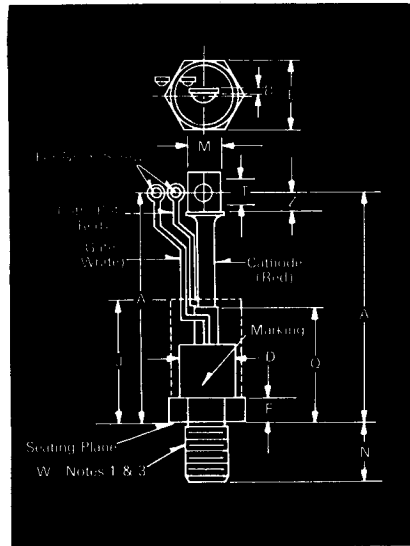


Fast Switching SCR T707_33

325A Avg.
(500 RMS)
Up to 800 Volts
10-50 μ s



T70 Outline

Features:

- Center fired di/namic 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

Ordering Information

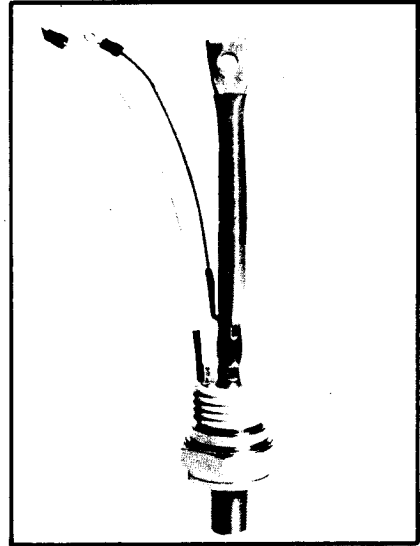
Type	Voltage		Current		Turn-off		Gate current		Leads	
Code	VDRM and VRRM (V)	Code	IT(av) (A)	Code	tq usec	Code	IGT (ma)	Code	Case	Code
T707	100	01	325	33	10	8	150	4	T70	BY
	200	02			15	7				
	300	03			20	6				
	400	04			25	5				
	500	05			30	4				
	600	06			40	3				
	700	07			50					
	800	08								

Example

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

Type T 707 rated at 325A average with V_{DRM} = 700V.
I_{GT} = 150 ma, t_q = 10 μ sec and standard flex lead — order as

Type	Voltage	Current	Turn Off	Gate Current	Leads
T 7 0 7	0 7	3 3	8	4	B Y



**325A Avg.
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10-50 μ s**

**Fast Switching
SCR
T707_33**

Voltage

Blocking State Maximums^① ($T_J = 125^\circ\text{C}$)

Repetitive peak forward blocking voltage, V ...
Repetitive peak reverse voltage V ...
Non-repetitive transient peak reverse voltage,
 $t \leq 5.0 \text{ msec}$, V ...
Forward leakage current, mA peak ...
Reverse leakage current, mA peak ...

Symbol

V_{DRM}	100	200	300	400	500	600	700	800
V_{RRM}	100	200	300	400	500	600	700	800
V_{RSM}	200	300	400	500	600	700	800	900
I_{DRM}					30			
I_{RRM}					30			

Current

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

RMS forward current, A ...
Ave. forward current, A ...
One-half cycle surge current^③, A ...
 I^2t for fusing (for times $\geq 8.3 \text{ ms}$)
A² sec. ...
Forward voltage drop at $I_T = 625 \text{ A}$
and $T_J = 25^\circ\text{C}$, V ...
Min. repetitive di/dt , A/ μ sec ...
^{①②④}

Symbol

T707_33

$I_{T(rms)}$	500
$I_{T(av)}$	325
I_{TSM}	8000
I^2t	265000
V_{TM}	1.40
di/dt	400

Switching

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

Max. turn-off time, $I_T = 400 \text{ A}$,
 $T_J = 125^\circ\text{C}$, $di_R/dt = 25$
A/ μ sec, reappplied $dv/dt =$
20V/ μ sec. linear to .8V V_{DRM} , μ sec^{①②} ...
Typ. turn-on time, $I_T = 1000 \text{ A}$,
 $V_D = 300 \text{ V}$, μ sec ...
Min. critical dv/dt , exponential to V_{DRM} ,
 $T_J = 125^\circ\text{C}$, V/ μ sec^{②④} ...
Min. di/dt , non-repetitive,^{①②④}
A/ μ sec ...

