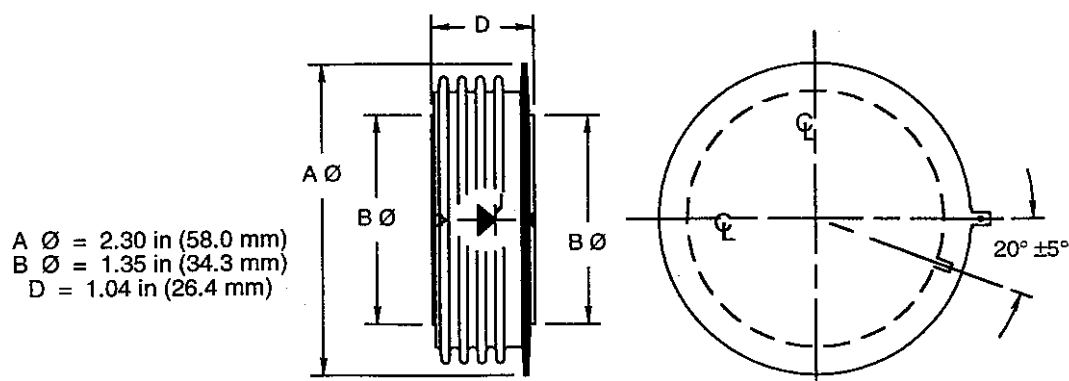


The C600 is specifically designed for phase control applications and processed by multidiffusion, utilizing 40mm diameter silicon and a unique pilot gate. It is supplied in a disk package ready to mount using commercially available heat dissipators and mechanical clamping hardware.

MAXIMUM ALLOWABLE RATINGS

Type	V _{DRM} /V _{RRM} Repetitive T _J = -40°C to +125°C	V _{DRM} /V _{RSM} Repetitive T _J = 0°C to +125°C	Transient Peak Reverse Voltage (Non-Recurent < 5 Millisec.), V _{RSM} T _J = -40°C to +125°C
C600E	500 Volts	600 Volts	600 Volts
C600M	600	700	700
C600S	700	800	800
C600N	800	900	900
C600T	900	1000	1000
C600P	1000	1100	1100
C600PA	1100	1200	1200
C600PB	1200	1300	1300

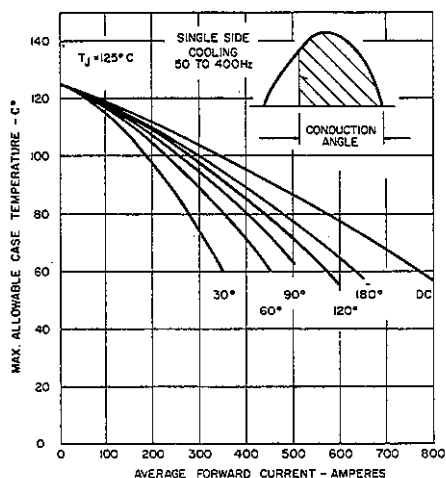
Average Forward Current, On-State Depends on conduction angle
Peak One-Cycle Surge ON-state Current, I_{TSM} 13000 amperes
Maximum Rate of Rise of Anode Current Turn-on Interval
(Switching Rates ≤ 400 Hz.) Switch From ≤ 600 V 150 A/usec
See Recommended Load Line Fig. 11 Switch From ≤ 1000V 125 A/usec
I²t (for fusing) (at 8.3 milliseconds) 700,000 ampere² seconds
Peak Gate Power Dissipation, P_{GM} 40 Watts
Average Gate Power Dissipation, P_{G(AV)} 5 Watts
Peak Reverse Gate Voltage, V_{GRM} 5 Volts
Storage and Operating Temperature, T_{STG} & T_J Refer Above
Mounting Force Required 4000 lbs. ± 10%



