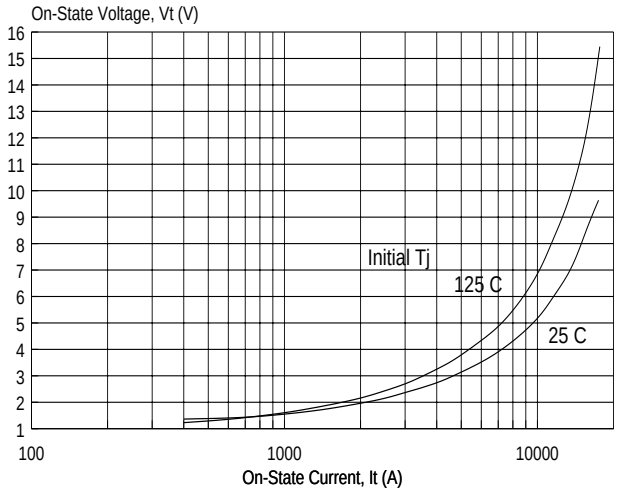
SDT122
53mm / 4.0kV THYRISTOR

Type SDT122 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.

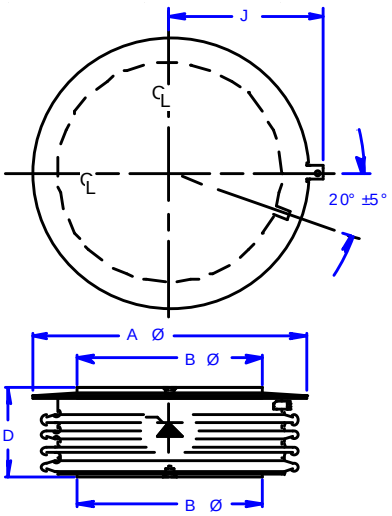
ON-STATE CHARACTERISTIC

Process Maximum
8 ms Sine Pulses



95f:

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

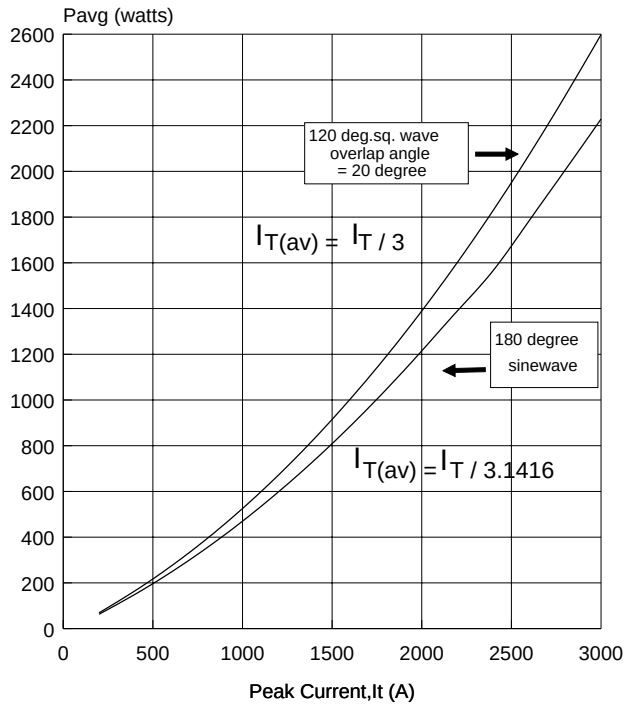
Repetitive peak off-state & reverse volts	V_{DRM} V_{RRM}	T_J=0 to 125°C	up to 4000	V
Repetitive working crest voltage	V_{DWM} V_{DRM}	T_J=0 to 125°C	$0.8V_{DRM}$ $0.8V_{RRM}$	
Off-state & reverse leakage current	I_{DWM} I_{RWM}	T_J=0 to 125°C	75 75	ma
Average on-state current	$I_{T(AV)}$	T_{case}= 70°C	950	A
Peak half-cycle non-rep surge current	I_{TSM}	60 Hz 50 Hz	16.0 14.7	kA
On-state voltage	V_{TM}	I_T=1kA t_P=8ms T_J=125°C	1.60	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= .8V_{DRM}	1000	V/us
Recovery current	I_{RM}	T_J=125°C 2A/us 5A/us	60 110	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

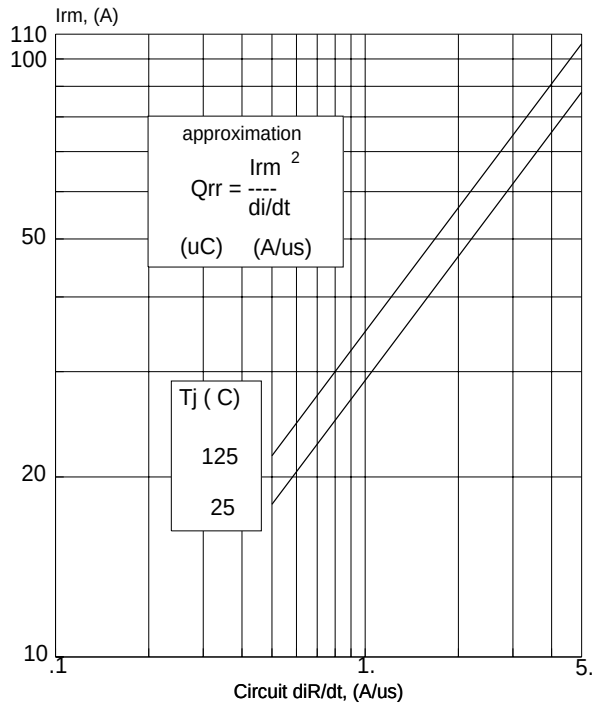
MODEL	V_{DRM} (volts)	V_{RRM} (volts)
SDT122FT	4000	4000
SDT122FS	3900	3900
SDT122FR	3800	3800
SDT122FP	3700	3700
SDT122FM	3600	3600
SDT122FK	3500	3500

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



95f:

MAXIMUM PEAK RECOVERY CURRENT



95F:

Full Cycle Power Loss (watts)

50/60 Hz, T_J=125°C

I_T (peak) (A)	Half-sine 180°	3 Phase 120°
200	63	69
400	147	162
600	244	270
800	351	390
1000	468	523
1200	596	669
1400	734	828
1600	883	1001
1800	1043	1187
2000	1213	1387
2200	1394	1601
2400	1556	1829
2600	1789	2071
2800	2004	2327
3000	2229	2598

GATE SUPPLY REQUIREMENTS

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