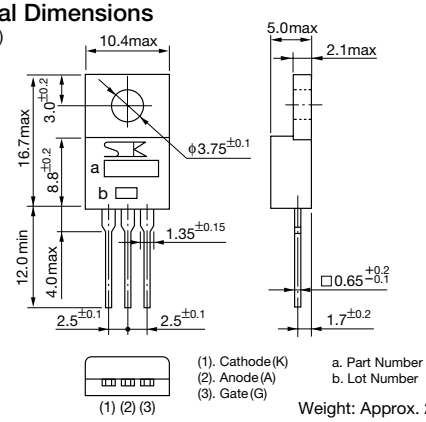
TO-220 3A High sensitive Thyristor

TF321M-A, TF341M-A, TF361M-A

■Features

- ●Repetitive peak off-state voltage: V_{DRM}=200, 400, 600V
- ●Average on-state current: $I_{T(AV)}$=3A
- ●High sensitive Gate trigger Current: I_{GT}=0.1mA max

External Dimensions
(Unit: mm)



Weight: Approx. 2.6g

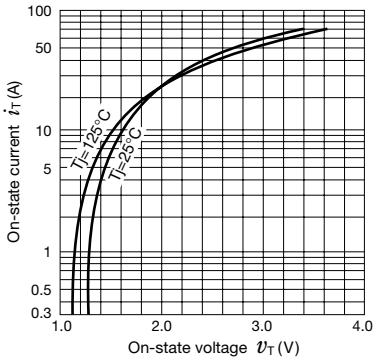
■Absolute Maximum Ratings

Parameter	Symbol	Ratings			Unit	Conditions
		TF321M-A	TF341M-A	TF361M-A		
Repetitive peak off-state voltage	V_{DRM}	200	400	600	V	Tj=−40 to +125°C, R_{GK}=1kΩ
Repetitive peak reverse voltage	V_{RRM}	200	400	600	V	
Non-repetitive peak off-state voltage	V_{DSM}	300	500	700	V	
Non-repetitive peak reverse voltage	V_{RSM}	300	500	700	V	
Average on-state current	$I_{T(AV)}$	3.0			A	50Hz Half-cycle sinewave, Continuous current, Tc=87°C
RMS on-state current	$I_{T(RMS)}$	4.7			A	
Surge on-state current	I_{TSM}	60			A	50Hz Half-cycle sinewave, Single shot, Non-repetitive, Tj=125°C
Peak forward gate current	I_{FGM}	2.0			A	f≧50Hz, duty≦10%
Peak forward gate voltage	V_{FGM}	10			V	
Peak reverse gate voltage	V_{RGM}	5.0			V	f≧50Hz
Peak gate power loss	P_{GM}	5.0			W	f≧50Hz, duty≦10%
Average gate power loss	$P_{G(AV)}$	0.5			W	
Junction temperature	Tj	−40 to +110			°C	
Storage temperature	Tstg	−40 to +125			°C	

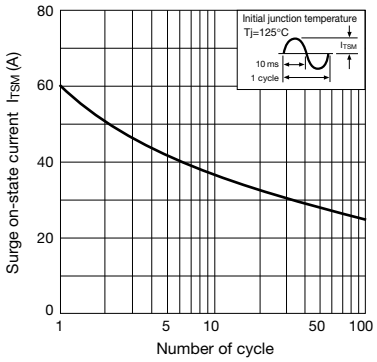
■Electrical Characteristics

Parameter	Symbol	Ratings			Unit	Conditions
		min	typ	max		
Off-state current	I_{DRM}			1.0	mA	Tj=125°C, V_D=V_{DRM}(V_{RRM}), R_{GK}=1kΩ
Reverse current	I_{RRM}			1.0	mA	
On-state voltage	V_{TM}			1.4	V	T_C=25°C, I_{TM}=5A
Gate trigger voltage	V_{GT}			1	V	V_D=6V, R_L=10Ω, T_C=25°C
Gate trigger current	I_{GT}			0.1	mA	
Gate non-trigger voltage	V_{GD}	0.1			V	V_D=1/2×V_{DRM}, Tj=125°C, R_{GK}=1kΩ
Holding current	I_H		1.0		mA	R_{GK}=1kΩ, Tj=25°C
Critical rate-of-rise of off-state voltage	dv/dt		20		V/μS	V_D=1/2×V_{DRM}, Tj=125°C, R_{GK}=1kΩ, C_{GK}=0.033μF
Turn-off time	tq		30		μS	Tc=25°C
Thermal resistance	Rth			3.0	°C/W	Junction to case

