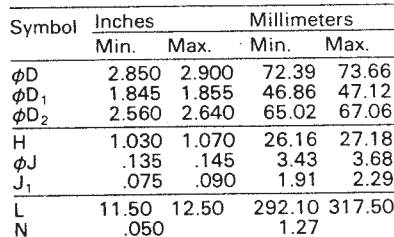


**800A Avg.
(1250 RMS)
Up to 2000 Volts
50-100 μ s**



A small, round, multi-layered cake or stack of pastries, possibly a chocolate cake, presented on a decorative plate. The cake has several distinct layers and a small decorative element on top. The plate is simple and round.

Features:

- Applications:**

- Induction Heating
- Transportation
- Inverters
- Crowbars

Type	Voltage		Current		Turn-off		Gate current		Leads	
Code	V _{DRM} and V _{RRM} * (V)	Code	I _{T(av)} (A)	Code	t _q usec	Code	I _{GT} (ma)	Code	Case	Code
T9GH	600	06	800	08	50	3	300	2	T9G	DH
	800	08			60	2				
	1000	10			70	C				
	1200	12			80	I				
	1400	14			100	K				
	1500	15								
	1600	16								
	1700	17								
	1800	18								
	2000	20								

Obtain optimum device performance for your application by selecting proper order code.

Type				Voltage		Current		Turn Off	Gate Current	Leads
T	9	G	H	1	8	0	8	9	2	D H

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**800A Avg.
(1250 RMS)
Up to 2000 Volts
50-100 μ s**

**Fast Switching
SCR
T9GH_08**

Voltage

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

Repetitive peak forward blocking voltage, V	V_{DRM}
Repetitive peak reverse voltage, V	V_{RRM}
Non-repetitive transient peak reverse voltage, $t \leq 5.0$ msec, V	V_{RSM}
Forward leakage current, mA peak	I_{DRM}
Reverse leakage current, mA peak	I_{RRM}

Symbol

600	800	1000	1200	1400	1500	1600	1700	1800	1900	2000
600	800	1000	1200	1400	1500	1600	1700	1800	1900	2000
700	900	1100	1300	1500	1600	1700	1800	1900	2000	2100

Current

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

Symbol	T9GH_08
RMS forward current, A	$I_{T(rms)}$ 1250
Ave. forward current, A	$I_{T(av)}$ 800
One-half cycle surge current ^③ , A	I_{TSM} 10,000
3 cycle surge current ^③ , A	I_{TSM} 7,500
10 cycle surge current ^③ , A	I_{TSM} 6,200
I^2t for fusing ($t = 8.3$ ms), $A^2\text{sec}$	I^2t 416,000
Max I^2t of package ($t = 8.3$ ms), $A^2\text{sec}$	I^2t 90×10^6
Forward voltage drop at $I_{TM} = 1500\text{A}$ and $T_J = 25^\circ\text{C}$, V	V_{TM} 2.5
Min. Repetitive di/dt A/usec. ^① ^④ ^⑤ di/dt	500

Gate

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

Symbol	Min	Typ	Max
Gate current to trigger at $V_D = 12\text{V}$, mA	I_{GT}	200	300
Gate voltage to trigger at $V_D = 12\text{V}$, V	V_{GT}	1.5	3.0
Non-triggering gate voltage, $T_J = 125^\circ\text{C}$, and rated V_{DRM} , V	V_{GDM}		.15
Non-triggering Gate Current at $V_D = 12\text{V}$, mA	I_{GNT}	20	
Peak forward gate current, A	I_{GTM}		10
Peak reverse gate voltage, V	V_{GRM}		5
Peak gate power, Watts	P_{GM}		60
Average gate power, Watts	$P_{G(av)}$		3

