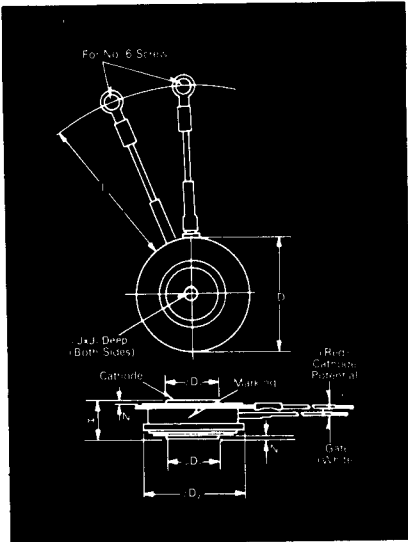


Fast Switching SCR T627__20

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



Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
ϕD	1.610	1.650	40.89	41.91
ϕD_1	.745	.755	18.92	19.18
ϕD_2	1.420	1.460	36.07	37.08
H	.500	.560	12.70	14.22
ϕJ	.135	.145	3.43	3.68
J_1	.072	.082	1.83	2.08
L	7.75	8.50	196.85	215.90
N	.030		.76	

Creep Distance—.34 in. min. (8.64 mm).

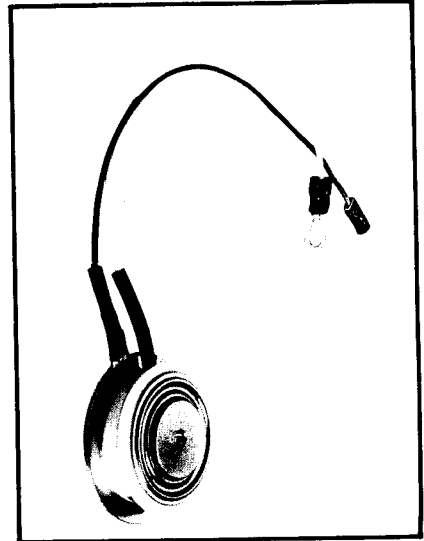
Strike Distance—.26 in. min. (6.60 mm).

(In accordance with NEMA standards.)

Finish—Nickel Plate.

Approx. Weight—2.3 oz. (66 g).

1. Dimension "H" is clamped dimension.



T62 Outline

Features:

- Center fired 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

Applications:

- Inverters for
 - Ups
 - Induction Heating
 - Motor Control
- Choppers
- Crowbars

Ordering Information

Type	Voltage		Current		Turn-off		Gate Current		Leads	
Code	V_{DRM} and V_{RRM} (V)	Code	$I_{T(av)}$ (A)	Code	t_q μ sec	Code	I_{GT} (ma)	Code	Case	Code
T627	100	01	200	20	10	6	150	4	T62	DN
	200	02			15	7				
	300	03			20	8				
	400	04			30	8				
	500	05			40	4				
	600	06			50	3				
	700	07								
	800	08								
	900	09								
	1000	10								
	1100	11								
	1200	12								

Example

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

Type T627 rated at 200A average with $V_{DRM} = 1000V$, $I_{GT} = 150$ ma, $t_q = 20 \mu$ sec max. and flex leads—order as:

Type	Voltage	Current	Turn Off	Gate Current	Leads
T 6 2 7	1 0	2 0	6	4	D N

*for 10 μ sec turn-off, consult factory

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

**Fast Switching
SCR
T627__20**

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,
 $t \leq 5.0$ msec, V ...

Symbol

V_{DRM}
 V_{RRM}
 V_{RSM}

100	200	300	400	500	600	700	800	900	1000	1100	1200
100	200	300	400	500	600	700	800	900	1000	1100	1200
200	300	400	500	600	700	800	900	1000	1100	1200	1300

Forward leakage current, mA peak ...
Reverse leakage current, mA peak ...