Symbol

t_q	10 to 50
t_{on}	3.0
dv/dt	300
di/dt	800

Gate

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

Gate current to trigger at $V_D = 12 \text{ V}$, mA ...
Gate voltage to trigger at $V_D = 12 \text{ V}$, V ...
Non-triggering gate voltage, $T_J = 125^\circ\text{C}$,
and rated V_{DRM} , V ...
Peak forward gate current, A ...
Peak reverse gate voltage, V ...
Peak gate power, Watts ...
Average gate power, Watts ...

Symbol

I_{GT}	150
V_{GT}	3
V_{GDM}	0.15
I_{GTM}	4
V_{GRM}	5
P_{GM}	16
$P_{G(av)}$	3

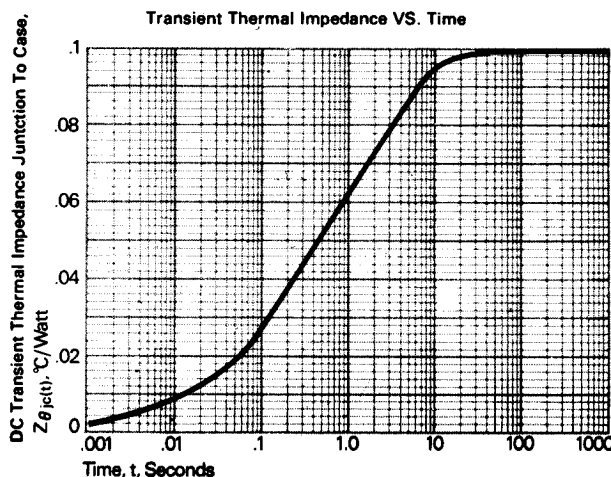
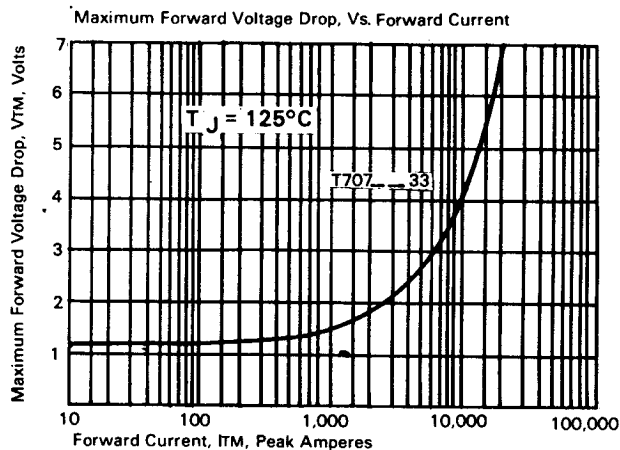
Thermal and Mechanical

Min., Max. oper. junction temp., $^\circ\text{C}$...
Min., Max. storage temp., $^\circ\text{C}$...
Max. mounting torque, in lb. ^① ...
Max. Thermal resistance ^①
Junction to case, $^\circ\text{C}/\text{Watt}$...
Case to sink, lubricated, $^\circ\text{C}/\text{Watt}$...