Switching

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

HARD COMMUTATION: ^①

Maximum Turn-off time, $I_T = 1000\text{A}$

$50V \leq V_{RRM} \leq V_{DRM}$

$T_J = 125^\circ\text{C}$, $di/dt = 100\text{A}/\mu\text{sec}$

reapplied $dv/dt =$

$200\text{V}/\mu\text{sec}$ linear to $0.8 V_{DRM}$, μsec tq

Typical Turn-On and Delay Time

$I_{TM} = 1000\text{A}$, $t_p = 450 \mu\text{sec}$

$V_D = 1100\text{V}$, μsec

Minimum Critical dv/dt exponential
to V_{DRM}

$T_J = 125^\circ\text{C}$, $V/\mu\text{sec}$ ^① ^④

Minimum di/dt @ non-repetitive,

^① ^④ ^⑤ A/ μsec

Latching Current

$V_D = 75\text{V}$, mA

Holding Current

$V_D = 75\text{V}$, ma

Symbol

50-100

3.0

1.5

400

1000

500

1000

300

800

Thermal and Mechanical

Symbol	Min	Typ	Max
Oper. junction temp., $^\circ\text{C}$	T_J	-40	125
Storage temp., $^\circ\text{C}$	T_{stg}	-40	150
Mounting force, lb ^②		5000	5500
Thermal resistance with double sided cooling ^①			
Junction to case, $^\circ\text{C}/\text{Watt}$	$R_{J/C}$		.023
Case to sink, lubricated, $^\circ\text{C}/\text{Watt}$	$R_{I/C}$	.006	.0075

^① Consult recommended mounting procedures.

^② Applies for zero or negative gate bias.

^③ Per JEDEC RS-397, 5.2.2.1.

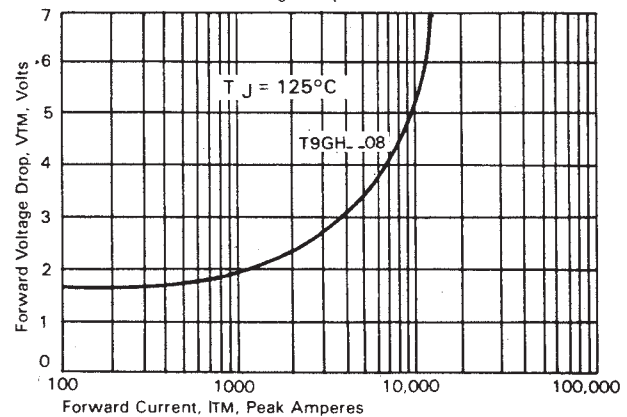
^④ With recommended gate drive.

^⑤ Higher dv/dt ratings available, consult factory.

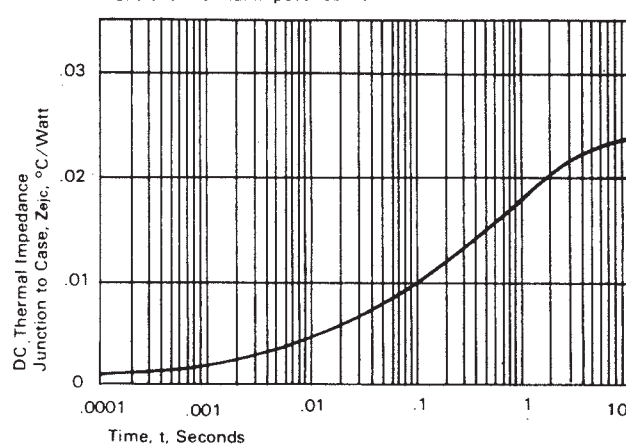
^⑥ Per JEDEC standard RS-397, 5.2.2.6.

^⑦ For operation with antiparallel diode, consult factory.