I_{DRM}
 I_{RRM}

←	25	→
←	25	→

Current

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

Symbol

T627__20

RMS forward current, A ...
Ave. forward current, A ...
One-half cycle surge current③, A ...
 I^2t for fusing (for times ≥ 8.3 ms)
A² sec. ...
Forward voltage drop at $I_{TM} = 625\text{A}$
and $T_J = 25^\circ\text{C}$, V ...
Min. repetitive di/dt ④, A/ μ sec①④⑤

$I_{T(rms)}$
 $I_{T(av)}$
 I_{TSM}
 I^2t
 V_{TM}
 di/dt

315
200
4000
65,000
2.1
250

Switching

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

Symbol

Max. turn-off time, $I_T = 150\text{A}$,
 $T_J = 125^\circ\text{C}$, $di/dt = 12.5$ ①
A/ μ sec, reapplied $dv/dt =$
20V/ μ sec ⑤ linear to $0.8 V_{DRM}$, μ sec. ...
Typ. turn-on-time, $I_T = 100\text{A}$
 $V_D = 100\text{V}$ ④, μ sec ...
Min. critical dv/dt , exponential to V_{DRM} ,
 $T_J = 125^\circ\text{C}$, V/ μ sec②④ ...
Min. di/dt A/ μ sec ①④⑤

t_q
 t_{on}
 dv/dt
 di/dt

10 to 50
3.5
300
800

Gate

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

Symbol

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 ...

I_{GT}
 V_{GT}
 V_{GDM}
 I_{GTM}
 V_{GRM}
 P_{GM}
 $P_{G(av)}$

150
3
0.15
4
5
16
3

Thermal and Mechanical

Symbol

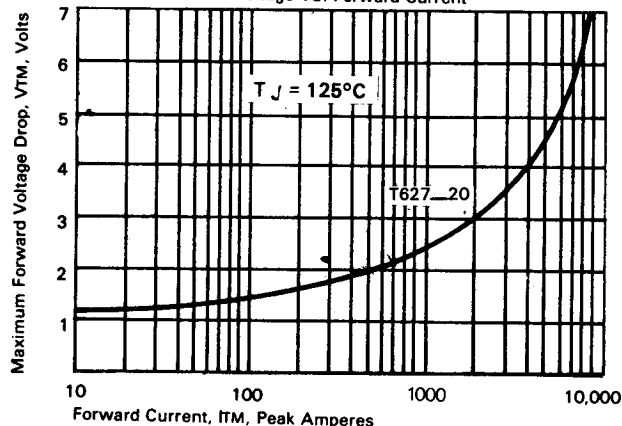
Min., Max. oper. junction temp., $^\circ\text{C}$...
Min., Max. storage temp., $^\circ\text{C}$...
Min., Max. Mounting Force, lb.① ...
Max. thermal resistance, Double side cooled
Junction to case, $^\circ\text{C}/\text{Watt}$...
Case to sink, lubricated, $^\circ\text{C}/\text{Watt}$...

T_J
 T_{stg}
 $R_{\theta JC}$
 $R_{\theta CS}$

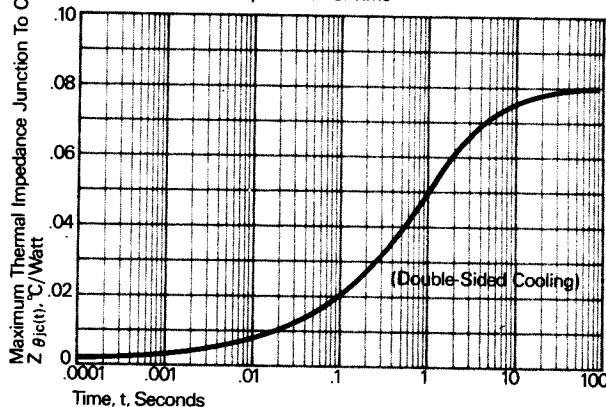
-40 to +125
-40 to +150
1000 to 1400
.08
.02

- 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.

