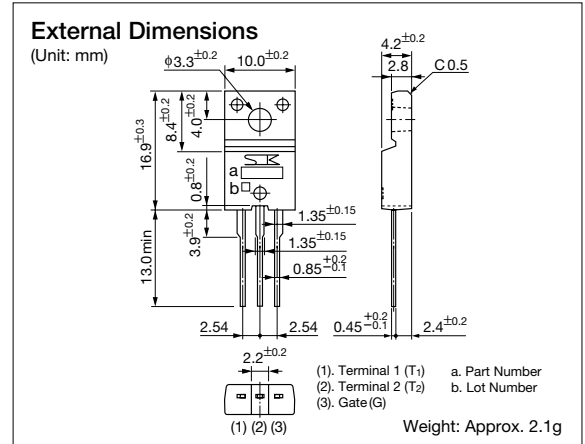


# TO-220F 12A Triac

## TM1241S-R, TM1261S-R

### Features

- Repetitive peak off-state voltage:  $V_{DRM}=400, 600V$
- RMS on-state current:  $I_{T(RMS)}=12A$
- Gate trigger current:  $I_{GT}=8mA$  max (MODE I, II, III)
- Isolation voltage:  $V_{ISO}=1500V$  (50Hz Sine wave, RMS)
- For resistive load
- UL approved type available



### Absolute Maximum Ratings

Parameter	Symbol	Ratings		Unit	Conditions
		TM1241S-R	TM1261S-R		
Repetitive peak off-state voltage	$V_{DRM}$	400	600	V	
RMS on-state current	$I_{T(RMS)}$	12		A	Conduction angle 360°, $T_c=84^\circ C$
Surge on-state current	$I_{TSM}$	110		A	50Hz full-cycle sinewave, Peak value, Non-repetitive, $T_j=125^\circ C$
Peak gate voltage	$V_{GM}$	—		V	
Peak gate current	$I_{GM}$	2		A	
Peak gate power loss	$P_{GM}$	5		W	
Average gate power loss	$P_{G(AV)}$	0.5		W	
Junction temperature	$T_j$	-40 to +125		°C	
Storage temperature	$T_{stg}$	-40 to +125		°C	
Isolation voltage	$V_{ISO}$	1500		Vrms	50Hz Sine wave, RMS, Terminal to Case, 1 min.

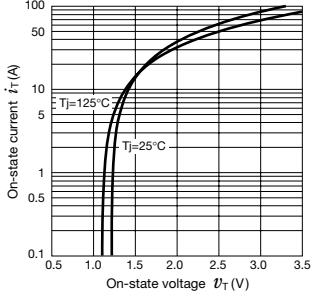
### Electrical Characteristics

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

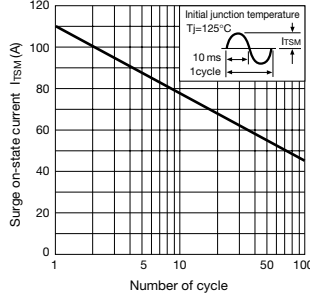
Parameter	Symbol	Ratings			Unit	Conditions	
		min	typ	max			
Off-state current	$I_{DRM}$			2.0	mA	$V_D=V_{DRM}, R_{GK}=\infty, T_j=125^\circ C$	
				0.1		$V_D=V_{DRM}, R_{GK}=\infty, T_j=25^\circ C$	
On-state voltage	$V_{TM}$			1.6	V	Pulse test, $I_{TM}=16A$	
Gate trigger voltage	$V_{GT}$	I	1.1	1.8	V	$V_D=6V, R_L=10\Omega, T_c=25^\circ C$	$T_2^+, G^+$
		II	0.6	1.2			$T_2^+, G^-$
		III	0.7	1.2			$T_2^-, G^-$
		IV	2.1				$T_2^-, G^+$
Gate trigger current	$I_{GT}$	I	5	8	mA	$V_D=6V, R_L=10\Omega, T_c=25^\circ C$	$T_2^+, G^+$
		II	4.5	8			$T_2^+, G^-$
		III	5	8			$T_2^-, G^-$
		IV	25				$T_2^-, G^+$
Gate non-trigger voltage	$V_{GD}$	0.1			V	$V_D=1/2 \times V_{DRM}, T_j=125^\circ C$	
Holding current	$I_H$		6		mA	$V_D=6V$	
Thermal resistance	$R_{th}$			3.0	°C/W	Junction to case	

# TM1241S-R, TM1261S-R

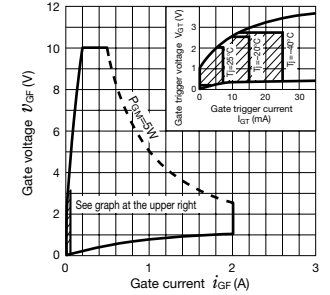
$V_T - I_T$  Characteristics (max)