Symbol

T_J	-40 to +125
T_{stg}	-40 to +150
	360
$R_{\theta JC}$	.10
$R_{\theta CS}$	.05

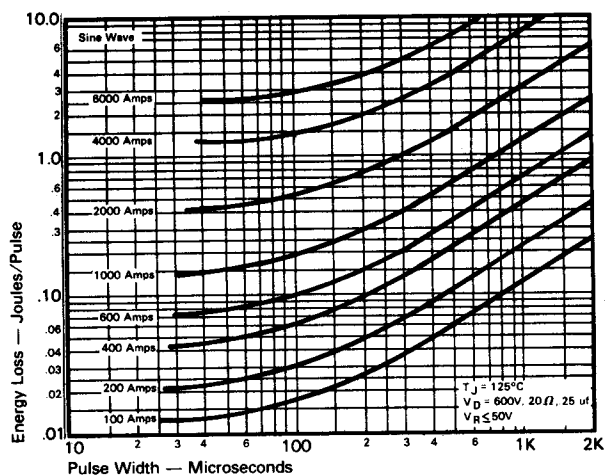
- ① Consult recommended mounting procedures.
- ② Applies for zero or negative gate bias.
- ③ Per JEDEC RS-397, 5.2.2.1.
- ④ With recommended gate drive.
- ⑤ Higher dv/dt ratings available, consult factory.
- ⑥ Per JEDEC standard RS-397, 5.2.2.6.
- ⑦ For operation with antiparallel diodes, consult factory.



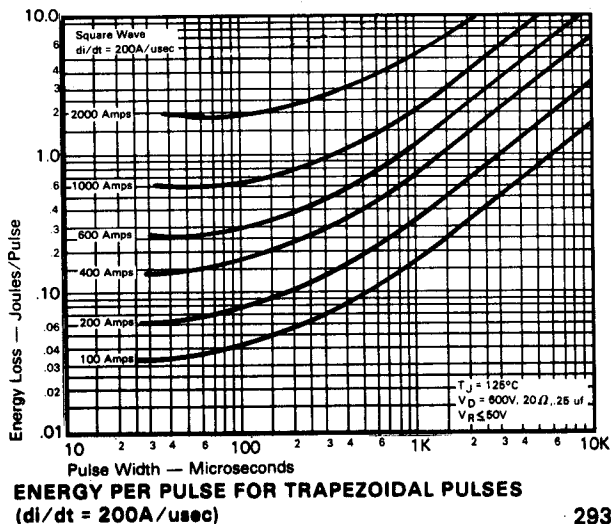
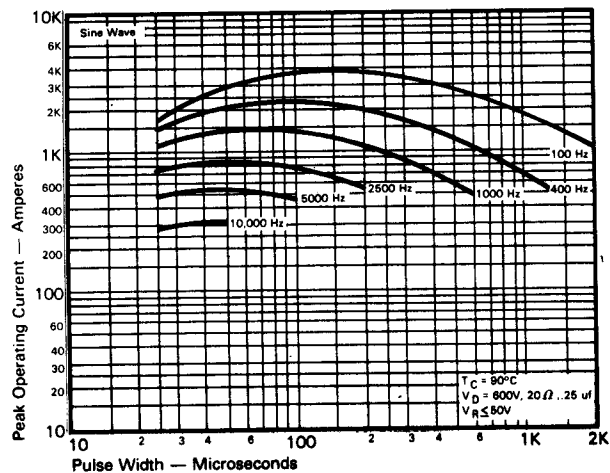
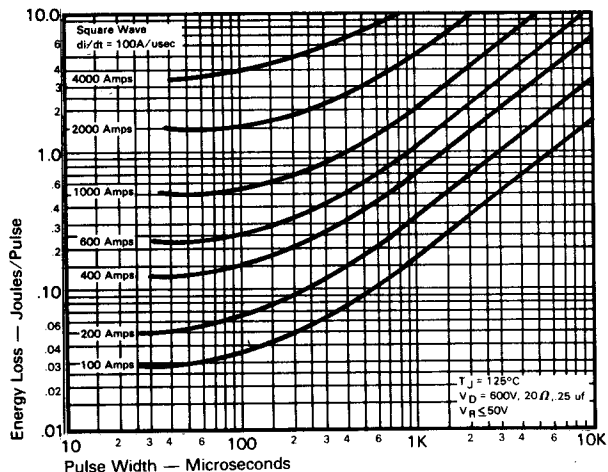
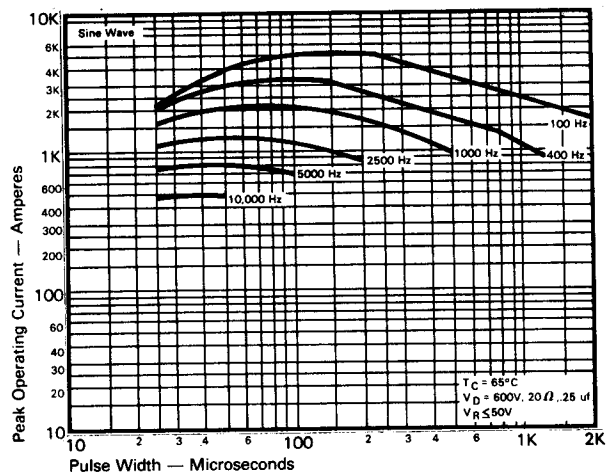
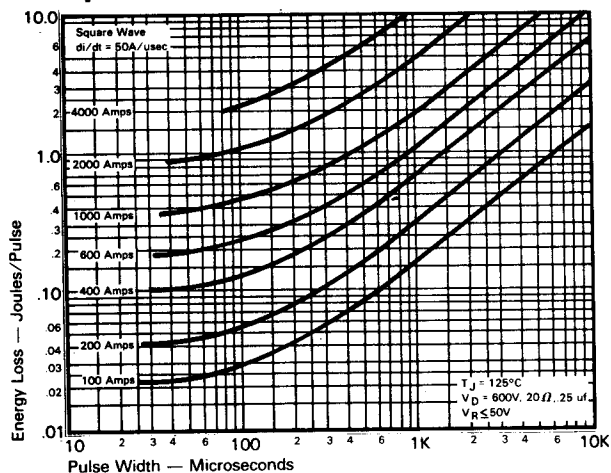
Fast Switching SCR T707_33

