

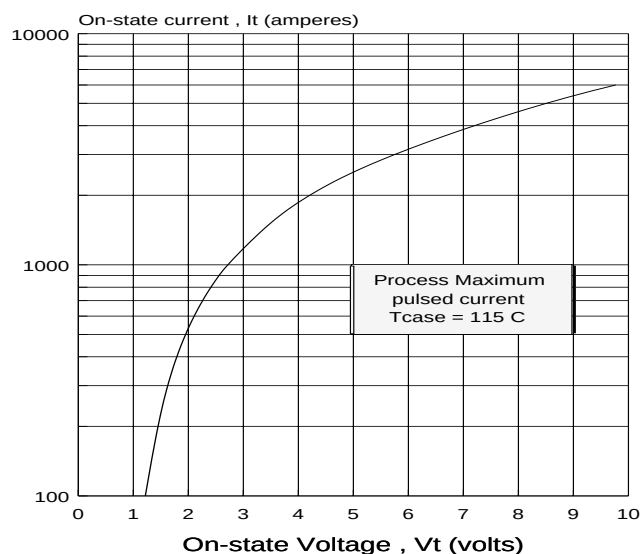
C716

53mm / 6kV THYRISTOR

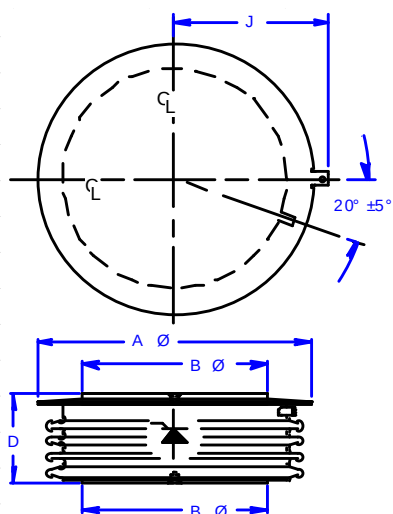
Type C716 thyristor is suitable for phase control applications such as HMC valves, static VAR compensators and synchronous motor drives.

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



A Ø= 2.96 in (75.2 mm)
B Ø= 1.90 in (48.3 mm)
D= 1.07 in (27.2 mm)