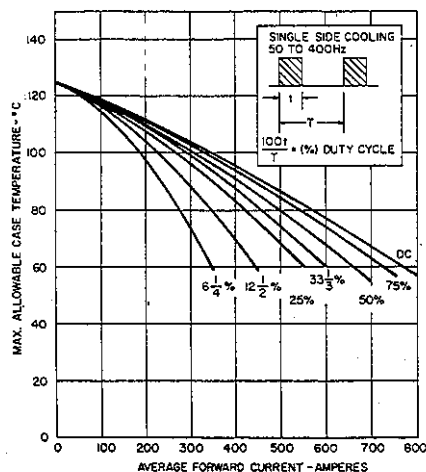
CHARACTERISTICS

TEST	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Peak Reverse and Forward Blocking Current	I_{DRM} and I_{RRM}	—	10	15	mA	$T_J = +25^\circ\text{C}$, $V = V_{DRM} = V_{RRM}$
Peak Reverse and ON-state Blocking Current	I_{DRM} and I_{RRM}	—	15	35	mA	$T_J = +125^\circ\text{C}$, $V = V_{DRM} = V_{RRM}$
Effective Thermal Resistance (DC), $R_{\theta JS}$ (See Note)	DC 1 ϕ 3 ϕ 6 ϕ	—	—	.041	$^\circ\text{C/watt}$	Junction to Sink Double Side Cooled
		—	—	.045		
		—	—	.048		
		—	—	.056		
Critical Exponential Rate of Rise of Forward Blocking Voltage (Higher values may cause device switching)	dv/dt	500	—	—	V/usec	$T_J = +125^\circ\text{C}$, $V_{DRM} = .67$ Rated Gate open.
Holding Current	I_H	—	100	250	mA dc	$T_C = +25^\circ\text{C}$, Anode supply = 20Vdc. Initial forward current=500 amps.
Latching Current	I_L	—	1.0	—	A dc	$T_C = +25^\circ\text{C}$, Anode voltage=24Vdc. Load resistance 12 ohms max.
Delay Time	t_d	—	1.5	—	usec	Switching from 15 volts, 30 ohms 25 - 125 $^\circ\text{C}$, 0.5 usec Rise Time
Gate Pulse Width Necessary to Trigger		—	—	10	usec	See Figure 11
Gate Trigger Current See Fig #11	I_{GT}	—	— 80	— 150	mA dc	$T_C = 25^\circ\text{C}$, $V_D = 10$ VDC, $R_L = 3$ Ohms
		5.0	—	—		$T_C = +125^\circ\text{C}$, $V_D = .5 \times$ Rated $R_L = 1000$ Ohms
Gate Trigger Voltage See Fig #11	V_{GT}	—	2.6	4.5	Vdc	$T_C = 0^\circ\text{C}$, to $+125^\circ\text{C}$, $V_D = 10$ VDC, $R_L = 3$ Ohms
		0.5	—	—		$T_C = 125^\circ\text{C}$, $V_D = .5 \times$ Rated, $R_L = 1000$ Ohms
Peak On-Voltage	V_{FM}	—	—	1.50	Volts	$T_C = +125^\circ\text{C}$, $I_T = 2200$ Amp Peak Duty Cycle $\leq 0.01\%$
Circuit Commutated Turn-Off Time	t_q	—	300	350	usec	$T_C = +125^\circ\text{C}$, $I_T = 450\text{A}$, $V_R = 75$ volts min., V_{DRM} (reapplied) = $\frac{1}{2}$ Rated, Rate of rise of reapplied forward blocking voltage = .25V/usec linear, Gate bias = open during turn-off interval, Duty cycle $\leq 0.01\%$

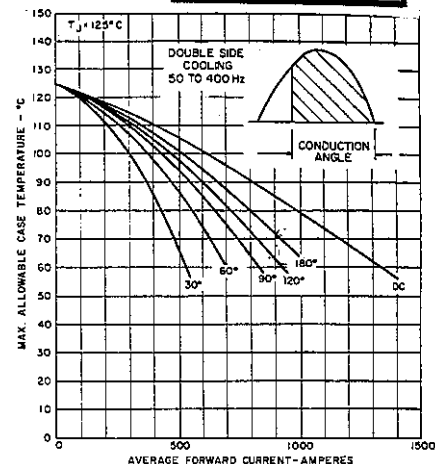
NOTE: T_c = Sink Temperature (measured $\frac{1}{8}$ inch from base of SCR.)



