

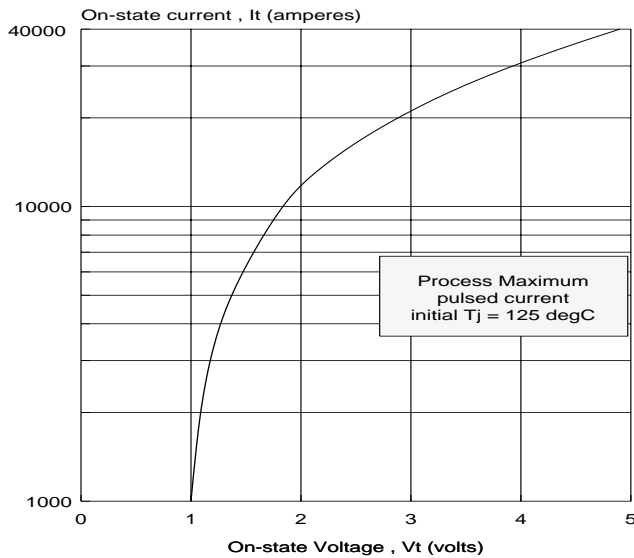
# C786

## 77mm / 2200V Thyristor

Type C786 reverse blocking thyristor, suitable for phase control applications, is especially designed for lowest on-state voltage drop. It is intended for heavy industrial, utility and transportation service.

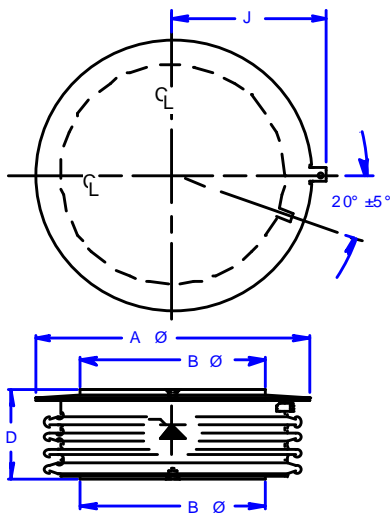
The silicon junction is manufactured by the proven multi-diffusion process and is supplied in an industry standard disc-type package, ready to mount to natural or forced cooled heat dissipators using commercially available mechanical clamping hardware.

### ON-STATE CHARACTERISTIC



C786GNR1

### MECHANICAL OUTLINE



Af = 4.35 in (110.5 mm)  
Bf = 2.88 in (73.2 mm)  
D = 1.45 in (36.8 mm)

### PRINCIPAL RATINGS AND CHARACTERISTICS

OPERATING JUNCTION TEMPERATURE RANGE  
-40 to +125°C

Repetitive peak off-state and reverse voltage	$V_{DRM}$ to $V_{RRM}$	2200V
Average on-state current @ $T_c = 70^\circ\text{C}$	$I_{T(AV)}$	3100A
Peak half cycle surge current for $V_r = 0 \text{ V}$	$I_{TSM}$	8.3 ms / 10.0 ms 51.0 kA / 47.5 kA
Maximum peak recovery current, @ 2A/ms	$I_{RM}$	60A
On-state Voltage @ $I_T = 2000\text{A}$	$V_{TM}$	1.1V
Critical rate of rise of current @ $V_D = 1500\text{V}$	$di/dt$	125A/us
Critical rate of rise of off-state voltage	$dv/dt$	1000V/us to $0.8V_{DRM}$
Turn-off time (typ)	$t_q$	400us

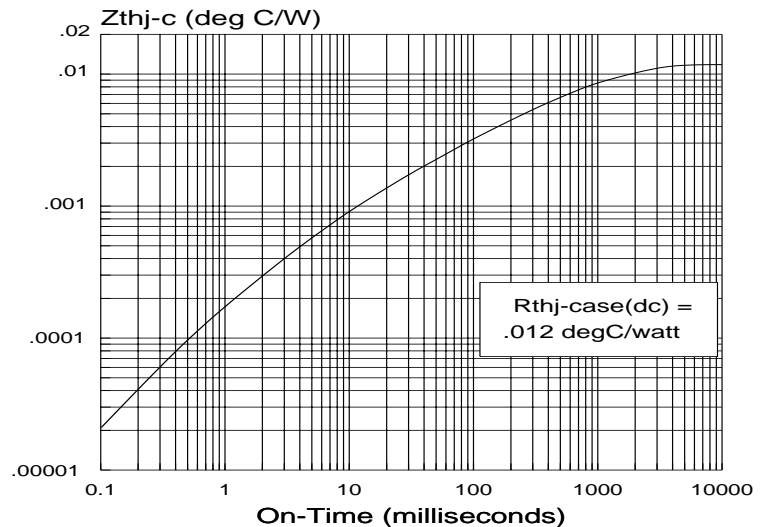
Model No.	$V_{DRM} / V_{RRM}$	Operating Temperature Range
C786LA	2100 V / 2200 V	-40°C to +125°C
C786L	2000 / 2100	
C786PT	1900 / 2000	
C786PN	1800 / 1900	

