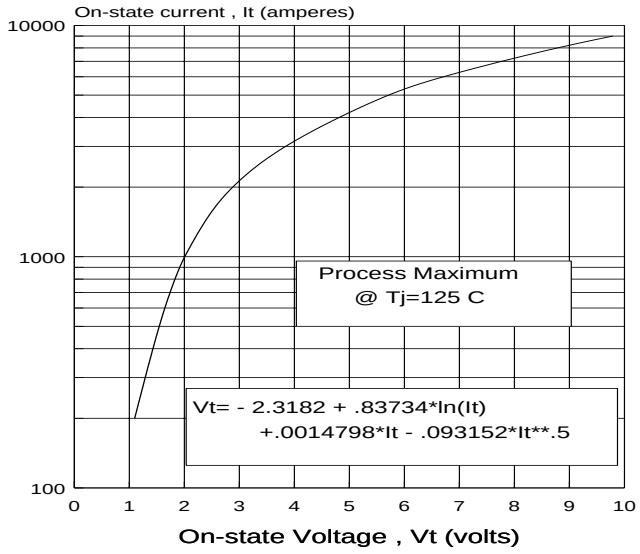
SPCO

C717
53mm / 4.5kV THYRISTOR

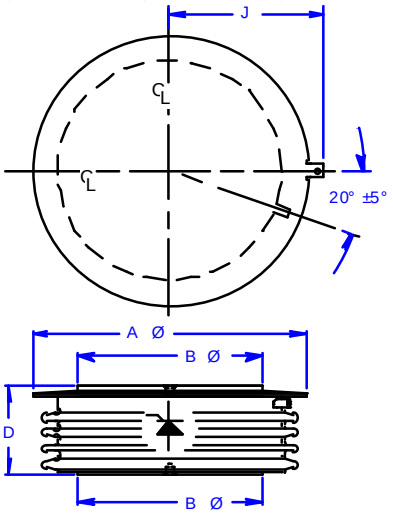
Type C717 thyristor is suitable for phase control applications such as HVDC valves, static VAR compensators and synchronous motor drives.

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.

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 4500	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	800	A
Peak half-cycle non-rep surge current	I_{TSM}	60 Hz 50 Hz	9 8	kA
On-state voltage	V_{TM}	I_T=1kA t_P=8ms T_J=125°C	2.0	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

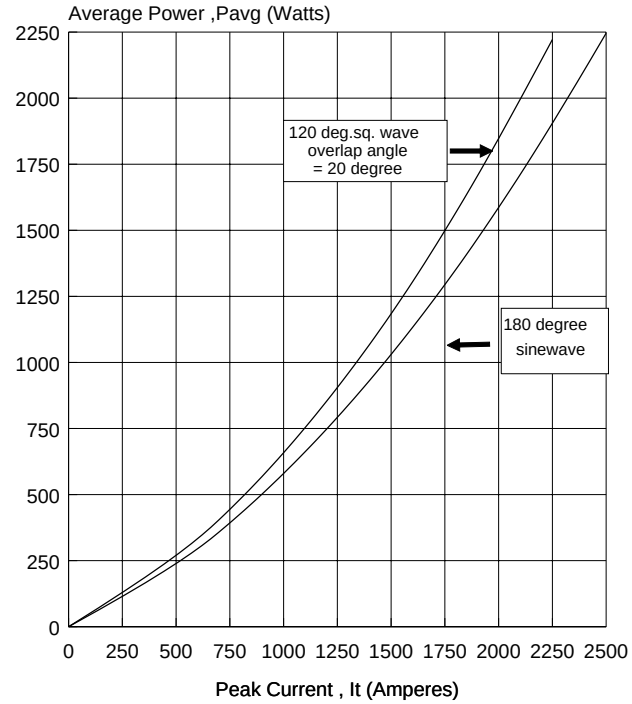
REPETITIVE PEAK REVERSE AND OFF-STATE BLOCKING VOLTAGE

T_J= 0 to 125°C

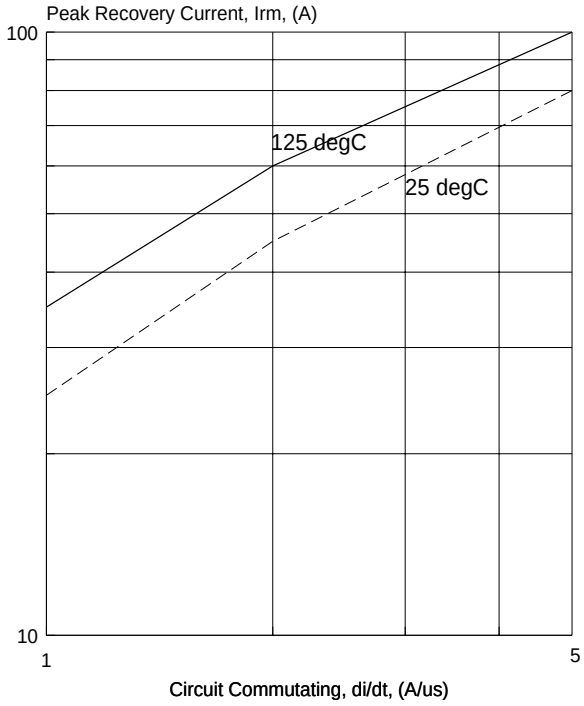
MODEL	V_{DRM} (volts)	V_{RRM} (volts)
C717DE	4500	4500
C717DD	4400	4400
C717DC	4300	4300
C717DB	4200	4200
C717DA	4100	4100
C717DP	4000	4000

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

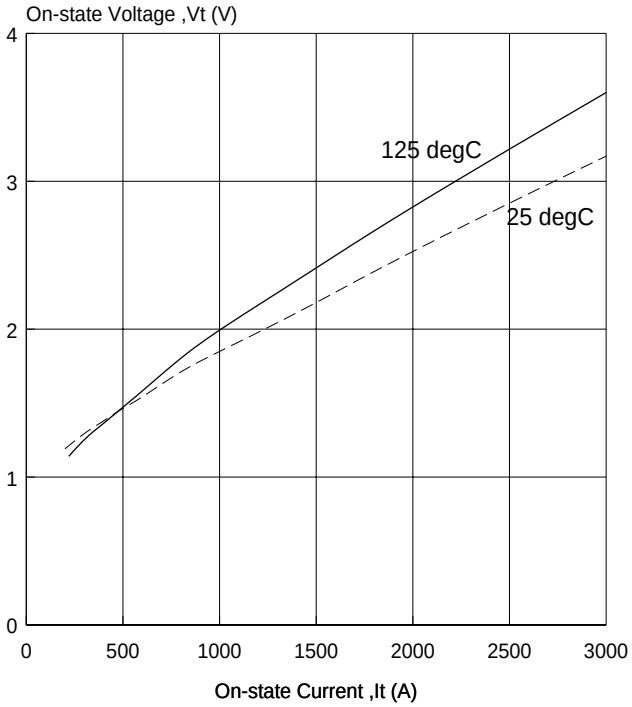
FULL CYCLE AVERAGE POWER LOSS
versus
PEAK CURRENT at 50/60 Hz
(plasma spreading and conduction loss)



MAXIMUM PEAK RECOVERY CURRENT
versus COMMUTATING di/dt



ON-STATE CHARACTERISTIC
Temperature Dependence



GATE SUPPLY REQUIREMENTS

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