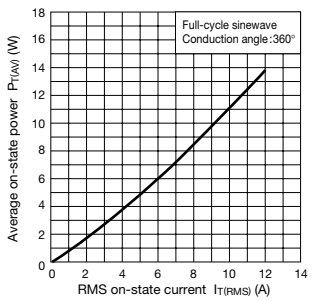
$I_{TSM}$  Ratings



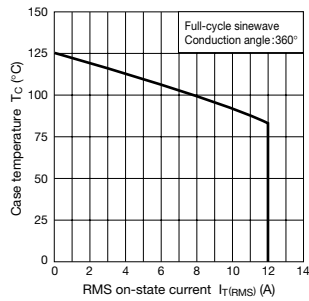
Gate Characteristics



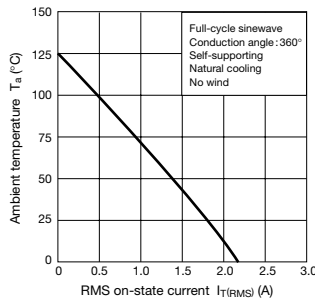
$I_T(RMS) - P_T(AV)$  Characteristics



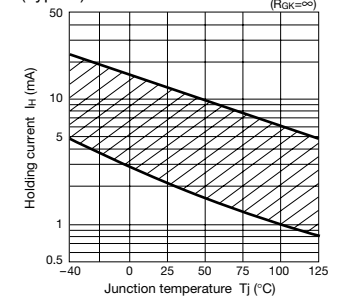
$I_T(RMS) - T_C$  Ratings



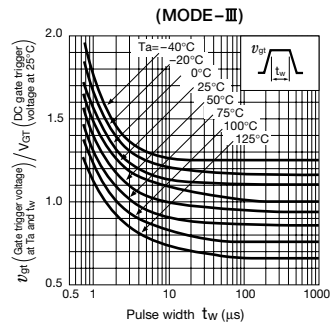
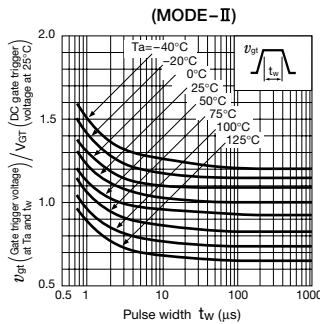
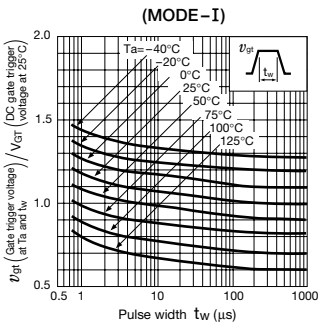
$I_T(RMS) - T_a$  Ratings



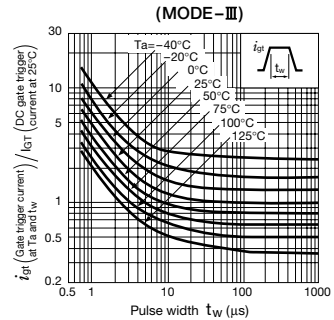
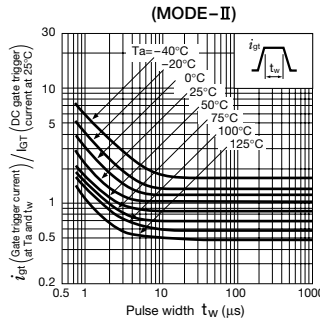
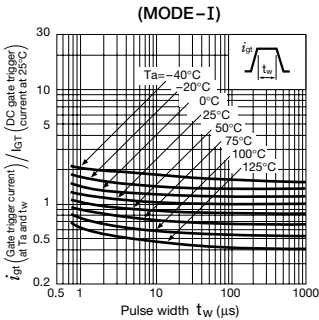
$I_H$  temperature Characteristics (Typical)



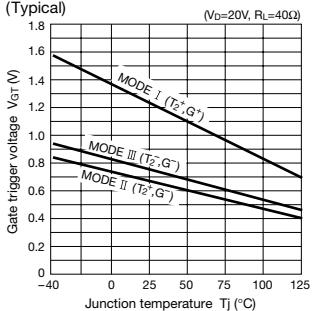
Pulse trigger temperature Characteristics  $V_{gt}$  (Typical)



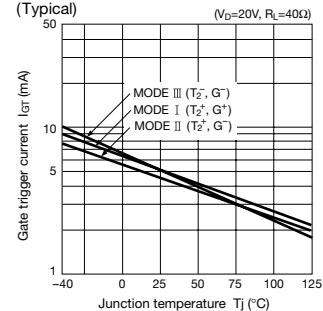
Pulse trigger temperature Characteristics  $i_{gt}$  (Typical)



$V_{GT}$  temperature characteristics (Typical)



$I_{GT}$  temperature characteristics (Typical)



Transient thermal resistance Characteristics