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10-50 μ s

Sinusoidal Current Data



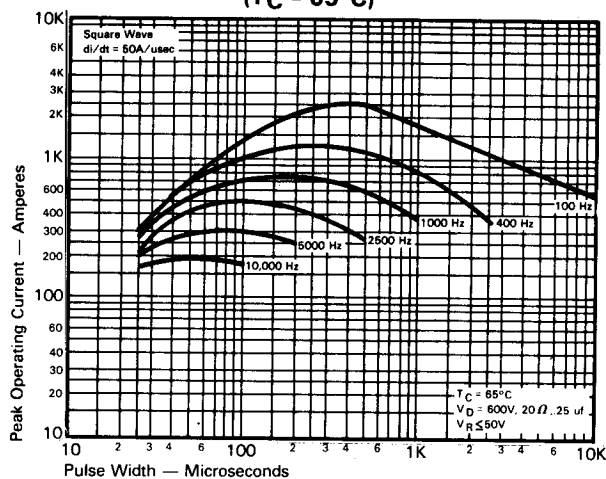
Trapezoidal Wave Current Data



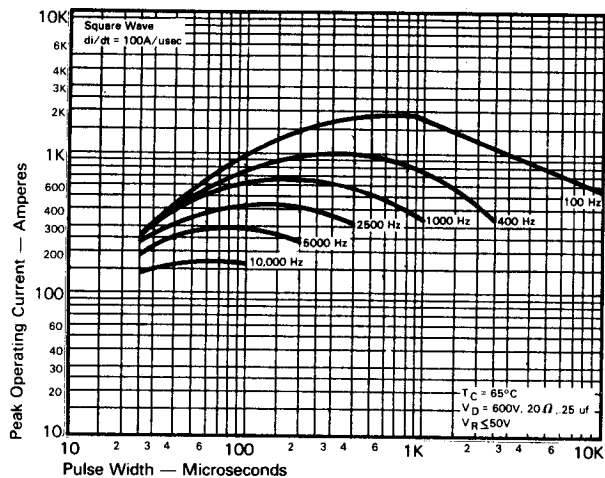
325A Avg.
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Fast Switching
SCR
T707-33

