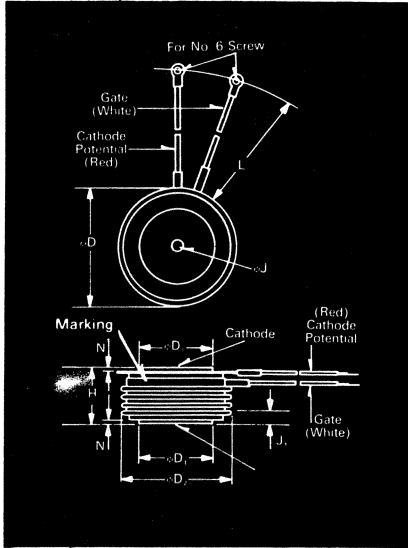


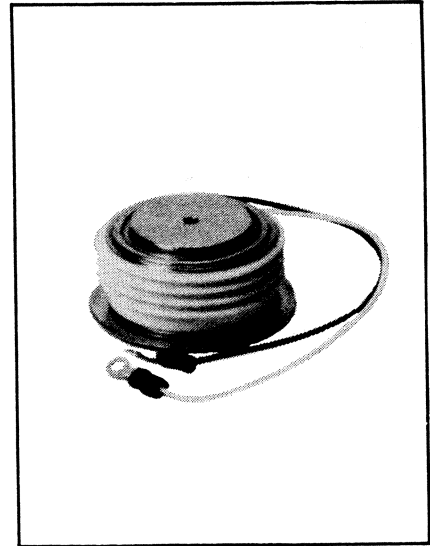
Fast Switching SCR T72H_35

350A Avg.
(550 RMS)
Up to 1200 Volts
10-50 μ s



Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
ϕ D	2.250	2.290	57.15	58.17
ϕ D ₁	1.333	1.343	33.86	34.11
ϕ D ₂	2.030	2.090	51.56	53.09
H	1.020	1.060	25.91	26.92
ϕ J	.135	.145	3.43	3.68
J ₁	.075	.090	1.91	2.29
L	7.75	8.50	196.85	215.90
N	.040		1.02	

Creep Distance—1.00 in. min. (25.40 mm).
Strike Distance—.69 in. min. (17.53 mm).
(In accordance with NEMA standards.)
Finish—Nickel Plate.
Approx. Weight—8 oz. (227 g).
1. Dimension "H" is a clamped dimension.



T72 Outline

Features:

- Interdigitated, di/namic Gate structure
- Hard Commutation Turn-Off
- Forward Blocking Voltage Capabilities to 1200 Volts
- Low Switching Losses at High Frequency
- Soft Commutation (Feedback Diode) Testing Available
- High di/dt with softgate control

Applications:

- Induction Heating
- Transportation
- Inverters
- Crowbars
- Cycloconverters

Ordering Information

Type	Voltage		Current		Turn-off		Gate current		Leads		
	V _{DRM} and V _{RRM} (V)	Code	I _{T(av)} (A)	Code	t _q usec	Code	I _{GT} (ma)	Code	Case	Code	
T72H	100	01	350	35	10	B	150	4	T72	DN	
	200	02			15						7
	300	03			20						6
	400	04			25						8
	500	05			30						5
	600	06			40						4
	700	07			50						3
	800	08			100						K
	900	09									
	1000	10									
	1100	11									
	1200	12									
	1400	14									

Example

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

Type T72H rated at 350 A average with V_{DRM} = 1000V, I_{GT} = 150 ma, t_q = 30 μ sec max. and leads—order as:

Type	Voltage	Current	Turn Off	Gate Current	Leads
T 7 2 H	1 0	3 5	5	4	D N

**350A Avg.
(550 RMS)
Up to 1200 Volts
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**Fast Switching
SCR
T72H_35**

Voltage ①

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

	Symbol
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}

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	
							35					
							35					

Current

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

	Symbol	
RMS forward current, A ...	$I_{T(rms)}$	550
Ave. forward current, A ...	$I_{T(av)}$	350
One-half cycle surge current ^② , A ...	I_{TSM}	7000
3 cycle surge current ^③ , A ...	I_{TSM}	5040
10 cycle surge current ^③ , A ...	I_{TSM}	4340
I^2t for fusing (for times ≥ 8.3 ms) A ² sec.	I^2t	205,000
Forward voltage drop at $I_{TM} = 1500A$ and $T_J = 25^\circ\text{C}$, V ...	V_{TM}	3.15
Min. repetitive di/dt ①④⑤ A/ μ sec ...	di/dt	500

