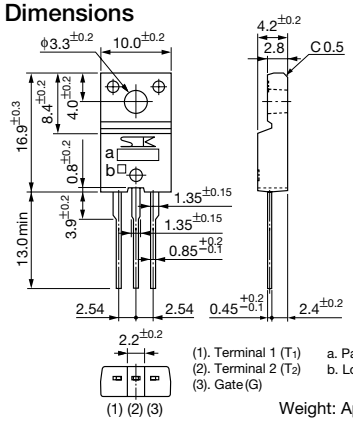
TO-220F 12A Triac

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

External Dimensions
(Unit: mm)



Weight: Approx. 2.1g

■Absolute Maximum Ratings

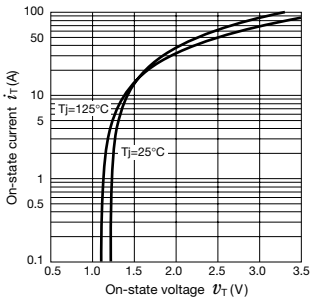
Parameter	Symbol	Ratings		Unit	Conditions
		TM1241S-R	TM1261S-R		
Repetitive peak off-state voltage	V_{DRM}	400	600	V	
RMS on-state current	$I_{T(RMS)}$	12		A	Conduction angle 360°, Tc=84°C
Surge on-state current	I_{TSM}	110		A	50Hz full-cycle sinewave, Peak value, Non-repetitive, Tj=125°C
Peak gate 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	Tj	−40 to +125		°C	
Storage temperature	Tstg	−40 to +125		°C	
Isolation voltage	V_{ISO}	1500		Vrms	50Hz Sine wave, RMS, Terminal to Case, 1 min.

■Electrical Characteristics

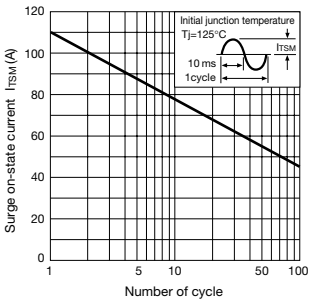
(Tj=25°C, unless otherwise specified)

Parameter		Symbol	Ratings			Unit	Conditions	
			min	typ	max			
Off-state current		I_{DRM}			2.0	mA	V_D=V_{DRM}, R_{GK}=∞, Tj=125°C	
					0.1		V_D=V_{DRM}, R_{GK}=∞, Tj=25°C	
On-state voltage		V_{TM}			1.6	V	Pulse test, I_{TM}=16A	
Gate trigger voltage	Ⅰ	V_{GT}		1.1	1.8	V	V_D=6V, R_L=10Ω, T_C=25°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	I_{GT}		5	8	mA	V_D=6V, R_L=10Ω, T_C=25°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×V_{DRM}, Tj=125°C	
Holding current		I_H		6		mA	V_D=6V	
Thermal resistance		Rth			3.0	°C/W	Junction to case	

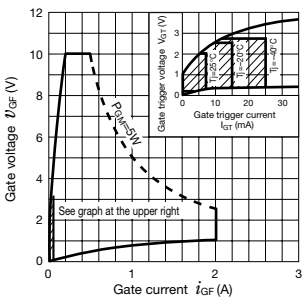
$v_T - i_T$ Characteristics (max)



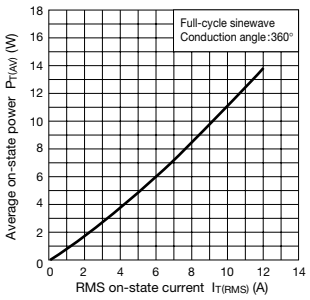
I_{TSM} Ratings



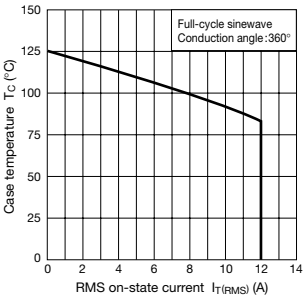
Gate Characteristics



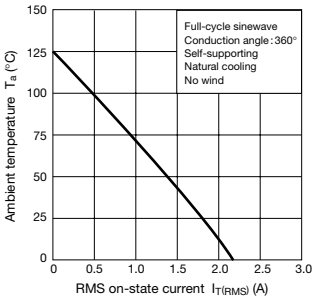
$I_{T(RMS)} - P_{T(AV)}$ Characteristics



