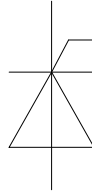
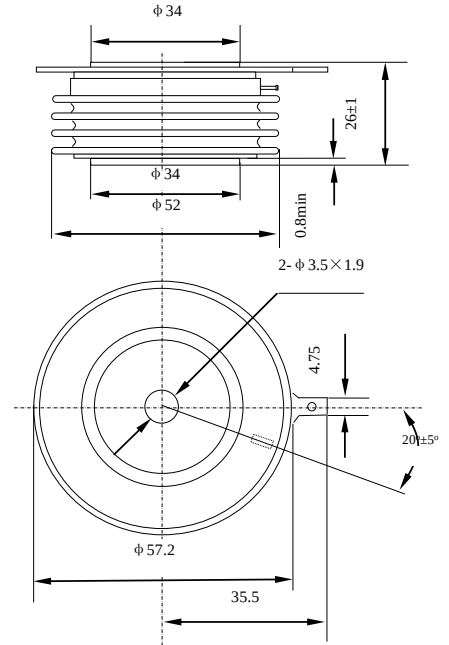


ST900

Phase Control Thyristor DISC



Dimensions in mm (1mm=0.0394")



Type	V _{RSM} V	V _{RRM} V
ST900G08	900	800
ST900G12	1300	1200
ST900G14	1500	1400
ST900G16	1700	1600
ST900G18	1900	1800
ST900G20	2100	2000
ST900G22	2300	2200

FEATURES

- * International standard package
- * Center amplifying gate
- * Metal case with ceramic insulator
- * Low on-state and switching losses
- * RoHS compliance

APPLICATIONS

- * Motor control, softstarter
- * Power converter
- * Heat and temperature control for industrial furnaces and chemical processes
- * Lighting control
- * Solid state AC switch

ADVANTAGES

- * Simple mounting
- * Improved temperature and power cycling
- * Reduced protection circuit

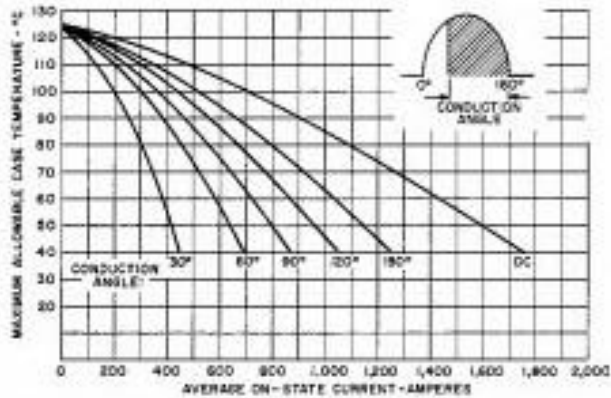
ST900

Phase Control Thyristor DISC

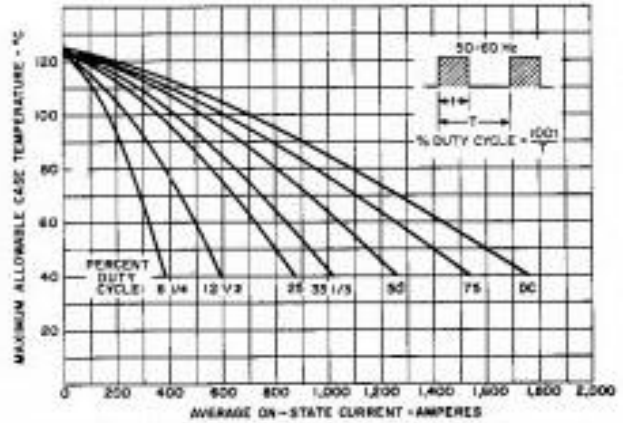
SYMBOL	CHARACTERISTIC	TEST CONDITIONS		T _j (°C)	VALUE			UNIT
					Min	Type	Max	
I _{T(AV)}	Mean on-state current	180° half sine wave 50Hz Double side cooled,	T _C =55°C	125			1240	A
			T _C =85°C				900	
V _{DRM} V _{RRM}	Repetitive peak off-state voltage Repetitive peak reverse voltage	V _{DRM} &V _{RRM} t _p =10ms V _{DSM} &V _{RSM} = V _{DRM} &V _{RRM} +100V		125	800		2200	V
I _{DRM} I _{RRM}	Repetitive peak current	V _{DM} = V _{DRM} V _{RM} = V _{RRM}		125			50	mA
I _{TSM}	Surge on-state current	10ms half sine wave		125			18	kA
I ² t	I ² T for fusing coordination	V _R =0.6V _{RRM}					1250	A ² s*10 ³
V _{TO}	Threshold voltage			125			0.85	V
r _T	On-state slop resistance						0.33	mΩ
V _{TM}	Peak on-state voltage	I _{TM} =4000A, F=35kN		25			2.00	V
dv/dt	Critical rate of rise of off-state voltage	V _{DM} =0.67V _{DRM}		125	1000			V/μs
di/dt	Critical rate of rise of on-state current	V _{DM} = 67%V _{DRM} to 2500A, Gate pulse t _r ≤0.5μs I _{GM} =1.5A		125	250			A/μs
Q _{rr}	Recovery charge	I _{TM} =2000A, t _p =2000μs, di/dt=-20A/μs, V _R =50V		125		1200		μC
I _{GT}	Gate trigger current	V _A =12V, I _A =1A		25	40		300	mA
V _{GT}	Gate trigger voltage				0.8		2.5	V
I _H	Holding current				20		300	mA
V _{GD}	Non-trigger gate voltage	V _{DM} =67%V _{DRM}		125	0.3			V
R _{th(j-c)}	Thermal resistance Junction to case	At 180° sine double side cooled Clamping force 35.0kN					0.032	°C /W
R _{th(c-h)}	Thermal resistance case to heatsink						0.0025	
F _m	Mounting force			14			16	kN
T _{stg}	Stored temperature				-40		140	°C
W _t	Weight					280		g