T72H_35

Switching

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

Max. turn-off time, $I_T = 1000A$, $T_J = 125^\circ\text{C}$

	Symbol	
$t_p = 100$ μ sec. $dirR/dt = 50$ A/ μ sec., reapplied $dv/dt =$ 200 V/ μ sec. linear to 0.8 V_{DRM} , μ sec. ①④	t_q	10 to 50
Typ. delay time, $I_{TM} = 1000A$ $T_D = .8 V_{DRM}$ ④, μ sec	t_d	.5
Min. critical dv/dt exponential to .8 V_{DRM} , $T_J = 125^\circ\text{C}$, V/ μ sec ④⑤	dv/dt	300
Min. di/dt , non-repetitive, A/ μ sec ①④⑤	di/dt	1200

Gate

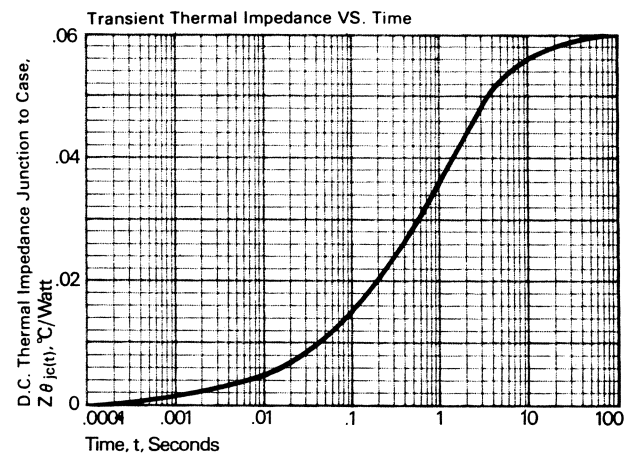
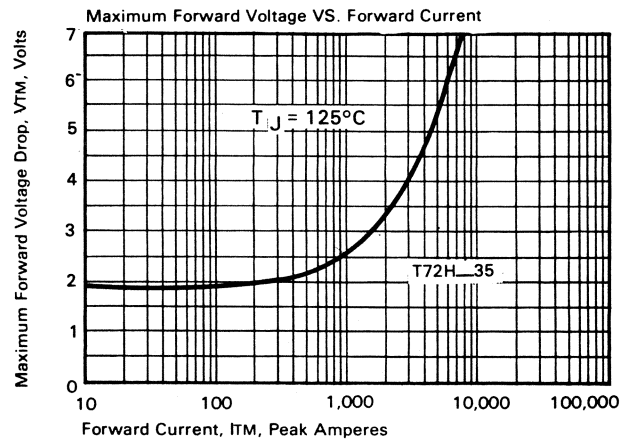
Maximum Parameters
($T_J = 25^\circ\text{C}$)

	Symbol	
Gate current to trigger at $V_D = 12V$, mA	I_{GT}	150
Gate voltage to trigger at $V_D = 12V$, V ...	V_{GT}	3
Non-triggering gate voltage, $T_J = 125^\circ\text{C}$, and rated V_{DRM} , V ...	V_{GDM}	.25
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	
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 force, lb. ... ①		2000 to 2400
Thermal resistance ^① , double- side cooling, junction to case, $^\circ\text{C}/\text{Watt}$...	$R_{\theta JC}$.06
Case to sink, lubricated, $^\circ\text{C}/\text{Watt}$...	$R_{\theta CS}$.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.

