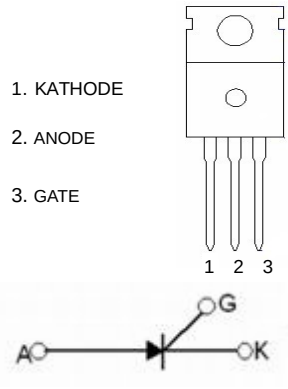
Silicon Planar PNPN Thyristor (10A SCR)

MAIN FEATURES

Symbol	value	unit
$I_{T(RMS)}$	10	A
V_{DRM}/V_{RRM}	600	V
I_{TSM}	100	A

TO-220



GENERAL DESCRIPTION

.Glass passivated triacs in a plastic envelope ,
intended for use in applications requiring
high bidirectional transient andblocking
voltage capability and high thermal cycling performance.
.Typical applications include motor control,
industrial and domestic lighting , heating and static switching.

ABSOLUTE MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

symbol	parameter			value	unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	D^2 PAK/TO-220	T_C=107℃	10	A
I_{TSM}	Non repetitive surge peak on-state current (full sine wave, Tj =25℃)		t=10ms	100	A
			t=8.3ms	110	
I_{GM}	Peak gate current			4	A
$P_{G(AV)}$	Average gate power dissipation		T_j=125℃	0.5	W
T_{stg}	Storage junction temperature range			-40 to +150	℃
T_j	Operating junction temperature range			-40 to +125	

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Rated repetitive peak off-state/reverse voltage	V_{DRM},V_{RRM}	I_D=10μA	600		V
Rated repetitive peak off-state current	I_{DRM}, I_{RRM}	V_D=620V		10	μA
On-state voltage	V_{TM}	I_T=23A	1.4	1.75	V
Gate trigger current	I_{GT}	V_D=12V I_T =0.1A R_L=100Ω		15	mA
Gate trigger voltage	V_{GT}	V_D=12V I_T =0.1A R_L=100Ω		1.45	V
Holding current	I_H	I_T =100mA I_G=20mA		20	mA

Typical Characteristics

Figure 1: Maximum average power dissipation versus average on- state current

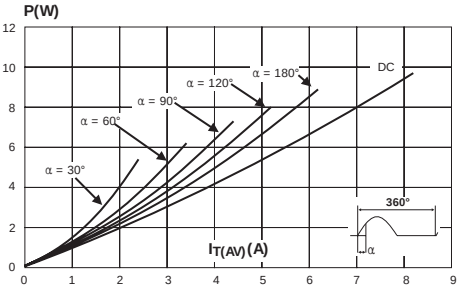


Figure 2: Correlation between maximum average power dissipation and maximum allowable temperature (T_{amb} and T_{lead})

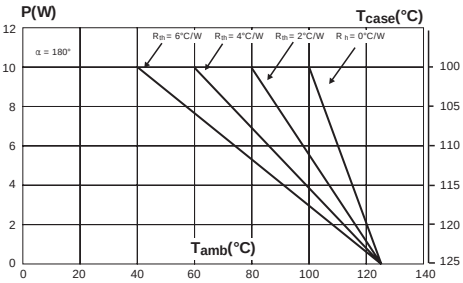


Figure 3: Average on- state current versus case temperature

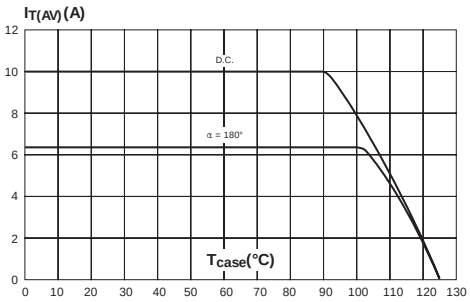


Figure 4: Relative variation of thermal impedance versus pulse duration

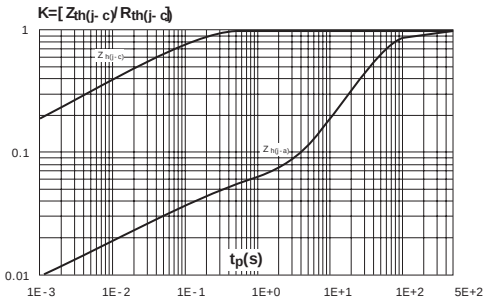


Figure 5: Relative variation of gate trigger current versus junction temperature

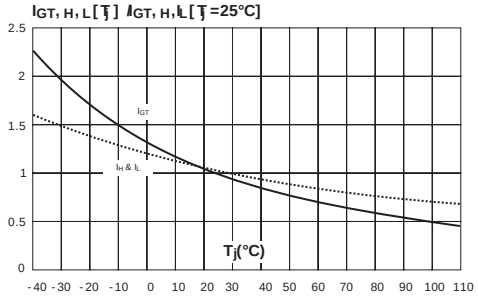


Figure 6: Surge peak on- state current versus number of cycles

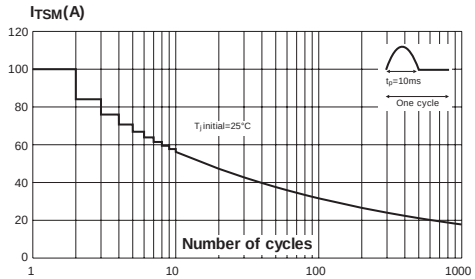


Figure 7: Non- repetitive surge peak on- state current for a sinusoidal pulse with width tp < 10 ms, and corresponding values of I²t

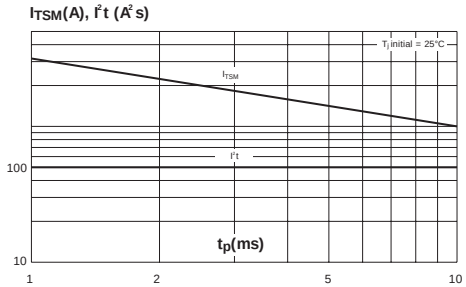


Figure 8: On- state characteristics (maximum values)