ST900

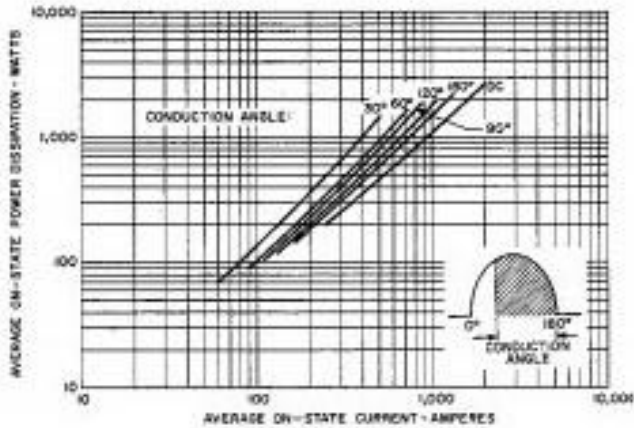
Phase Control Thyristor DISC



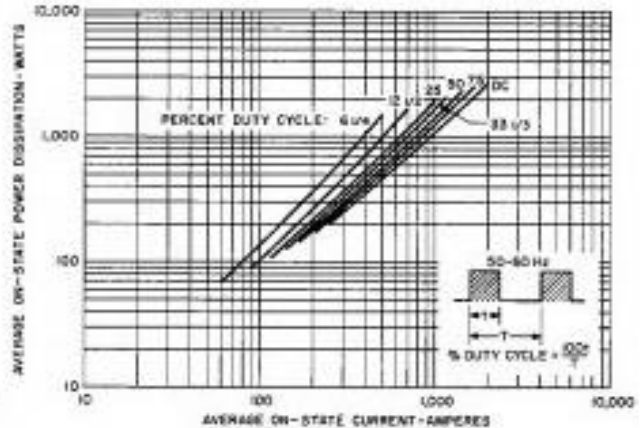
1. MAXIMUM ALLOWABLE CASE TEMPERATURE FOR SINUSOIDAL CURRENT WAVEFORM – DOUBLE-SIDE COOLED



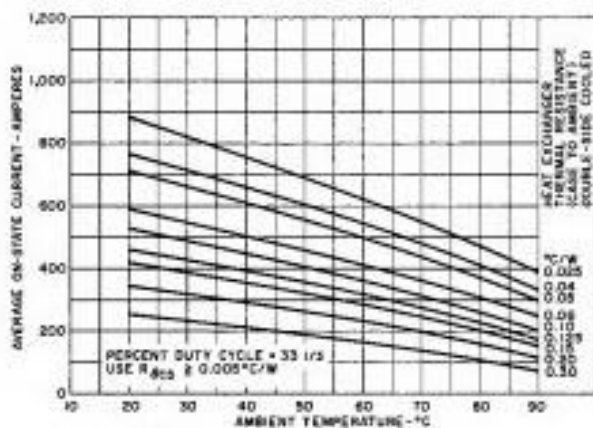
2. MAXIMUM ALLOWABLE CASE TEMPERATURE FOR RECTANGULAR CURRENT WAVEFORM – DOUBLE-SIDE COOLED



