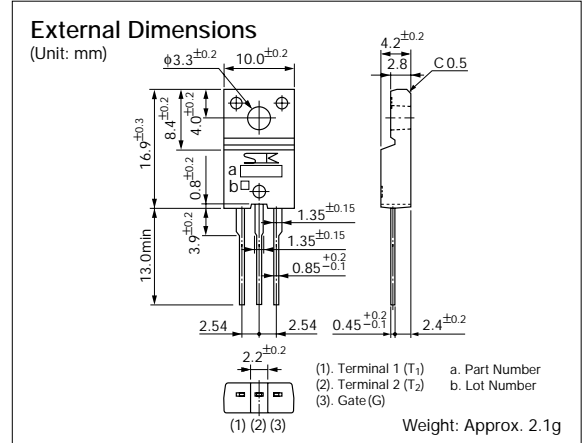


# TO-220F 5A Triac

## TM583S-L

### ■ Features

- Repetitive peak off-state voltage:  $V_{DRM}=800V$
- RMS on-state current:  $I_{T(RMS)}=5A$
- Gate trigger current:  $I_{GT}=20mA$  max (MODE I, II, III)
- Isolation voltage:  $V_{ISO}=1500V$  (50Hz Sine wave, RMS)



### ■ Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit	Conditions
Repetitive peak off-state voltage	$V_{DRM}$	800	V	$R_{GK}=\infty$ , $T_j=-40$ to $+125^\circ C$
RMS on-state current	$I_{T(RMS)}$	5.0	A	Conduction angle = $360^\circ$ , $T_c=101^\circ C$
Surge on-state current	$I_{TSM}$	45	A	50Hz full-cycle sine wave, Peak value, Non-repetitive, $T_j=125^\circ C$
Peak gate voltage	$V_{GM}$	10	V	$f \geq 50Hz$ , duty $\leq 10\%$
Peak gate current	$I_{GM}$	2	A	$f \geq 50Hz$ , duty $\leq 10\%$
Peak gate power dissipation	$P_{GM}$	5	W	$f \geq 50Hz$ , duty $\leq 10\%$
Average gate power dissipation	$P_{G(AV)}$	0.5	W	
Junction temperature	$T_j$	-40 to +125	$^\circ C$	
Storage temperature	$T_{stg}$	-40 to +125	$^\circ C$	
Isolation voltage	$V_{ISO}$	1500	V <sub>rms</sub>	50Hz Sine wave, RMS, Terminal to Case, 1 min.

### ■ Electrical Characteristics

( $T_j=25^\circ C$ , unless otherwise specified)

Parameter	Symbol	Ratings			Unit	Conditions	
		min	typ	max			
Off-state current	$I_{DRM}$			2.0	mA	$V_D=V_{DRM}$ , $R_{GK}=\infty$ , $T_j=125^\circ C$	
				0.1		$V_D=V_{DRM}$ , $R_{GK}=\infty$ , $T_j=25^\circ C$	
On-state voltage	$V_{TM}$			1.6	V	$I_{TM}=7A$ , $T_c=25^\circ C$	
Gate trigger voltage	$V_{GT}$	I	1.3	2.0	V	$V_D=6V$ , $R_L=10\Omega$ , $T_c=25^\circ C$	$T_2^+$ , $G^+$
		II	0.7	2.0			$T_2^+$ , $G^-$
		III	0.8	2.0			$T_2^-, G^-$
Gate trigger current	$I_{GT}$	I	7	20	mA	$V_D=6V$ , $R_L=10\Omega$ , $T_c=25^\circ C$	$T_2^+$ , $G^+$
		II	10	20			$T_2^+$ , $G^-$
		III	12	20			$T_2^-, G^-$
Gate non-trigger voltage	$V_{GD}$	0.2			V	$V_D=1/2 \times V_{DRM}$ , $T_j=125^\circ C$	
Holding current	$I_H$		20		mA	$T_j=25^\circ C$	
Rising rate of off-state voltage in commutating	$(dv/dt)_c$	5			V/ $\mu s$	$V_D=400V$ , $(di/dt)_c = -2A/ms$ , $T_j=125^\circ C$ , $I_T=1A$	
Thermal resistance	$R_{th}$			4.0	$^\circ C/W$	Junction to Case	