

Silicon Planar PNP Thyristor (12A SCR)

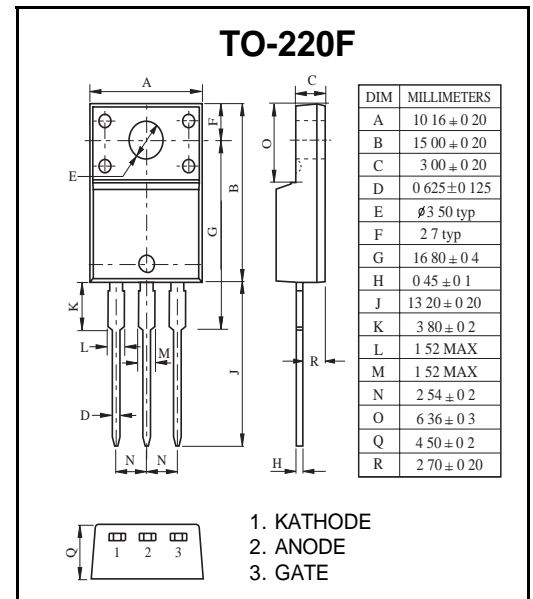
MAIN FEATURES

Symbol	value	unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	600	V
I_{TSM}	120	A



GENERAL DESCRIPTION

- Glass passivated triacs in a plastic envelope, intended for use in applications requiring high bidirectional transient and blocking 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°C unless otherwise noted)

symbol	parameter			value	unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	TO-220F	$T_C=90^\circ C$	12	A
I_{TSM}	Non repetitive surge peak on-state current (full sine wave, $T_j=25^\circ C$)		$t=10ms$	120	A
			$t=8.3ms$	130	
I_{GM}	Peak gate current			4	A
$P_{G(AV)}$	Average gate power dissipation		$T_j=125^\circ C$	0.5	W
T_{stg}	Storage junction temperature range			-40 to +150	°C
T_j	Operating junction temperature range			-40 to +125	

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Rated repetitive peak off-state/reverse voltage	V_{DRM}, V_{RRM}	$I_D=10\mu A$	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}	$V_D=12V$ $I_T=0.1A$ $R_L=100\Omega$		20	mA
Gate trigger voltage	V_{GT}	$V_D=12V$ $I_T=0.1A$ $R_L=100\Omega$		1.30	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

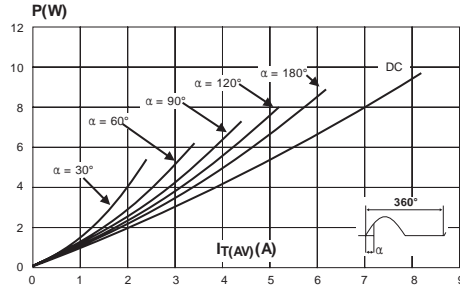


Figure 2: Correlation between maximum average power dissipation and maximum allowable temperature (T_{amb} and T_{lead})

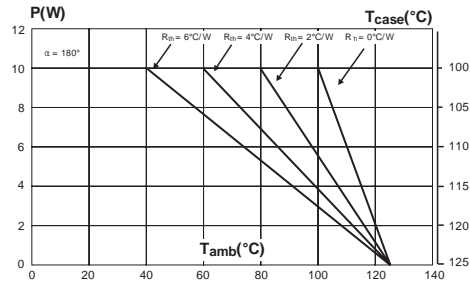


Figure 3: Average on-state current versus case temperature

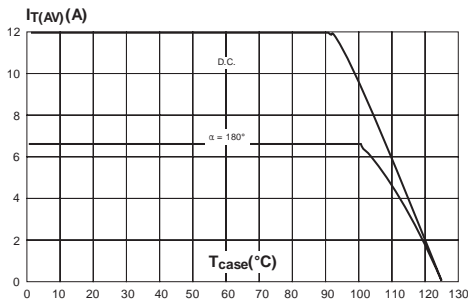


Figure 4: Relative variation of thermal impedance versus pulse duration

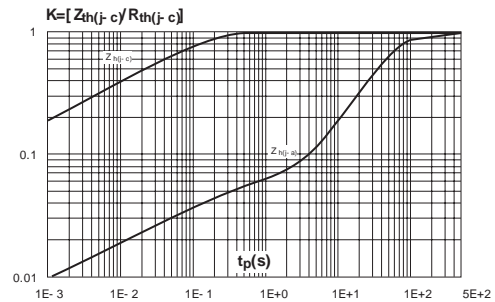


Figure 5: Relative variation of gate trigger current versus junction temperature

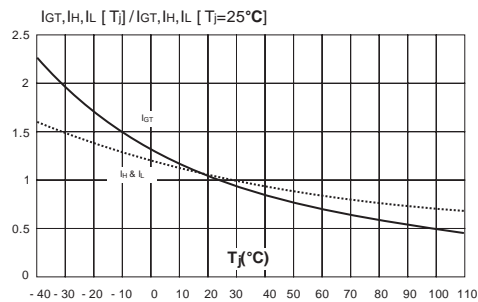


Figure 6: Surge peak on-state current versus number of cycles

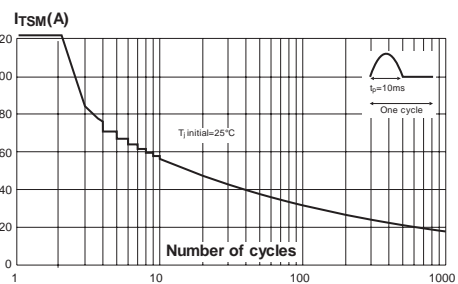


Figure 7: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10$ ms, and corresponding values of I^2t

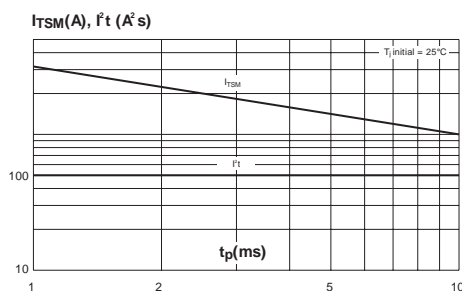


Figure 8: On-state characteristics (maximum values)