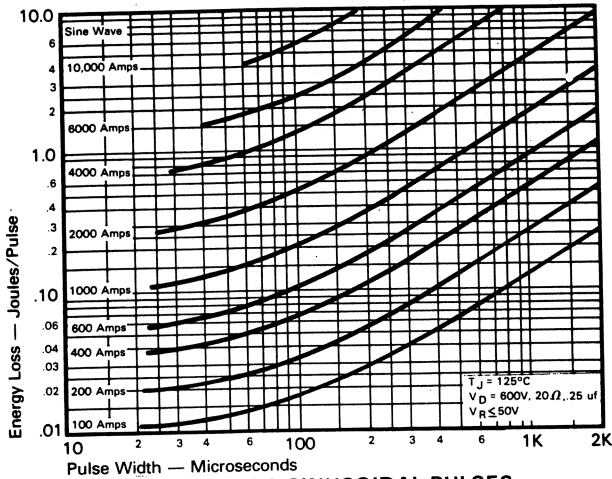


FAST SWITCHING
THYRISTORS

Fast Switching SCR T72H_35

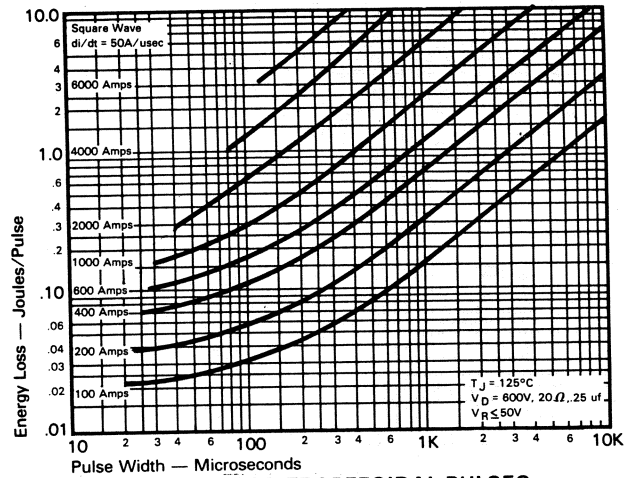
350A Avg.
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Sinusoidal Current Data

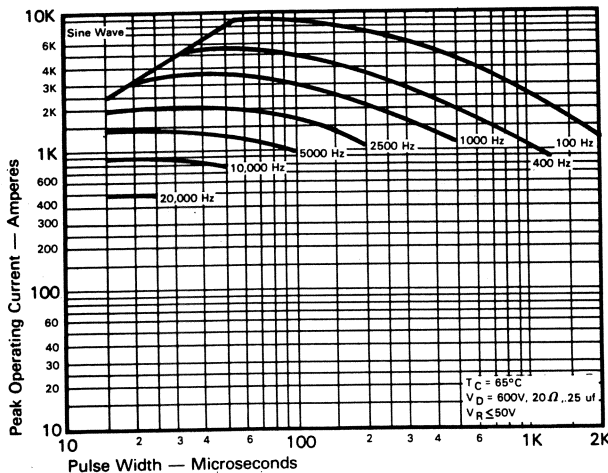


ENERGY PER PULSE FOR SINUSOIDAL PULSES

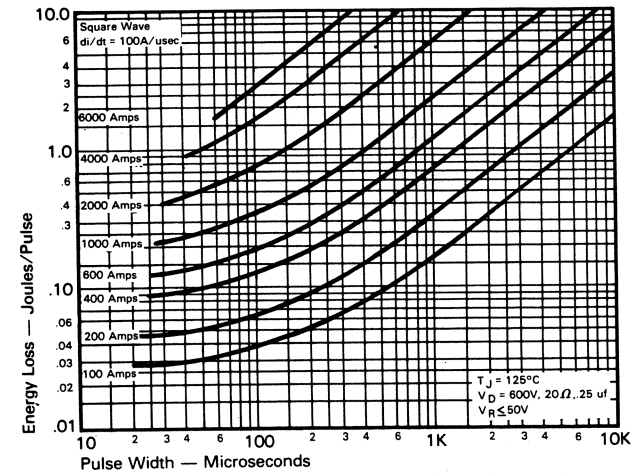
Trapezoidal Wave Current Data



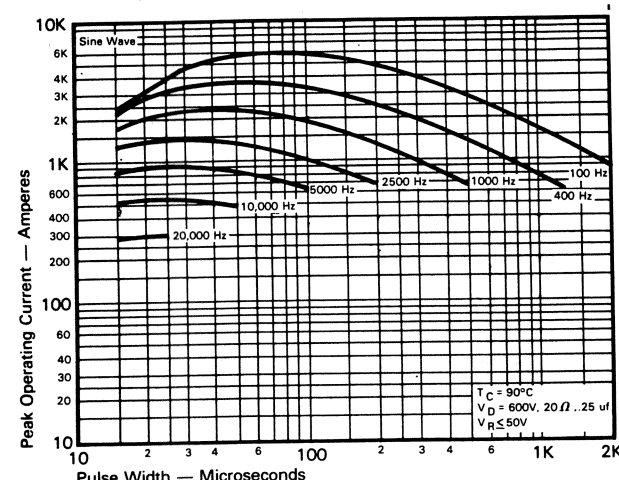
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 50\text{A/usec}$)



