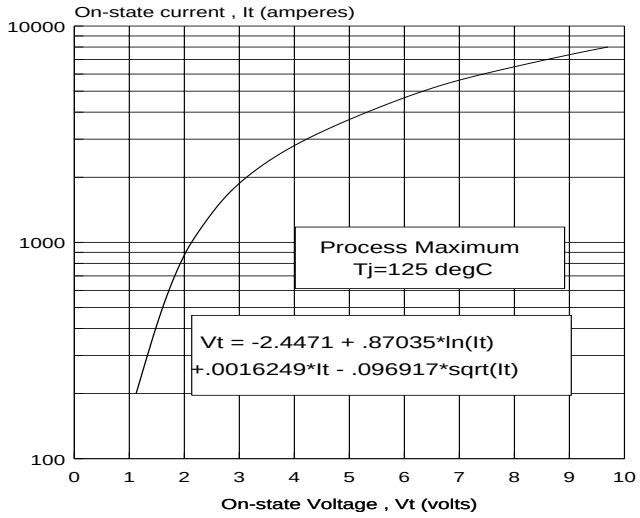
SPCO

C718
53mm / 5.0 kV THYRISTOR

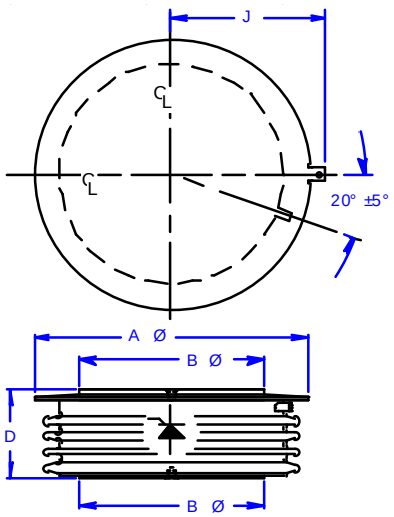
Type C718 thyristor is suitable for phase control applications such as HVDC valves, static VAR compensators and synchronous motor drives.

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 forced or naturally cooled heat dissipators using commercially available mechanical clamping hardware.

C718 Thyristor
ON-STATE CHARACTERISTIC



MECHANICAL OUTLINE



AΦ = 2.96 in (75.2 mm)
BΦ=1.90 in (48.3 mm)
D=1.07 in (27.2 mm)

PRINCIPAL RATINGS AND CHARACTERISTICS

Repetitive peak off-state & reverse volts	V_{DRM} V_{RRM}	T_J=0 to 125°C	up to 5000	V
Repetitive working crest voltage	V_{DWM} V_{DRM}	T_J=0 to 125°C	$0.8V_{DRM}$ $0.8V_{RRM}$	
Off-state & reverse leakage current	I_{DWM} I_{RWM}	T_J=0 to 125°C	75 75	ma
Average on-state current	$I_{T(AV)}$	T_{case}= 70°C	750	A
Peak half-cycle non-rep surge current	I_{TSM}	60 Hz 50 Hz	7 6.5	kA
On-state voltage	V_{TM}	I_T=1kA t_P=8ms T_J=125°C	2.1	V
Critical rate of rise of on-state current	di/dt rep	T_J=125°C 60 Hz	75	A/us
Critical rate of rise of off-state voltage	dv/dt	T_J=125°C V_D=.67V_{DRM}	1000	V/us
Recovery current	I_{RM}	T_J=125°C 2A/us 5A/us	60 100	A
Turn-on delay	t_d	Vd=.5V_{DRM}	3	us
Turn-off time	T_{off}	5A/us,-100V 20V/us to 2000V	500	us
Thermal resistance	R_{thJC}		.025	c/w
Externally applied clamping force	F		5500 24.5	lbs. kN