Maximum Forward Voltage VS. Forward Current



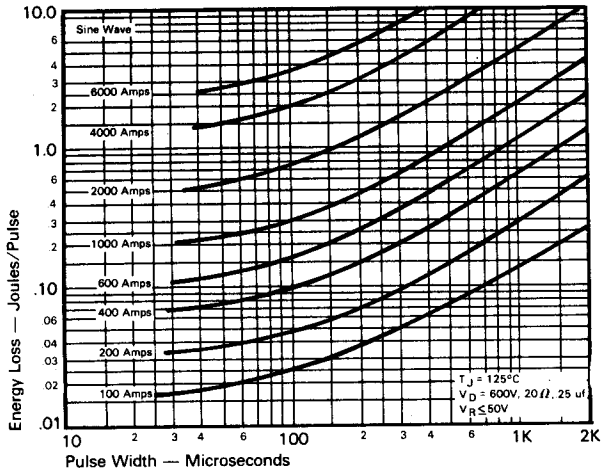
Transient Thermal Impedance vs. Time



Fast Switching SCR T627-20

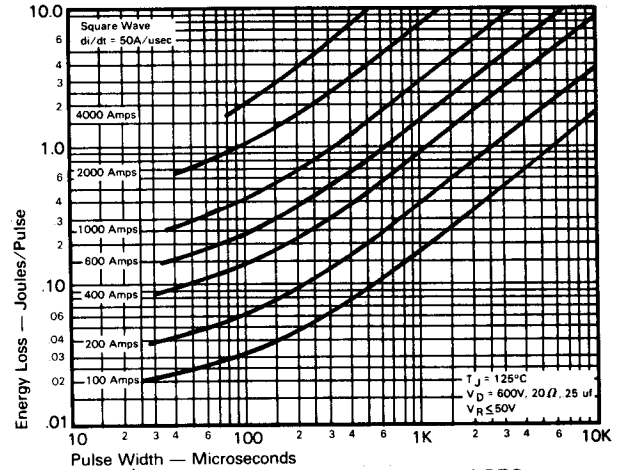
200A Avg.
(315 RMS)
Up to 1200 Volts
10-50 μ s

Sinusoidal Current Data

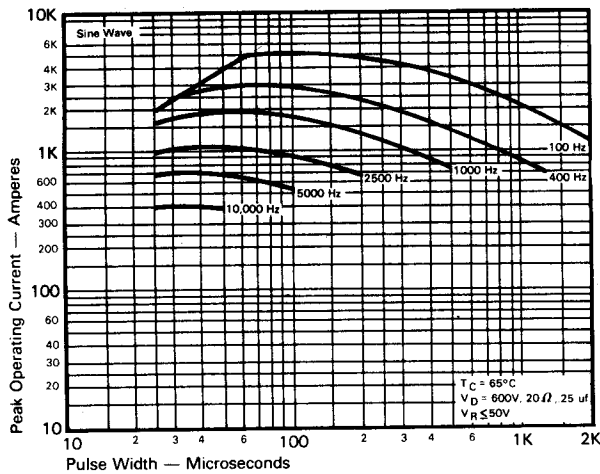


ENERGY PER PULSE FOR SINUSOIDAL PULSES

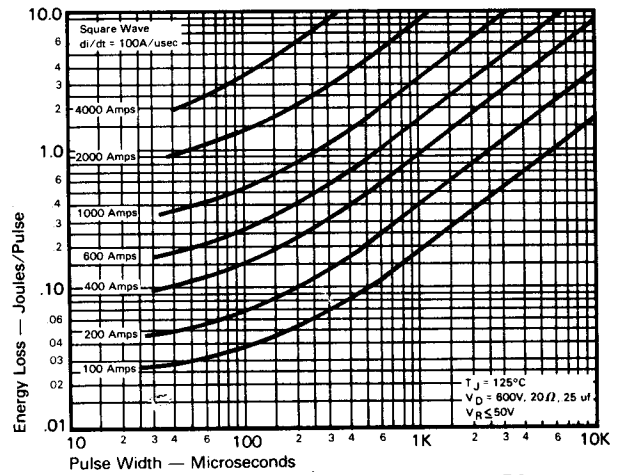
Trapezoidal Wave Current Data



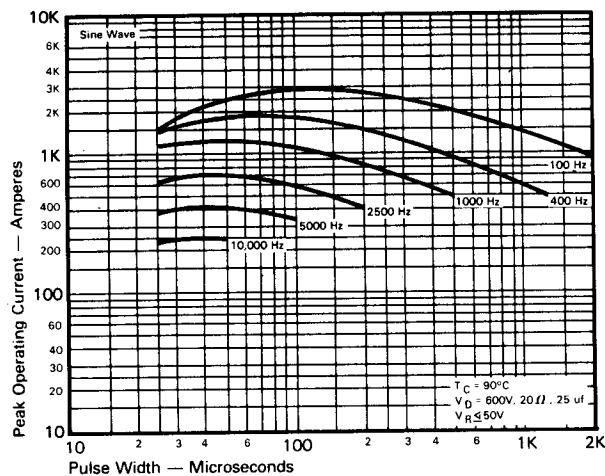
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 50\text{A}/\mu\text{sec}$)