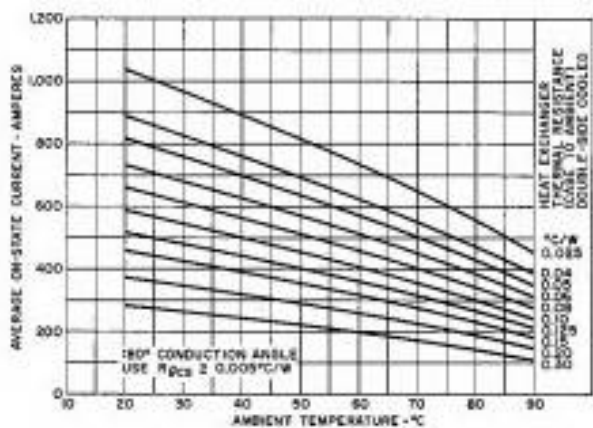
3. AVERAGE ON-STATE POWER DISSIPATION FOR SINUSOIDAL CURRENT WAVEFORM



4. AVERAGE ON-STATE POWER DISSIPATION FOR RECTANGULAR CURRENT WAVEFORM



5. AVERAGE RECTANGULAR ON-STATE CURRENT VS. AMBIENT TEMPERATURE WHEN USED WITH VARIOUS HEAT EXCHANGERS

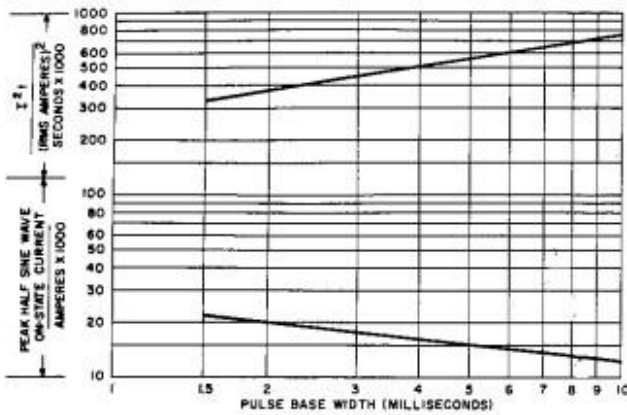


6. AVERAGE HALF SINE WAVE ON-STATE CURRENT VS. AMBIENT TEMPERATURE WHEN USED WITH VARIOUS HEAT EXCHANGERS

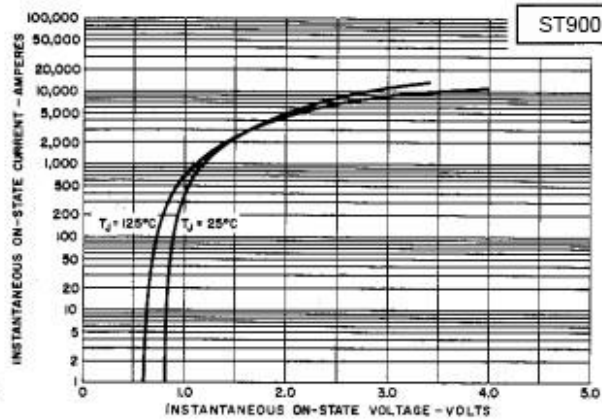
Sirectifier®

ST900

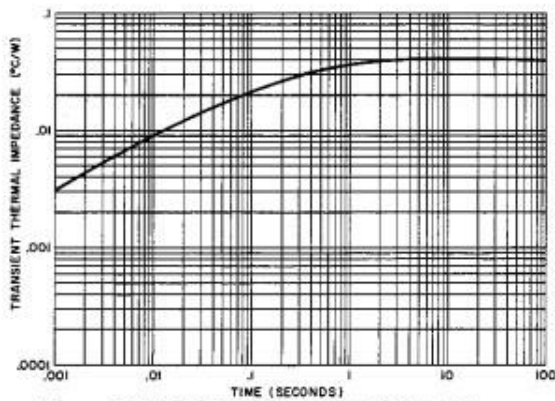
Phase Control Thyristor DISC



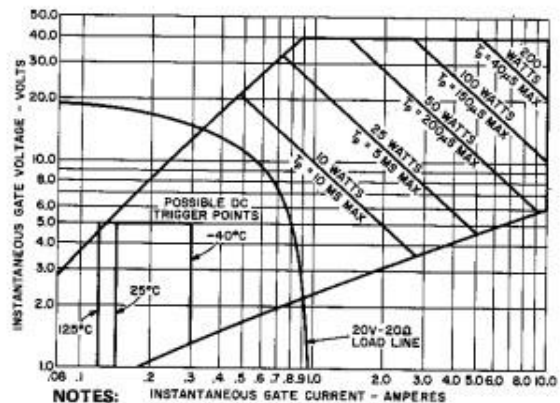
7. SUB-CYCLE SURGE (NON-REPETITIVE) AND I^2t RATINGS



8. MAXIMUM ON-STATE CHARACTERISTICS



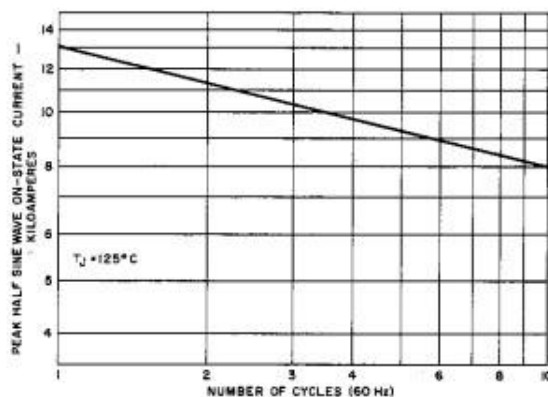
9. TRANSIENT THERMAL IMPEDANCE - JUNCTION-TO-CASE (DOUBLE-SIDE COOLED)



NOTES:

1. Maximum allowable average gate dissipation = 5 watts.
2. The locus of possible DC trigger points lies outside the boundaries shown at various case temperatures.
3. T_p = Rectangular Gate Current Pulse Width.

10. GATE TRIGGERING CHARACTERISTICS



11. MAXIMUM ALLOWABLE SURGE (NON-REPETITIVE) ON-STATE CURRENT

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