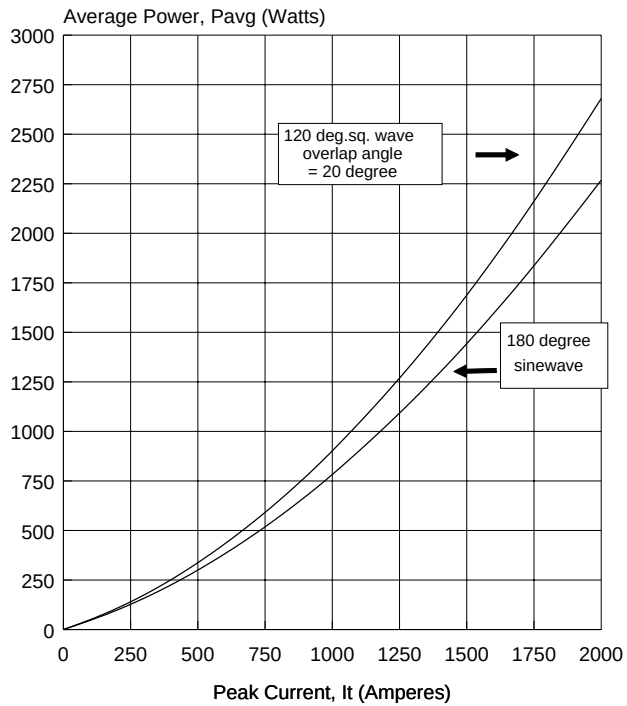
PRINCIPAL RATINGS AND CHARACTERISTICS

Repetitive peak off-state & reverse volts	V_{DRM} V_{RRM}	$T_J = 0$ to $115^\circ C$	up to 6000	V
Repetitive working crest voltage	V_{DWM} V_{RWM}	$T_J = 0$ to $115^\circ C$	0.8 V_{DRM} 0.8 V_{RRM}	ma
off-state & reverse leakage current	I_{DWM} I_{RWM}	$T_J = 0$ to $115^\circ C$	75 75	
Average on-state current	$I_{T(AV)}$	$T_{case} = 70^\circ C$	550	A
Peak half-cycle non-rep surge current	I_{TSM}	60 Hz 50 Hz	6 55	kA
On-state voltage	V_{TM}	$I_T = 500A$ $t_p = 8ms$ $T_J = 115^\circ C$	2.00	V
Critical rate of rise of on-state current	di/dt rep	$T_J = 115^\circ C$ 60 Hz	50	A/us
	$V_d = .67 V_{DRM}$ allowable snubber discharge		50	A
Critical rate of rise of off-state voltage	dv/dt	$T_J = 115^\circ C$ $V_{DCRIT} = 60\% V_{DRM}$	1500	V/us
Recovery current	I_{RM}	$T_J = 115^\circ C$ 2A/us 5A/us	60 100	A
	minimum snap factor	$S = 0.3$		
Turn-on delay	t_t	$V_d = .5 V_{DRM}$	5	us
Turn-off time	T_{off}	5A/us, -100V 20V/us to 2000V	600	us
Thermal resistance	R_{thc}		.025	c/w
Externally applied clamping force	F		5500 24.5	lbs kN

REPETITIVE PEAK REVERSE AND OFF-STATE BLOCKING VOLTAGE

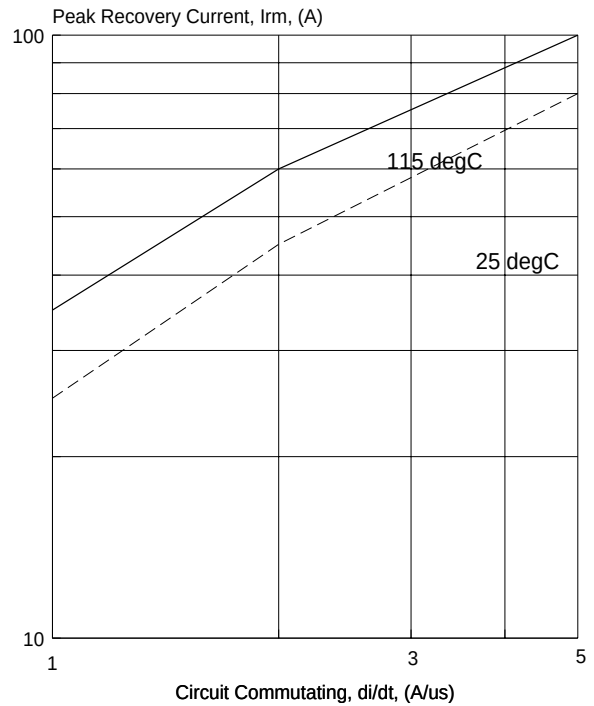
MODEL	V_{DRM} (volts)	V_{RRM} (volts)
C716FP	6000	6000
C716ET	5900	5900
C716EN	5800	5800
C716ES	5700	5700
C716EM	5600	5600
C716EE	5500	5500

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



c716los1(vt=2.0)

MAXIMUM PEAK RECOVERY CURRENT
versus COMMUTATING di/dt



C716

Full Cycle Power Loss (watts)

50/60 Hz, $T_J = 115^\circ\text{C}$

I_T (peak) Half-sine 3 Phase

(A)	180°	120°
100	45	48
200	97	106
300	157	173
400	224	250
500	299	336
600	381	431
700	470	535
800	566	647
900	670	769
1000	780	899
1200	1023	1186
1400	1293	1508
1600	1590	1864
1800	1914	2255
2000	2268	2680

GATE SUPPLY REQUIREMENTS

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