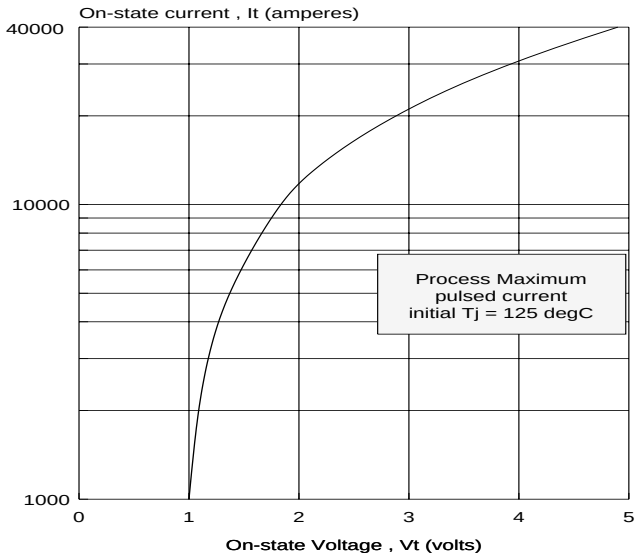
Southern States

Powers the Future

C786
77mm / 2200V Thyristor

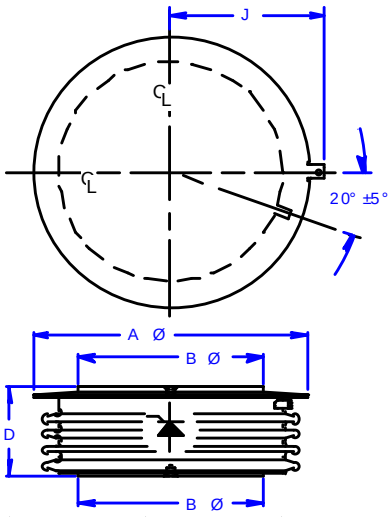
Type C786 reverse blocking thyristor, suitable for phase control applications, is especially de-signed for lowest on-state voltage drop. It is intended for heavy industrial, utility and transporta-tion service.
The silicon junction is manufactured by the proven multi-diffusion process and is supplied 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



C786ONR1

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} V_{RRM}	to 2200V
. Average on-state current @T_C=70°C	$I_{T(AV)}$	3100A
. Peak half cycle surge current for Vr = 0 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=2000A	V_{TM}	1.1V
. Critical rate of rise of current @V_D=1500V	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

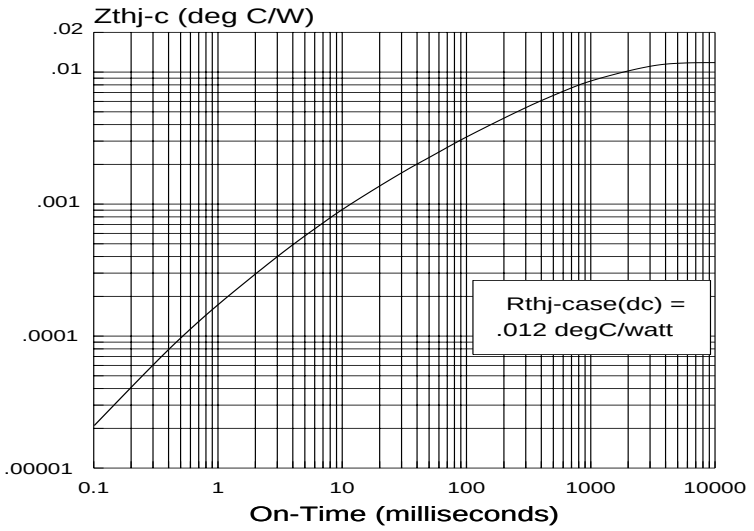
Model No.	V_{DRM} /V_{RRM} -40°C	0 to +125°C
C786LA	2100 V	2200 V
C786L	2000	2100
C786PT	1900	2000
C786PN	1800	1900