Maximum Forward Voltage Drop Vs. forward Current



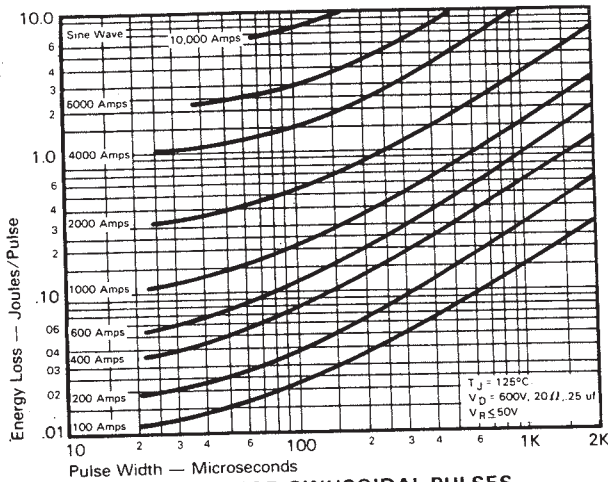
Transient Thermal Impedance VS. Time



Fast Switching SCR T9GH .08

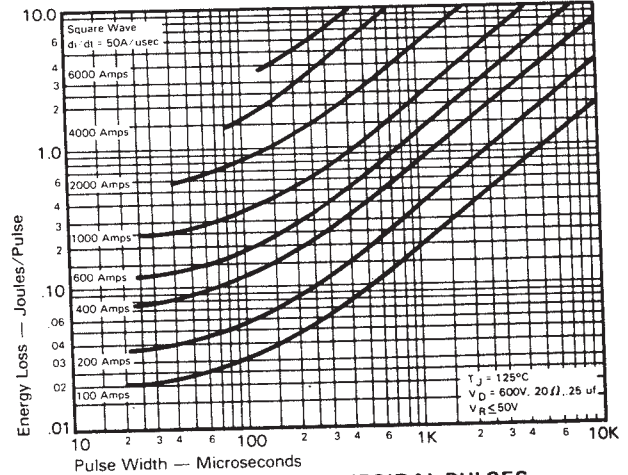
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Sinusoidal Current Data

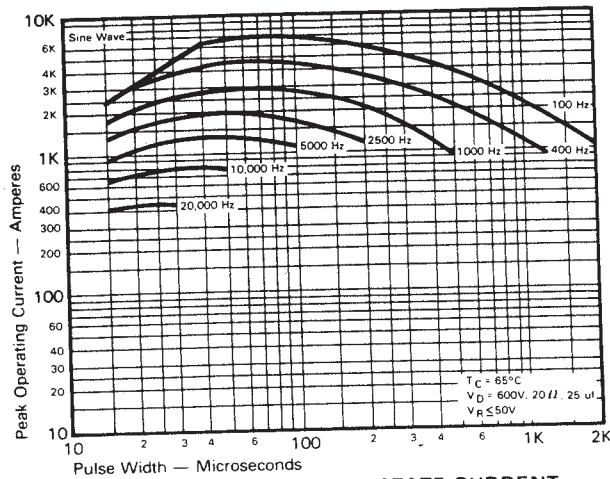


ENERGY PER PULSE FOR SINUSOIDAL PULSES

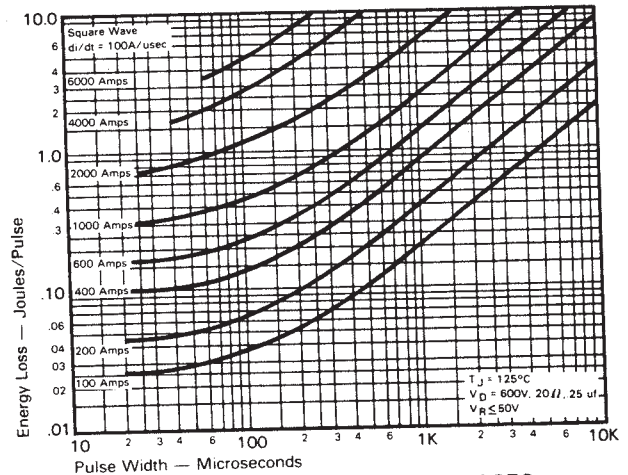
Trapezoidal Wave Current Data



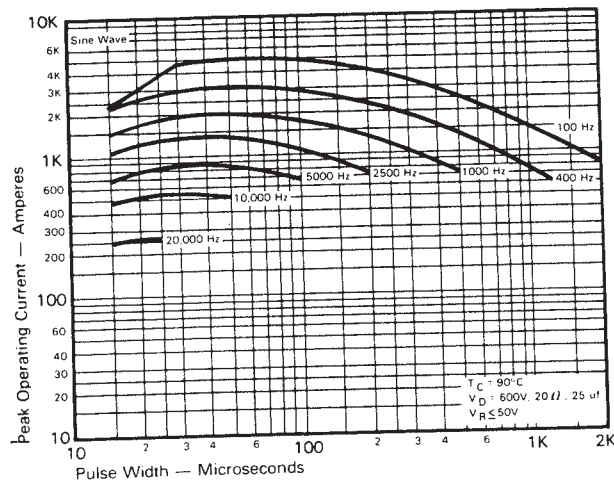
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 50\text{A}/\mu\text{sec}$)