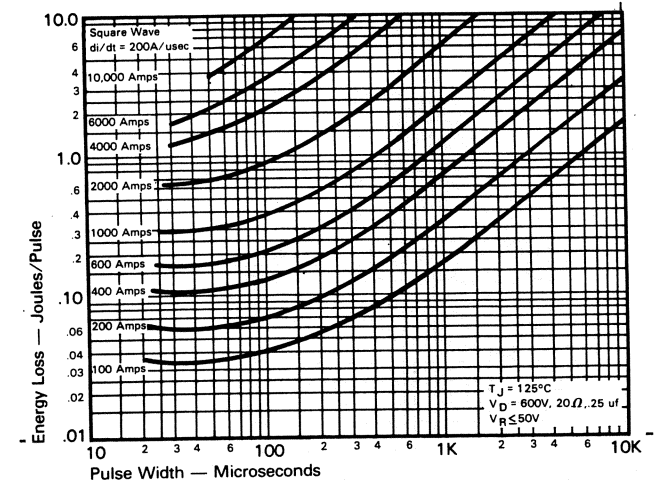
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT
vs. PULSE WIDTH ($T_C = 65^\circ\text{C}$)



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



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



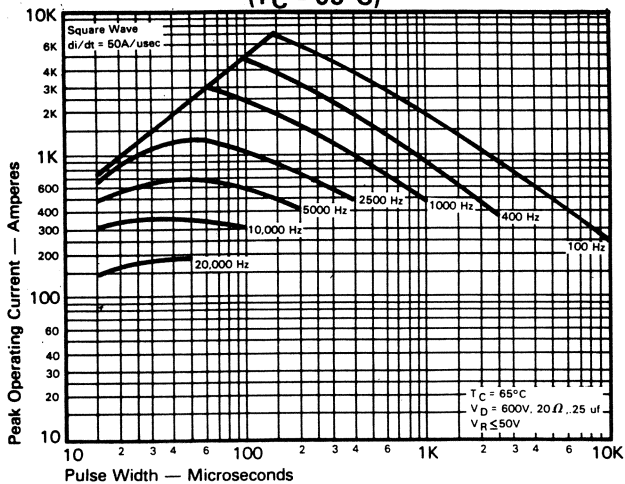
ENERGY PER PULSE FOR TRAPEZOIDAL PULSES
($di/dt = 200\text{A/usec}$)

FAST SWITCHING
THYRISTORS

**350A Avg.
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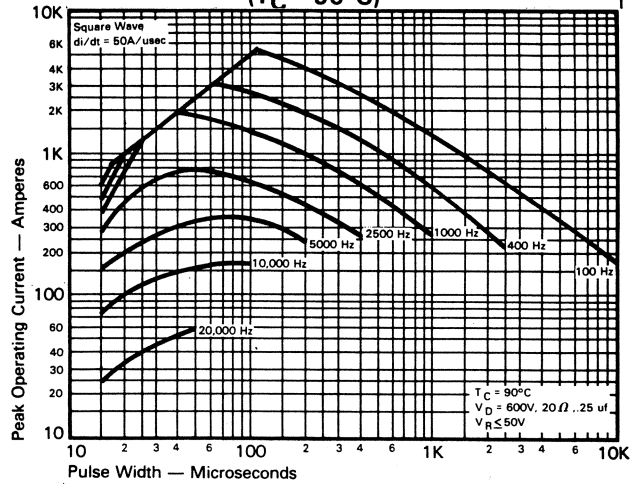
**Fast Switching
SCR
T72H_35**