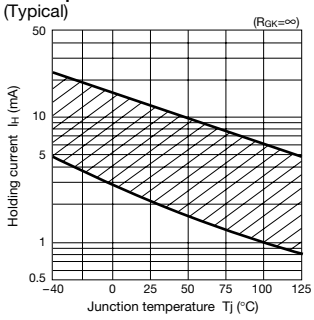
$I_{T(RMS)} - T_C$ Ratings



$I_{T(RMS)} - T_a$ Ratings

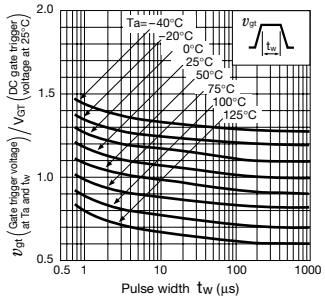


I_H temperature Characteristics (Typical)

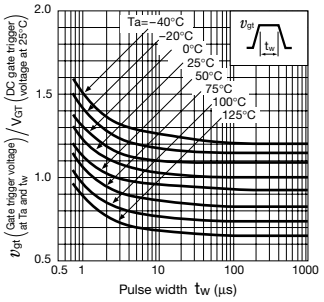


Pulse trigger temperature Characteristics v_{gt} (Typical)

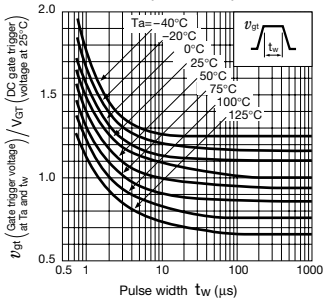
(MODE−Ⅰ)



(MODE−Ⅱ)

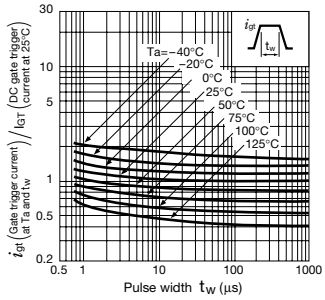


(MODE−Ⅲ)

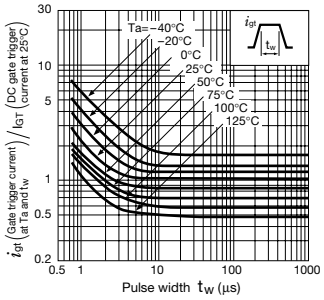


Pulse trigger temperature Characteristics i_{gt} (Typical)

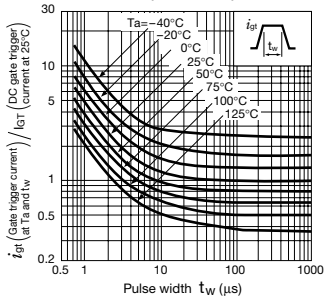
(MODE−Ⅰ)



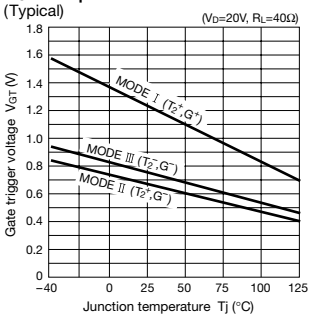
(MODE−Ⅱ)



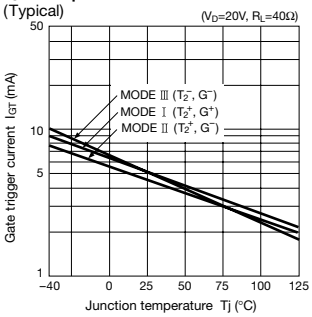
(MODE−Ⅲ)



V_{GT} temperature characteristics (Typical)



I_{GT} temperature characteristics (Typical)



Transient thermal resistance Characteristics