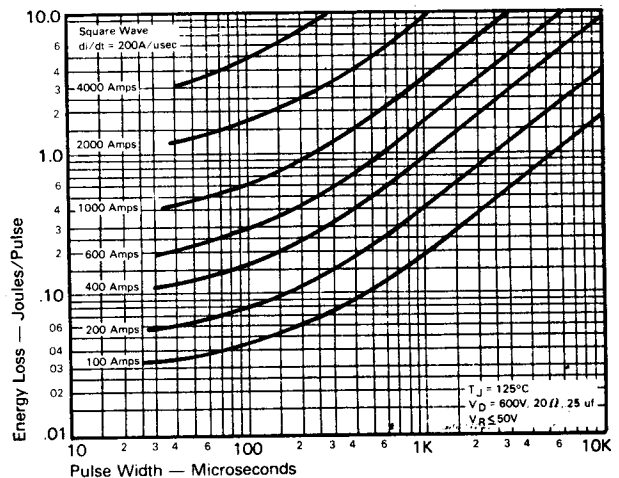
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($T_C = 65^\circ\text{C}$)



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



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

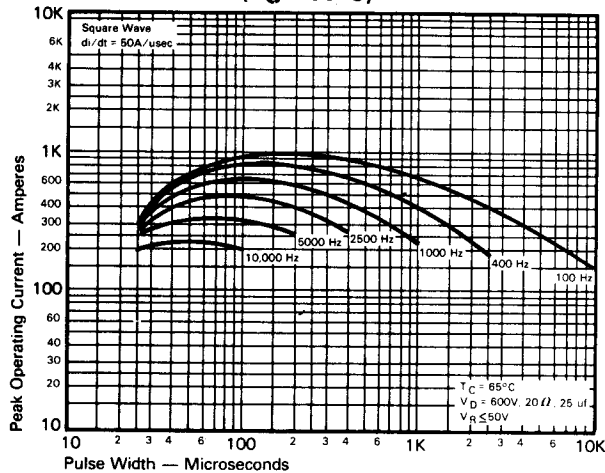


ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 200\text{A}/\mu\text{sec}$)

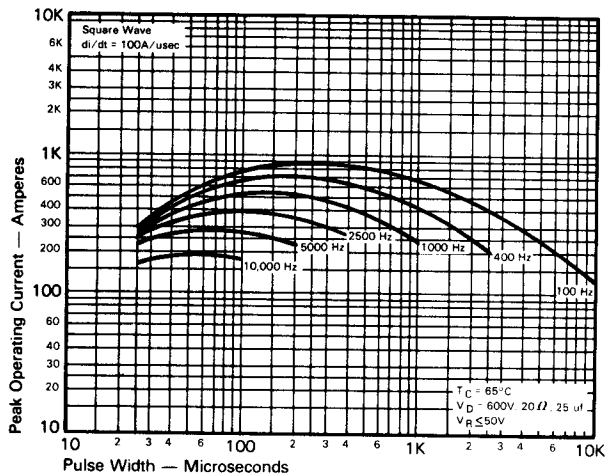
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Fast Switching
SCR
T627-20

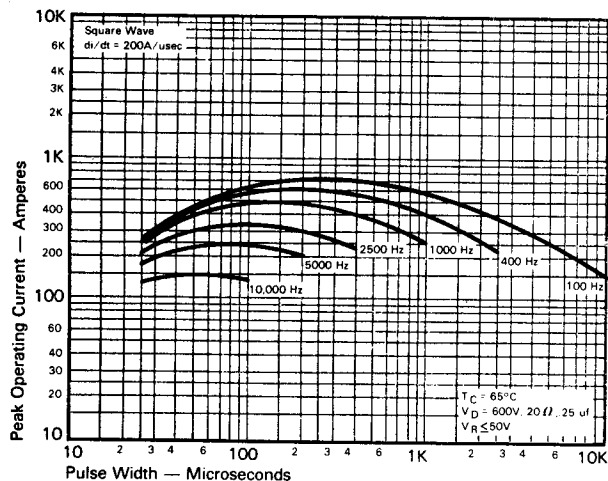
Trapezoidal Wave Current Data
($T_C = 65^\circ\text{C}$)