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

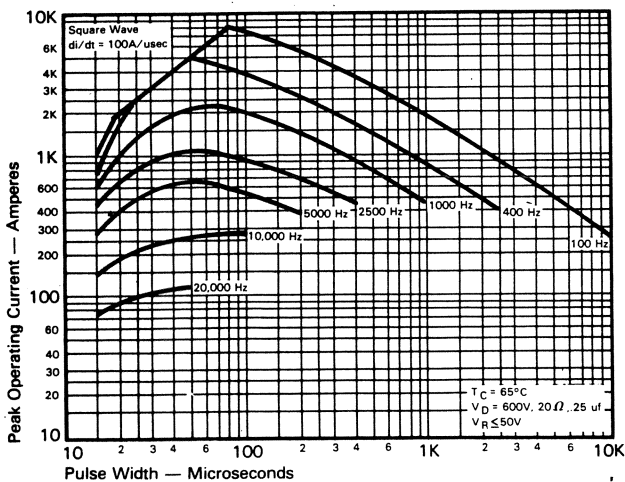


MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 50\text{A/usec}$)

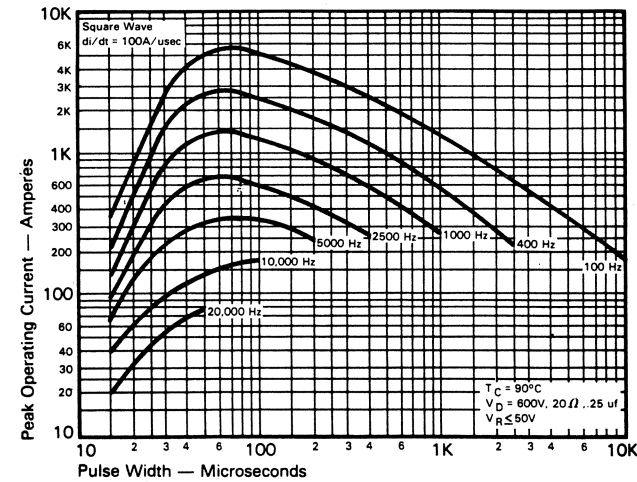
**Trapezoidal Wave Current Data
($T_C = 90^\circ\text{C}$)**



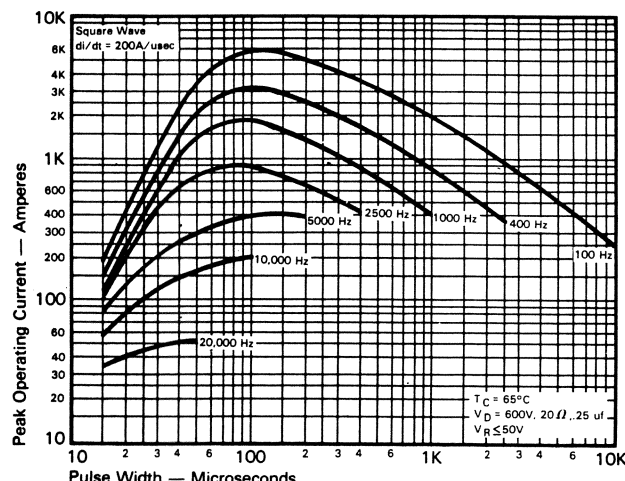
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 50\text{A/usec}$)



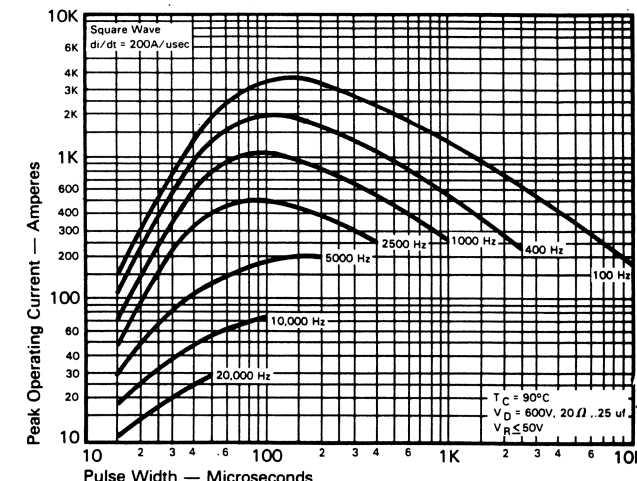
MAXIMUM ALLOWABLE PEAK ON-STATE CURRENT vs. PULSE WIDTH ($di/dt = 100\text{A/usec}$)



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