### GATE DRIVE REQUIREMENTS

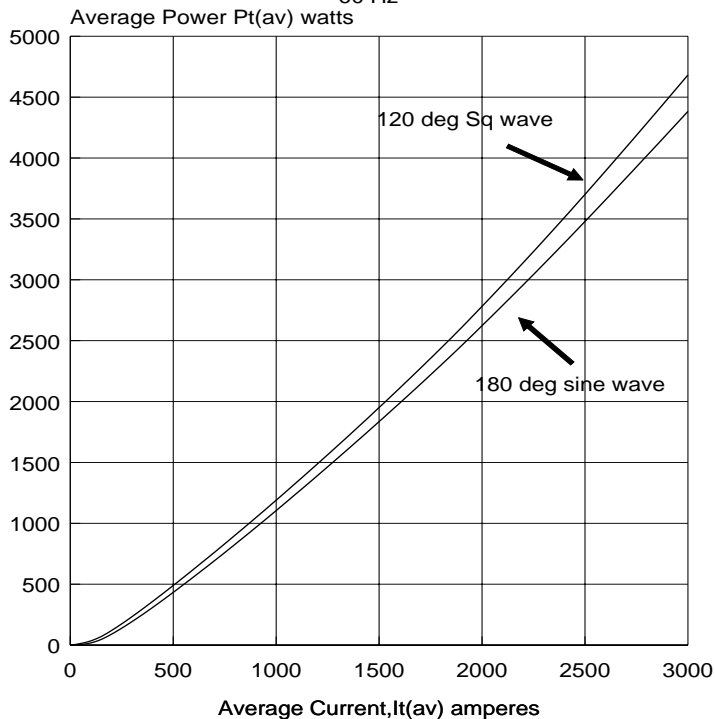
Open circuit voltage / short circuit current 30V / 3A  
Short circuit risetime 0.5us  
Minimum pulse duration 10us

EXTERNALLY REQUIRED CLAMPING FORCE  
8000 - 9000 lbs. / 35.6 - 40.0 kN

### THERMAL IMPEDANCE vs. ON-TIME



Full Cycle Average Power  
@  $T_j = 125 \text{ degC}$   
60 Hz

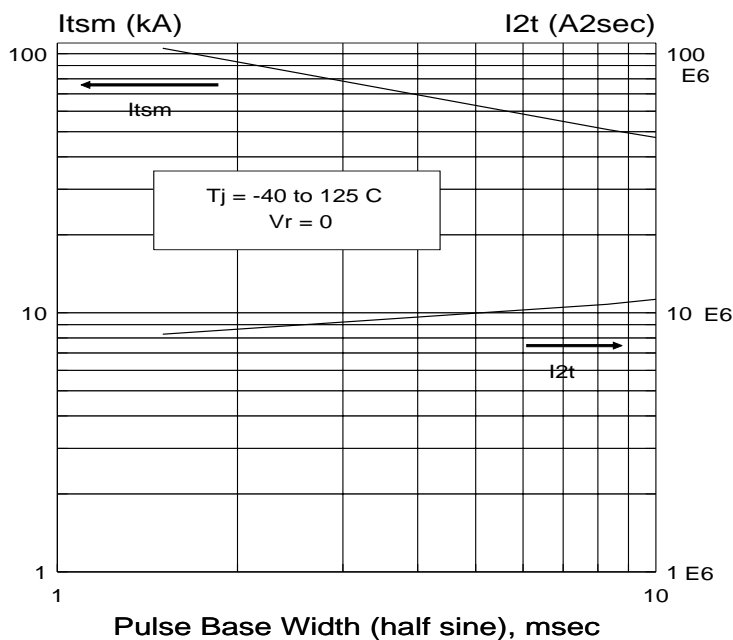


5:C786WAT

FULL CYCLE AVERAGE POWER at  $T_j = 125^\circ\text{C}$

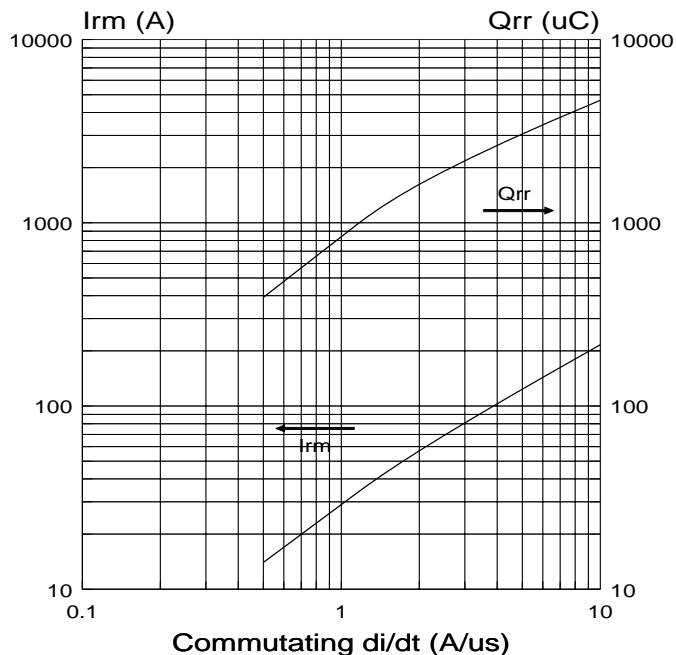
Full Cycle average	180° half-sine	120° square wave
$I_{T(AV)}$ (A)	$P_{T(AV)}$ (W)	$P_{T(AV)}$ (W)
500	432	489
600	561	624
700	692	761
800	827	902
900	964	1044
1000	1104	1189
1200	1389	1486
1400	1684	1792
1600	1985	2108
1800	2297	2436
2000	2618	2775
2500	3465	3682
3000	4383	4682
3100	4576	4894

NON-REPETITIVE SUB-CYCLE SURGE RATINGS



01G:ITSMREV3

MAXIMUM PEAK RECOVERY CURRENT versus COMMUTATING  $di/dt$



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