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

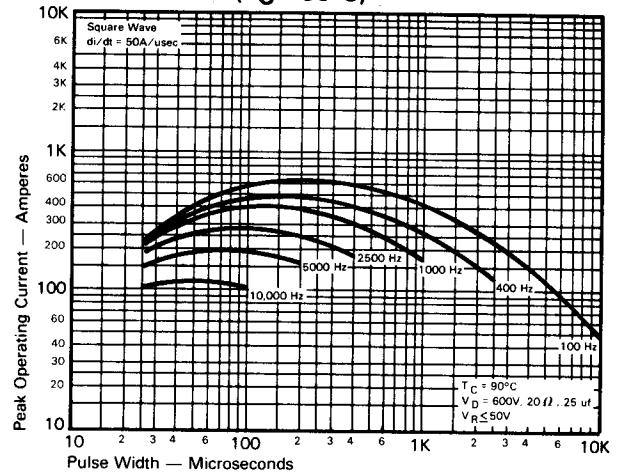


MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($dI/dt = 100\text{A}/\mu\text{sec}$)

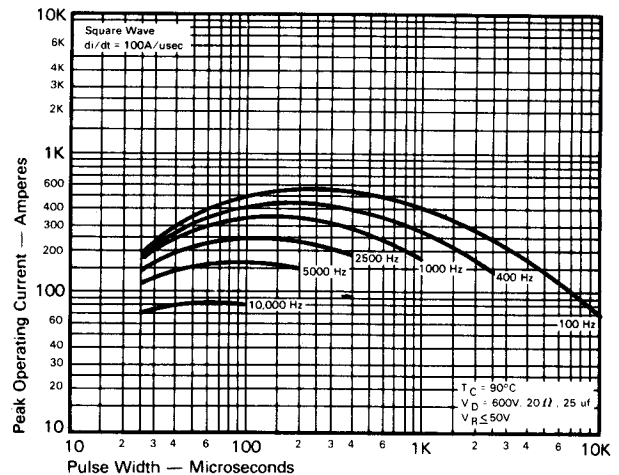


MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($dI/dt = 200\text{A}/\mu\text{sec}$)

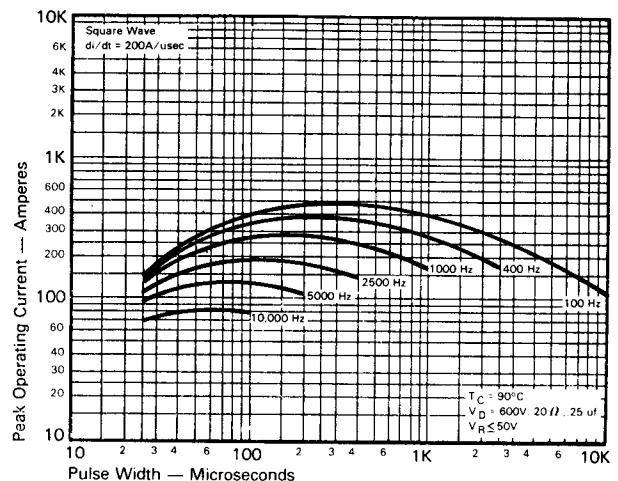
Trapezoidal Wave Current Data
($T_C = 90^\circ\text{C}$)