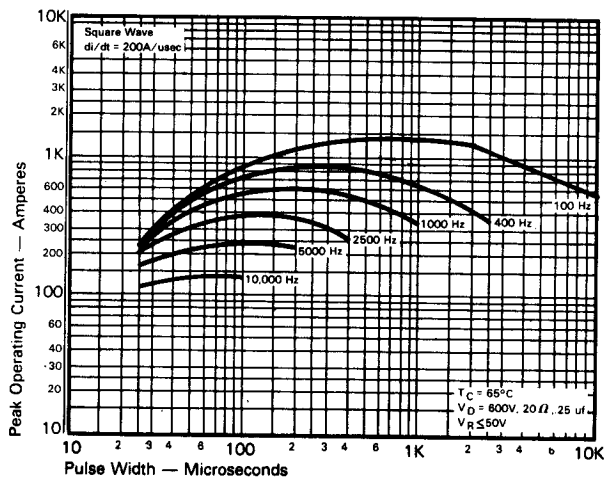
Trapezoidal Wave Current Data ($T_C = 65^\circ\text{C}$)



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

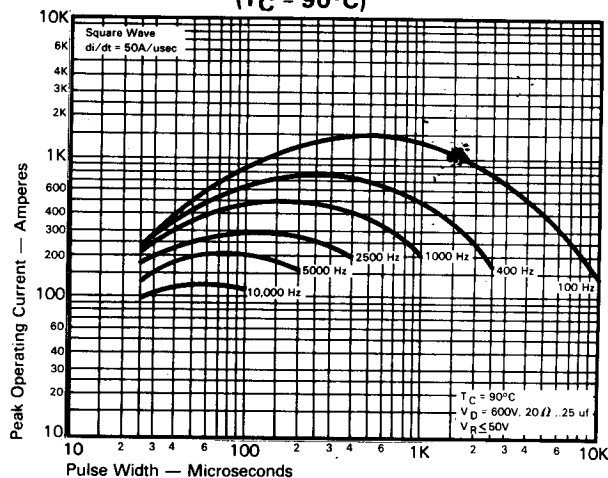


**MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($di/dt = 100\text{A}/\mu\text{sec}$)**

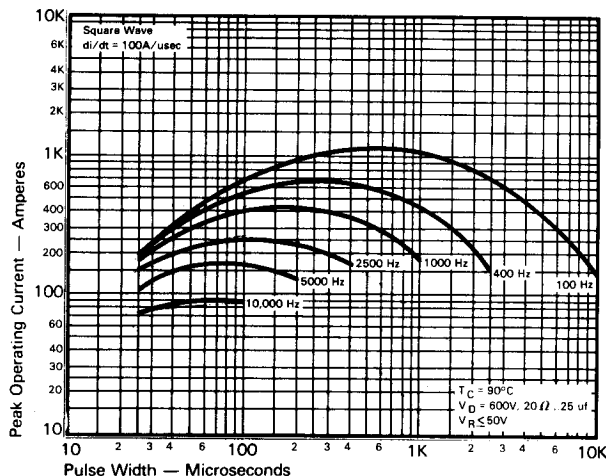


**MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($di/dt = 200\text{A}/\mu\text{sec}$)**

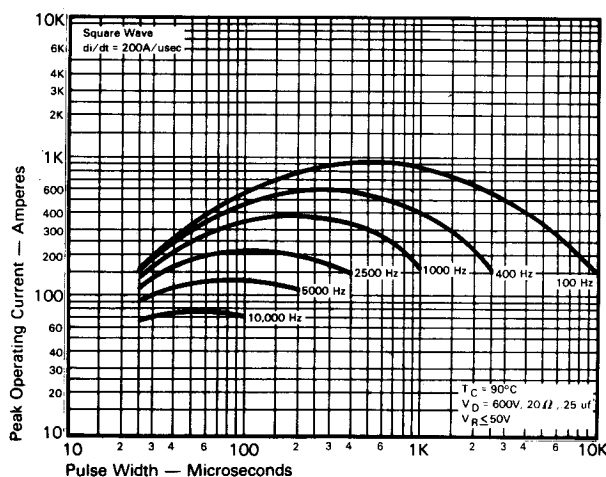
Trapezoidal Wave Current Data ($T_C = 90^\circ\text{C}$)