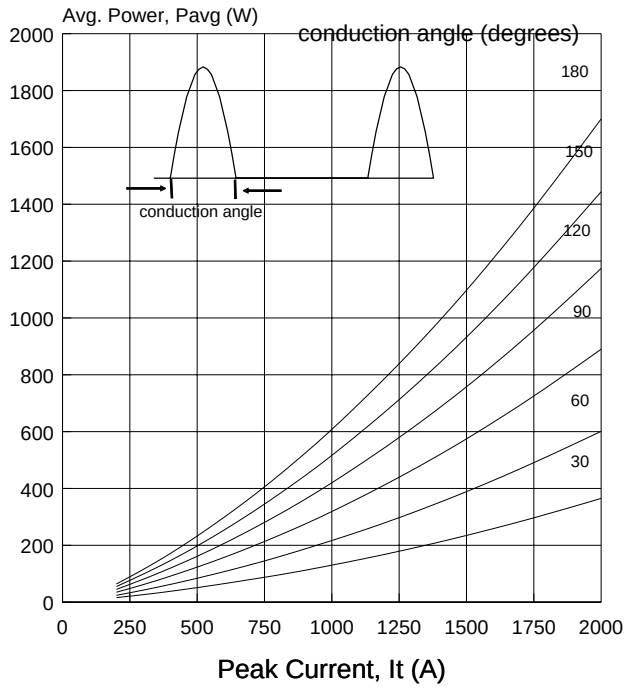
REPETITIVE PEAK REVERSE AND OFF-STATE BLOCKING VOLTAGE

T_J= 0 to 125°C

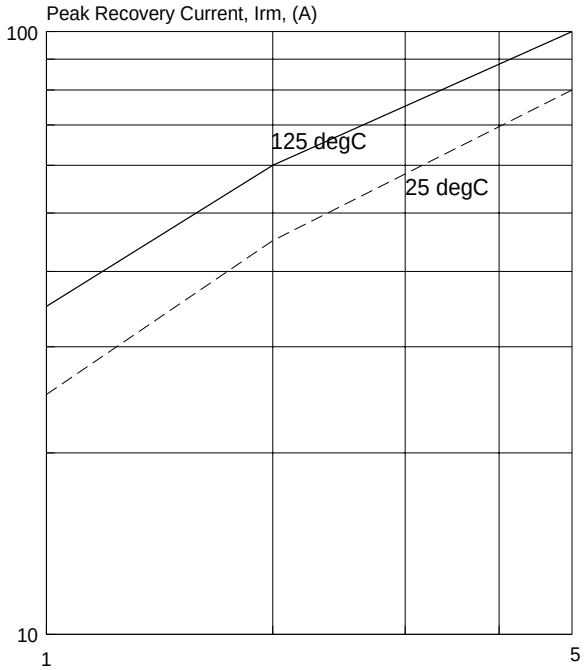
MODEL	V_{DRM} (volts)	V_{RRM} (volts)
C718EP	5000	5000
C718DT	4900	4900
C718DN	4800	4800
C718DS	4700	4700
C718DM	4600	4600
C718DE	4500	4500

SILICON POWER CORPORATION
175 GREAT VALLEY PKWY. MALVERN , PA 19355 USA

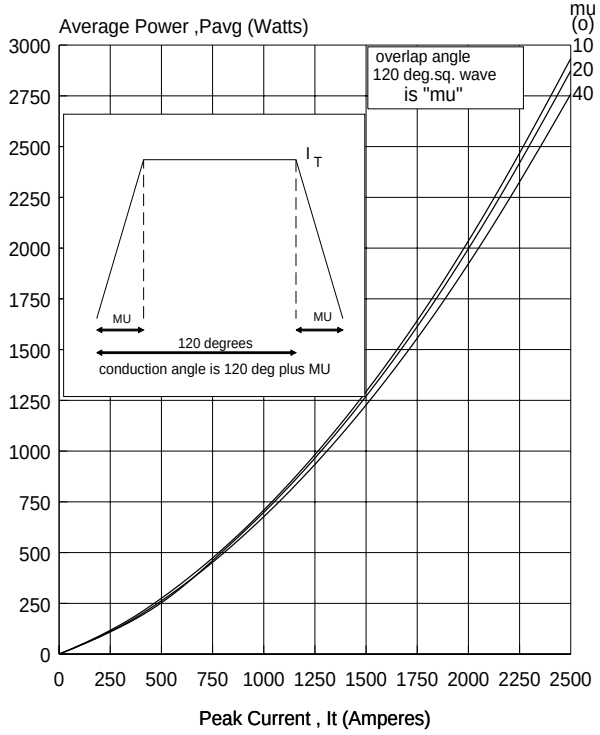
Full Cycle Average Power Loss
per C718 Thyristor



MAXIMUM PEAK RECOVERY CURRENT
versus COMMUTATING di/dt



FULL CYCLE AVERAGE POWER LOSS
versus
PEAK CURRENT at 50/60 Hz
(plasma spreading and conduction loss)



GATE SUPPLY REQUIREMENTS

Open circuit voltage	30 V
Short circuit current	3 A
- rise time	0.5us
Pulse duration (min)	20 us

11/16/90