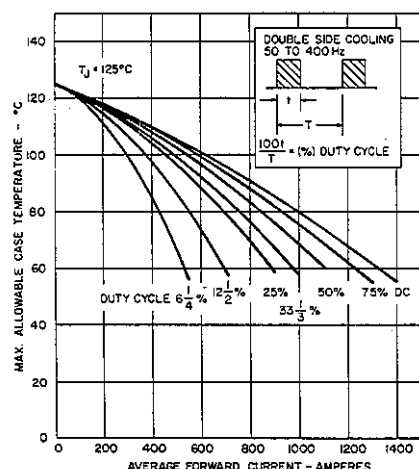
1. MAXIMUM ALLOWABLE CASE TEMPERATURE FOR SINUSOIDAL CURRENT WAVEFORM — SINGLE-SIDE COOLED



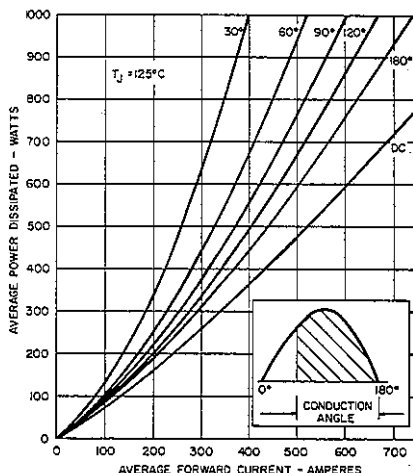
2. MAXIMUM ALLOWABLE CASE TEMPERATURE FOR RECTANGULAR CURRENT WAVEFORM — SINGLE-SIDE COOLED



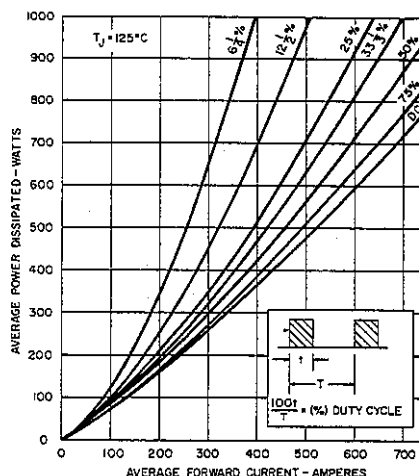
3. MAXIMUM ALLOWABLE CASE TEMPERATURE FOR SINUSOIDAL CURRENT WAVEFORM — DOUBLE-SIDE COOLED



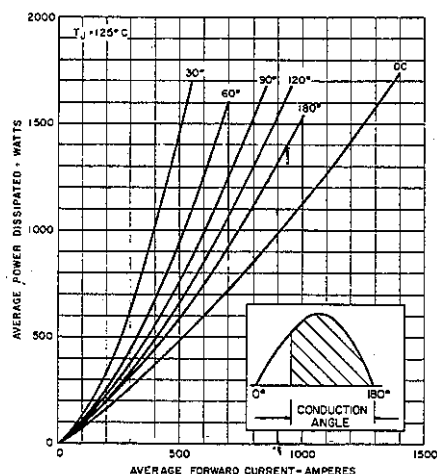
4. MAXIMUM ALLOWABLE CASE TEMPERATURE FOR RECTANGULAR CURRENT WAVEFORM — DOUBLE-SIDE COOLED