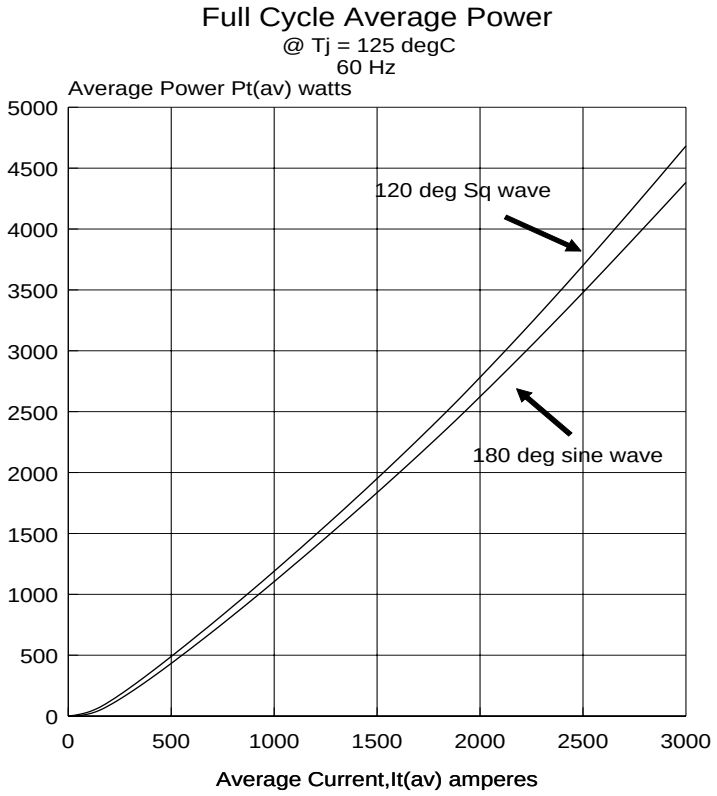
GATE DRIVE REQUIREMENTS

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





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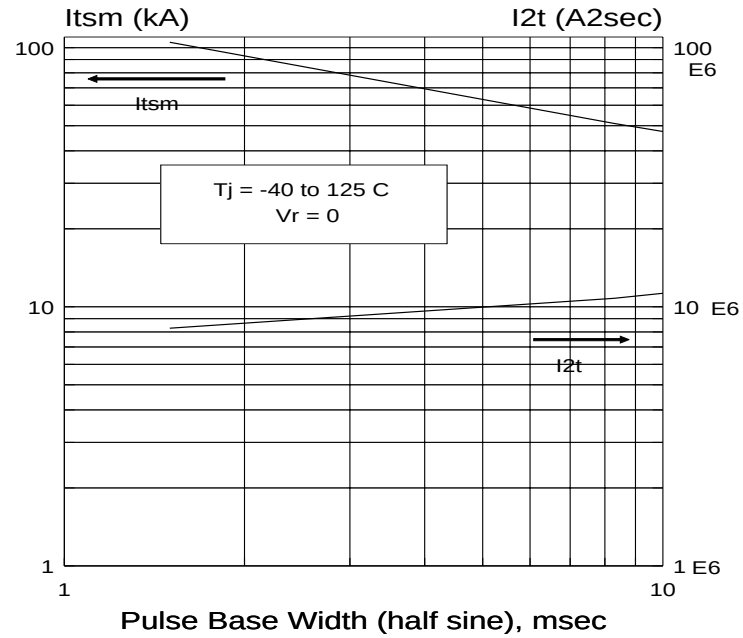
FULL CYCLE AVERAGE POWER at T_J = 125°C

Full Cycle average $I_{T(AV)}$ (A)	180° half-sine $P_{T(AV)}$ (W)	120° square wave $P_{T(AV)}$ (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



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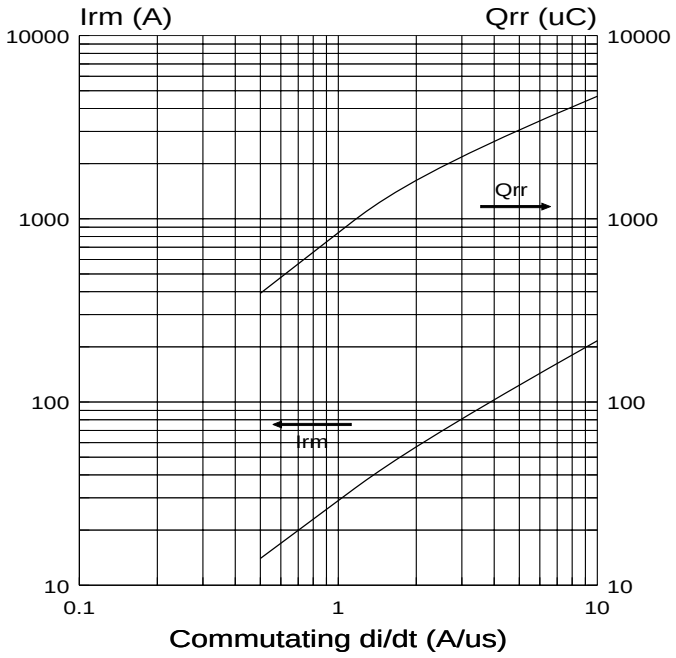
MAXIMUM PEAK RECOVERY CURRENT versus COMMUTATING di/dt



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