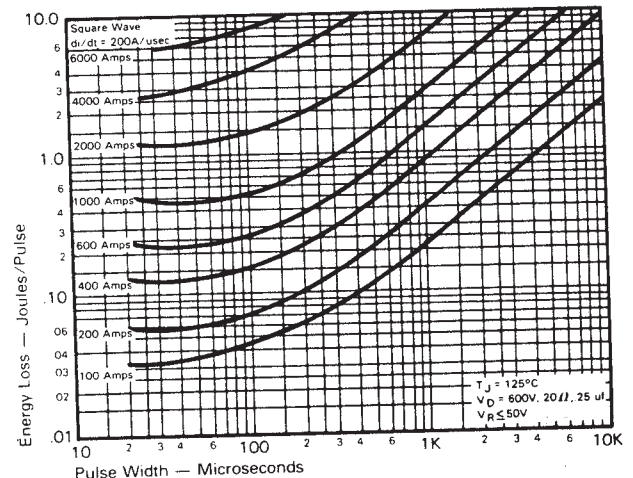
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($T_C = 65^\circ\text{C}$)



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



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



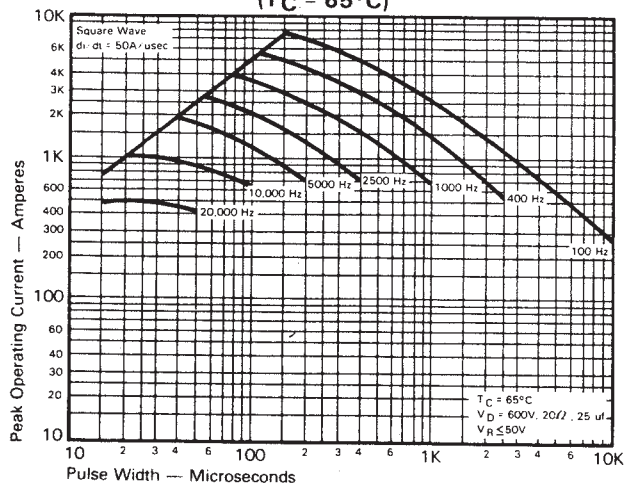
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 200\text{A}/\mu\text{sec}$)

FAST SWITCHING
THYRISTORS

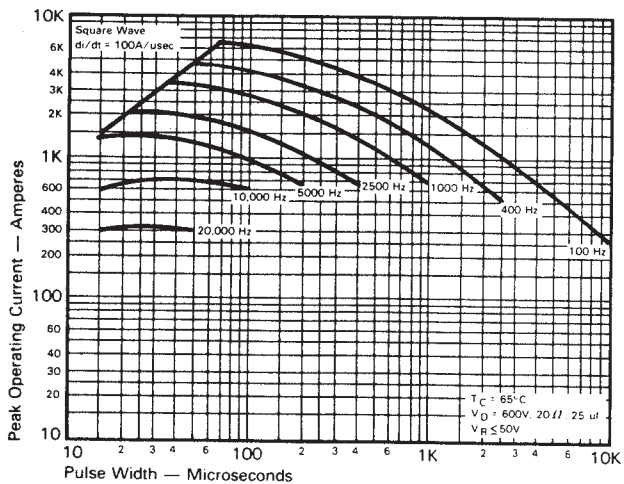
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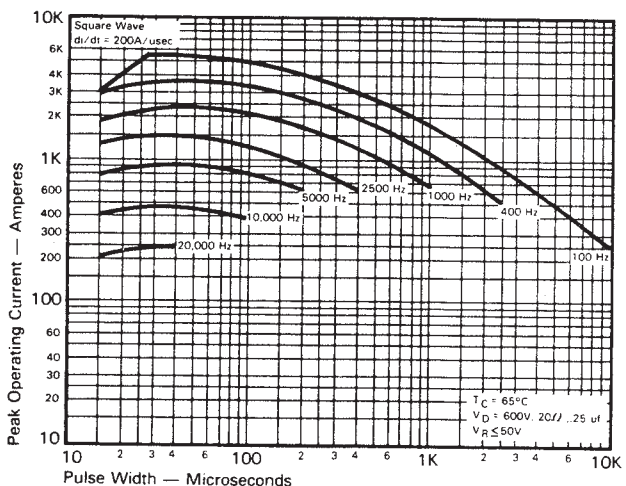
**Trapezoidal Wave Current Data
($T_C = 65^\circ\text{C}$)**