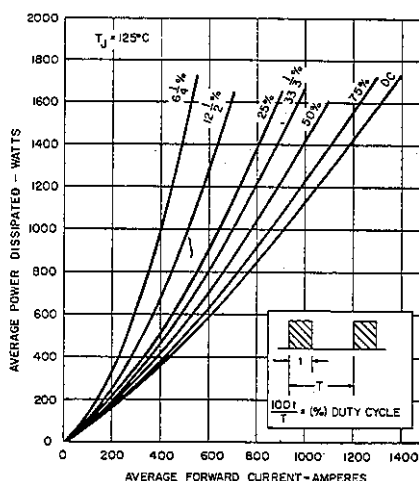
5. AVERAGE FORWARD POWER DISSIPATION FOR SINUSOIDAL CURRENT WAVEFORM



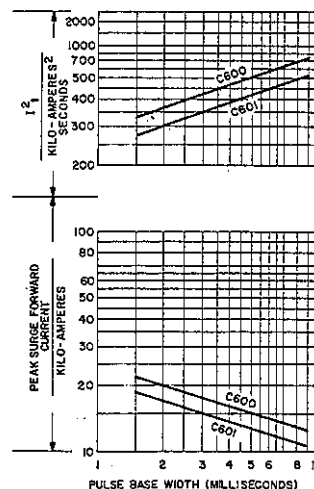
6. AVERAGE FORWARD POWER DISSIPATION FOR RECTANGULAR CURRENT WAVEFORM



7. EXTENDED FORWARD POWER DISSIPATION FOR SINUSOIDAL CURRENT WAVEFORM

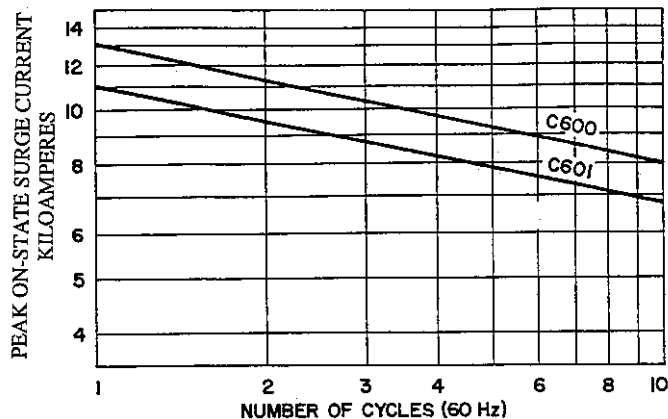


8. EXTENDED FORWARD POWER DISSIPATION FOR RECTANGULAR CURRENT WAVEFORM

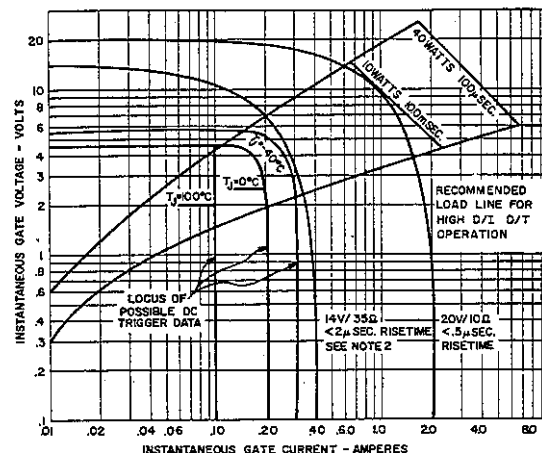


9. SUB-CYCLE SURGE AND I^2t RATING FOLLOWING RATED LOAD CONDITIONS

C600 / 6RT44

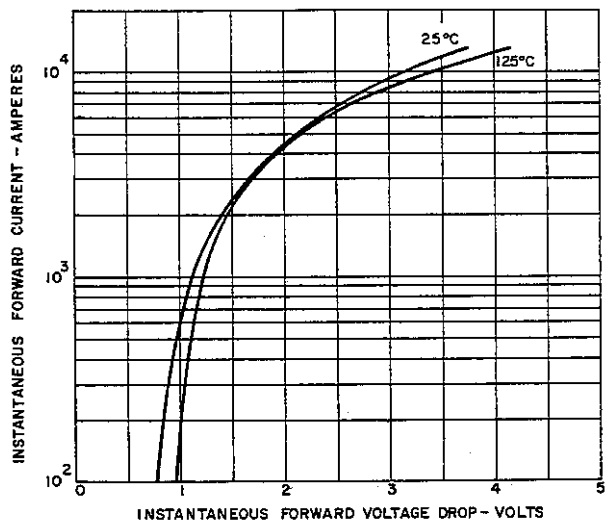


10. MAXIMUM ALLOWABLE SURGE CURRENT FOLLOWING RATED LOAD CONDITIONS

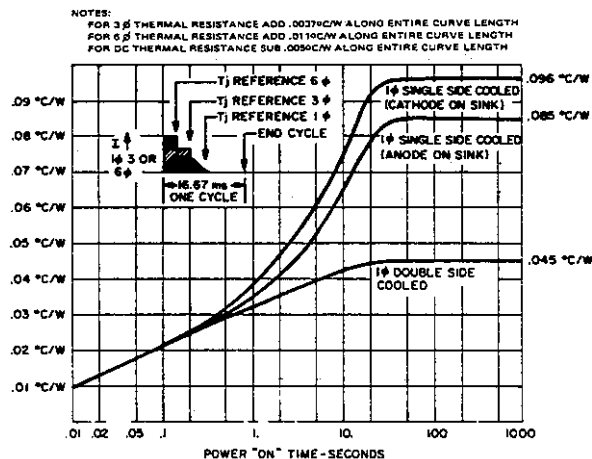


- NOTES:
(1) NON TRIGGER DATA $\pm 5\text{mA}$, $\pm 2\text{V}$ AT 125°C , $1/2$ PFV
(2) $14\text{V}/35\Omega$ LOAD LINE NOT RECOMMENDED FOR OPERATION BELOW 0°C

11. GATE TRIGGERING CHARACTERISTICS



12. FORWARD CONDUCTION CHARACTERISTIC, ON-STATE



13. Transient thermal impedance—junction to sink.