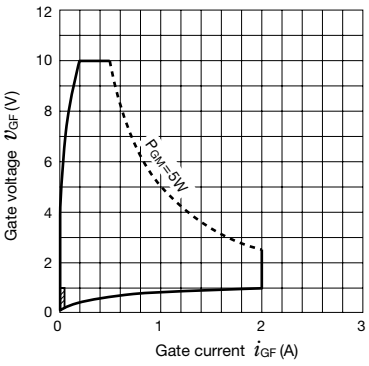
$v_T - i_T$ Characteristics (max)



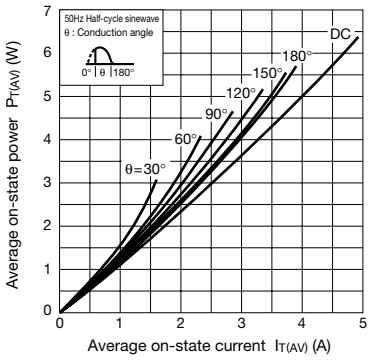
I_{TSM} Ratings



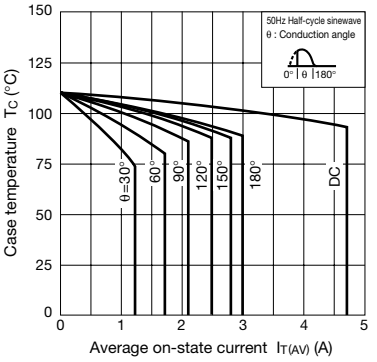
Gate Characteristics



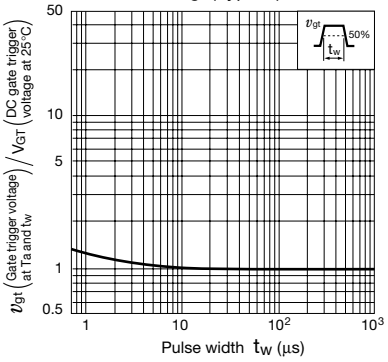
$I_{T(AV)} - P_{T(AV)}$ Characteristics



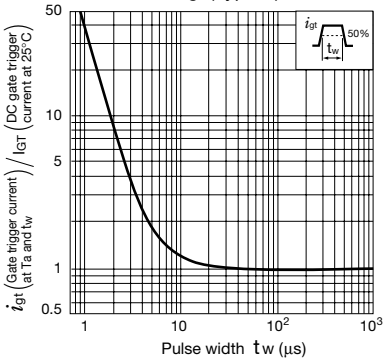
$I_{T(AV)} - T_C$ Ratings



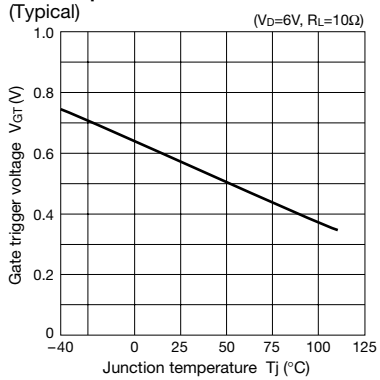
Pulse trigger temperature Characteristics v_{gt} (Typical)



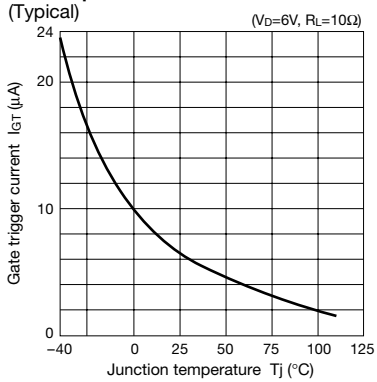
Pulse trigger temperature Characteristics i_{gt} (Typical)



V_{GT} temperature Characteristics (Typical)



I_{GT} temperature Characteristics (Typical)



Transient thermal resistance Characteristics (Junction to case)