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

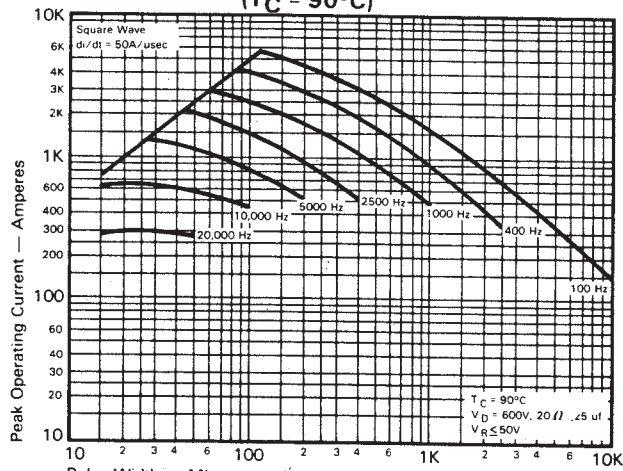


**MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($di/dt = 100\text{A}/\mu\text{sec}$)**

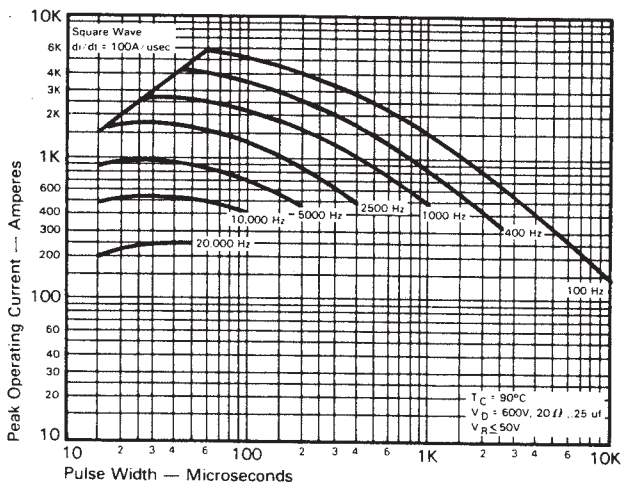


**MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($di/dt = 200\text{A}/\mu\text{sec}$)**

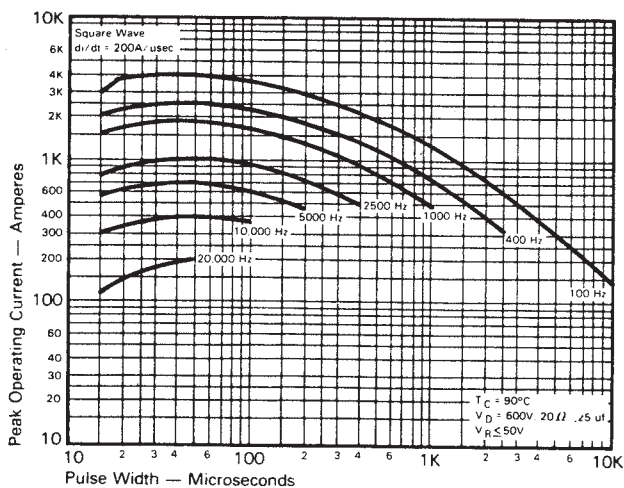
**Trapezoidal Wave Current Data
($T_C = 90^\circ\text{C}$)**



**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 ($di/dt = 200\text{A}/\mu\text{sec}$)**