



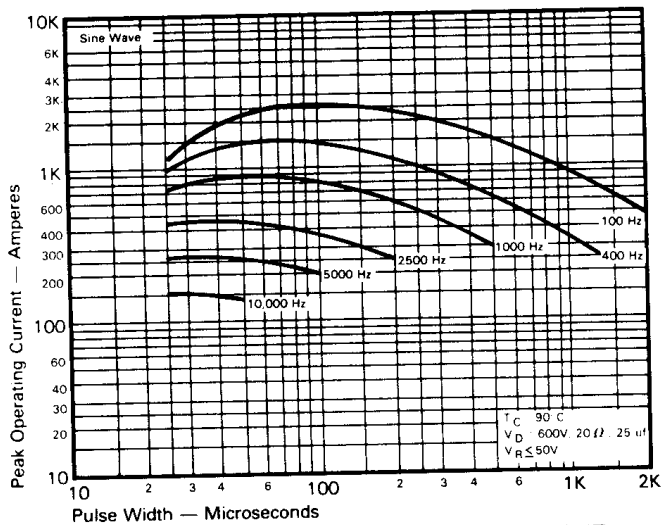
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 50\text{A/usec}$)



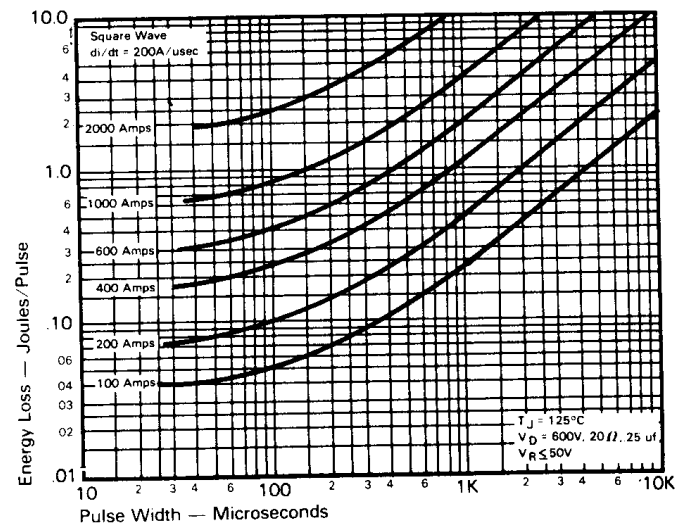
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($T_C = 65^\circ\text{C}$)



ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 100\text{A/usec}$)



MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($T_C = 90^\circ\text{C}$)



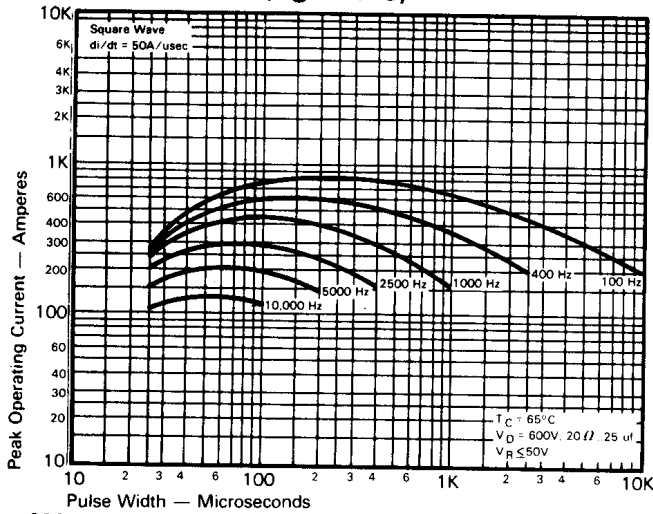
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 200\text{A/usec}$)

FAST SWITCHING
THYRISTORS

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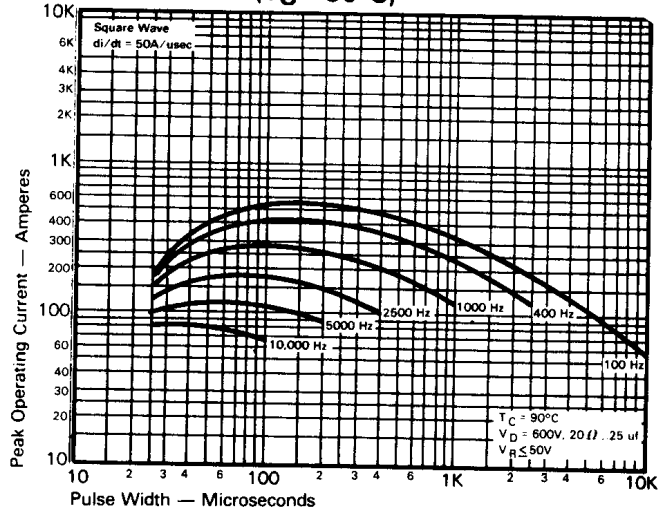
Fast Switching
SCR
T607-13