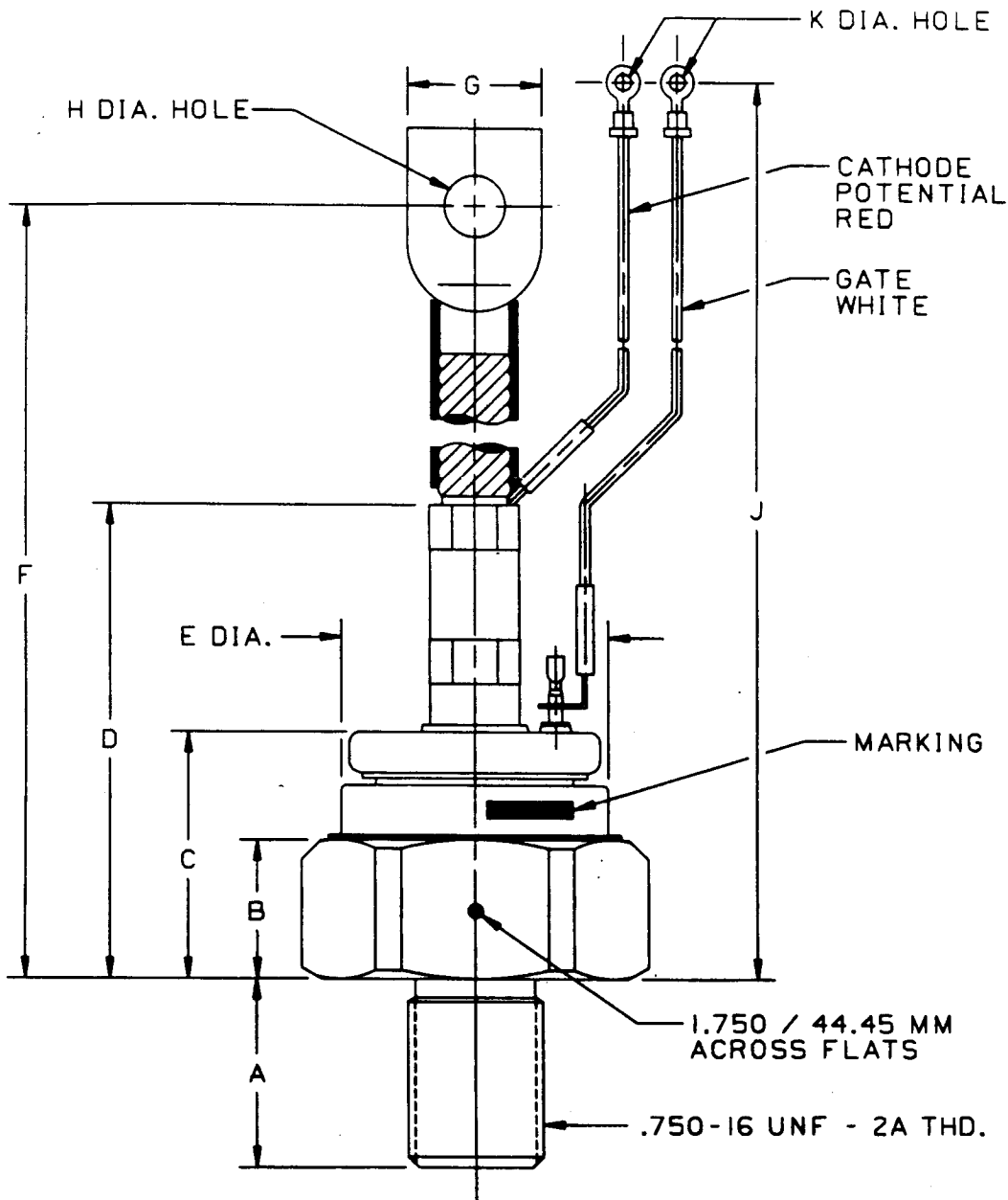
**MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($di/dt = 50\text{A}/\mu\text{sec}$)**



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



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



CASE NUMBER T70
NOMINAL DIMENSIONS

STRIKE DISTANCE = .43 INCH / 10.9 MM MIN.
CREEPAGE DISTANCE = .43 INCH / 10.9 MM MIN.

SYM.	A	B	C	D	E	F	G	H	J	K
INCHES	1.06	.78	1.41	2.74	1.49	9.66	.73	.343	10.06	.146
MM	26.9	19.8	35.8	69.6	37.8	245.4	18.5	8.71	255.5	3.71

ALL DIMENSIONS ARE REFERENCE