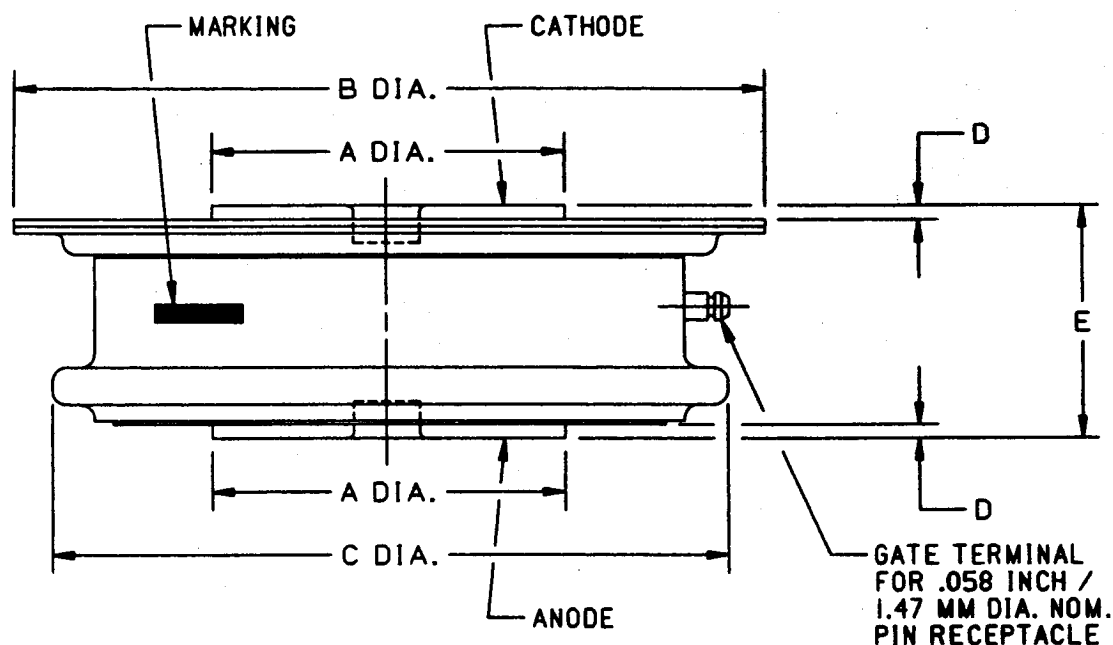
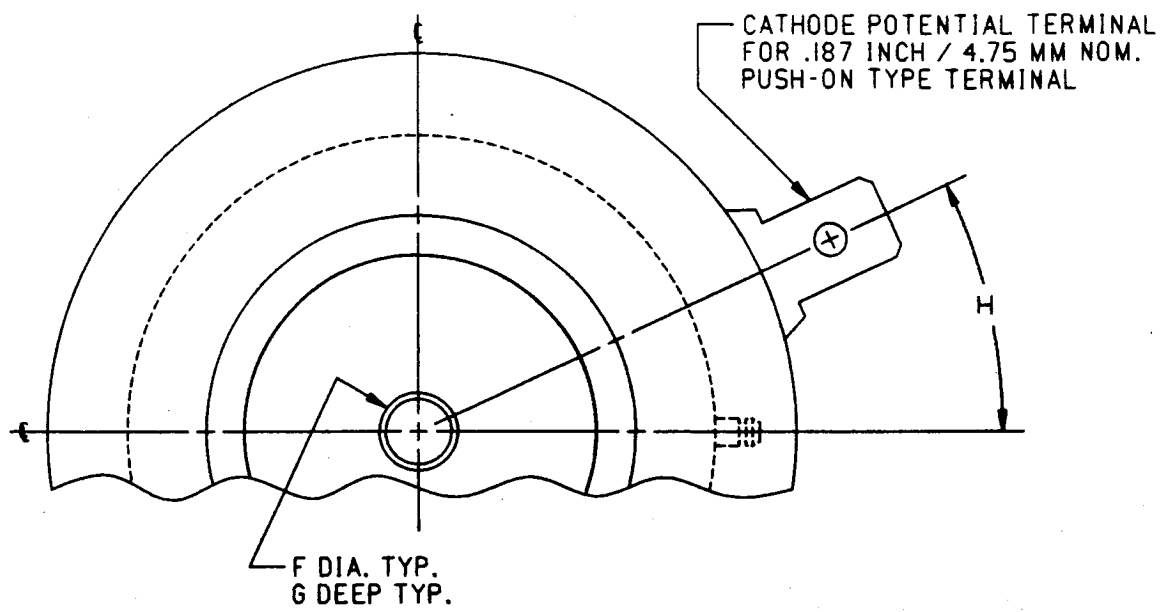
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($dI/dt = 50\text{A}/\mu\text{sec}$)



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 T62
NOMINAL DIMENSIONS

STRIKE DISTANCE : .21 INCH / 5.3 MM MIN.
CREEPAGE DISTANCE : .34 INCH / 8.6 MM MIN.

SYM.	A	B	C	D	E	F	G	H
INCHES	.75	1.63	1.44	.030	.500/.565	.140	.080	25°
MM	19.0	41.4	36.6	0.76	12.70/14.35	3.56	2.03	25°

ALL DIMENSIONS ARE REFERENCE