Trapezoidal Wave Current Data
($T_C = 65^\circ\text{C}$)

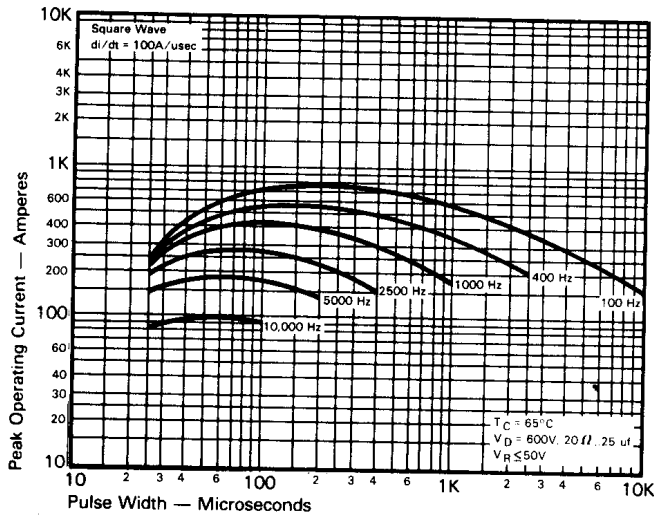


MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 50\text{A/usec}$)

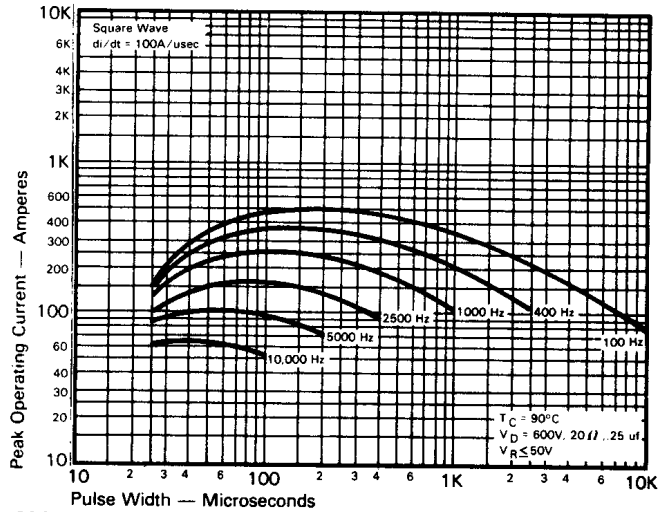
Trapezoidal Wave Current Data
($T_C = 90^\circ\text{C}$)



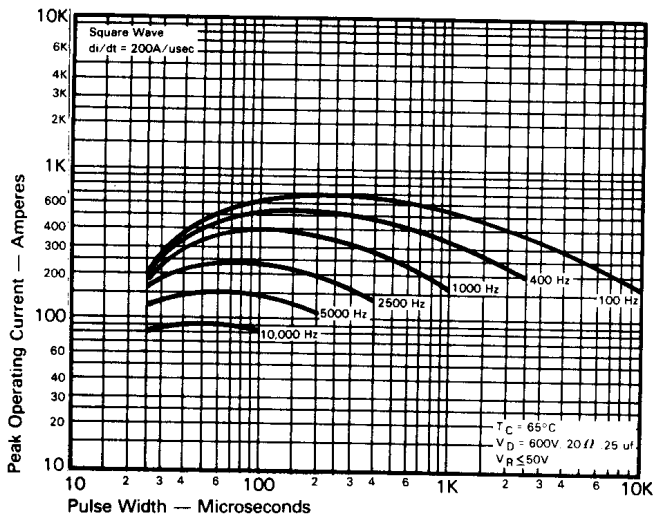
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 50\text{A/usec}$)



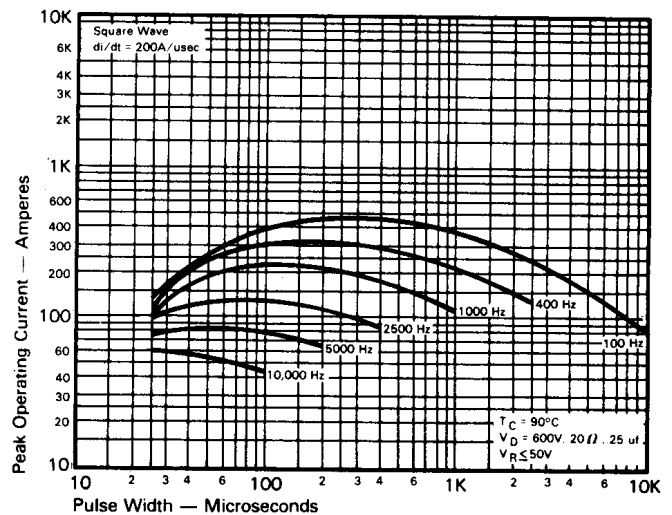
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 100\text{A/usec}$)



MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 100\text{A/usec}$)

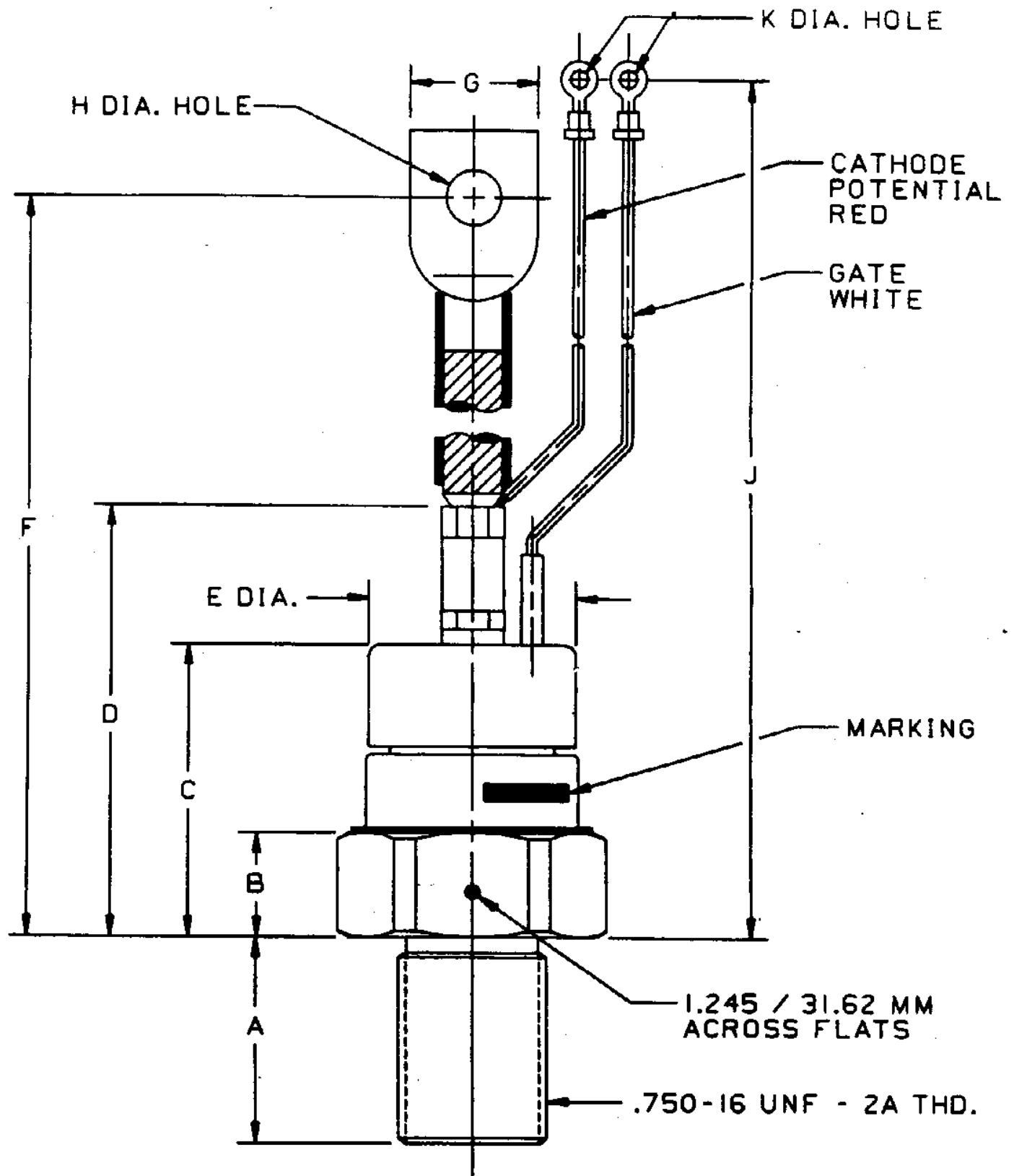


MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 200\text{A/usec}$)



MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 200\text{A/usec}$)

FAST SWITCHING THYRISTORS



CASE NUMBER T60
NOMINAL DIMENSIONS

STRIKE DISTANCE = .65 INCH / 16.5 MM MIN.
CREEPAGE DISTANCE = .65 INCH / 16.5 MM MIN.

SYM.	A	B	C	D	E	F	G	H	J	K
INCHES	1.06	.55	1.50	2.25	1.07	7.91	.63	.281	7.91	.146
MM	26.9	14.0	38.1	57.2	27.2	200.9	16.0	7.14	200.9	3.71

ALL DIMENSIONS ARE REFERENCE