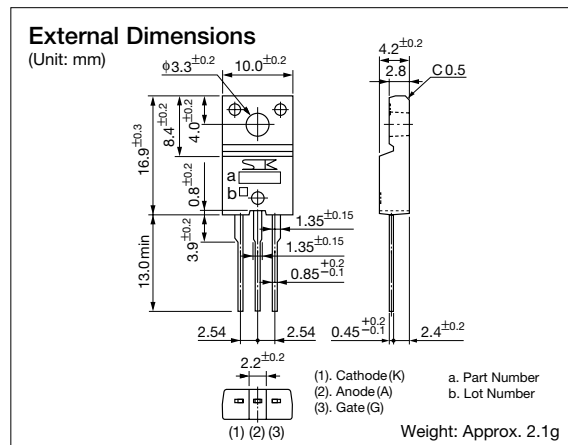


TO-220F 5A High sensitive Thyristor

TF541S-A, TF561S-A

■ Features

- Repetitive peak off-state voltage: $V_{DRM}=400, 600V$
- Average on-state current: $I_{T(AV)}=5A$
- High sensitive Gate trigger current: $I_{GT}=0.2mA$ max
- Isolation voltage: $V_{ISO}=1500V$ (50Hz Sine wave, RMS)



■ Absolute Maximum Ratings

Parameter	Symbol	Ratings		Unit	Conditions
		TF541S-A	TF561S-A		
Repetitive peak off-state voltage	V_{DRM}	400	600	V	$T_j = -40$ to $+125^{\circ}C$, $R_{GK}=470\Omega$
Repetitive peak reverse voltage	V_{RRM}	400	600	V	
Non-repetitive peak off-state voltage	V_{DSM}	500	700	V	
Non-repetitive peak reverse voltage	V_{RSM}	500	700	V	
Average on-state current	$I_{T(AV)}$	5.0		A	50Hz Half-cycle sinewave, Continuous current, $T_c=88^{\circ}C$
RMS on-state current	$I_{T(RMS)}$	7.8		A	
Surge on-state current	I_{TSM}	80		A	50Hz Half-cycle sinewave, Single shot, Non-repetitive, $T_j=125^{\circ}C$
Peak forward gate current	I_{FGM}	2.0		A	$f \geq 50Hz$, duty $\leq 10\%$
Peak forward gate voltage	V_{FGM}	10		V	
Peak reverse gate voltage	V_{RGM}	5.0		V	$f \geq 50Hz$
Peak gate power loss	P_{GM}	5.0		W	$f \geq 50Hz$, duty $\leq 10\%$
Average gate power loss	$P_{G(AV)}$	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	50Hz Sine wave, RMS, Terminal to Case, 1 min.

■ Electrical Characteristics

Parameter	Symbol	Ratings			Unit	Conditions
		min	typ	max		
Off-state current	I_{DRM}			2.0	mA	$T_j=125^{\circ}C$, $V_D=V_{DRM}(V_{RRM})$, $R_{GK}=1k\Omega$
Reverse current	I_{RRM}			2.0	mA	
On-state voltage	V_{TM}			1.4	V	$T_c=25^{\circ}C$, $I_{TM}=10A$
Gate trigger voltage	V_{GT}			1.5	V	$V_D=6V$, $R_L=10\Omega$, $T_c=25^{\circ}C$
Gate trigger current	I_{GT}		0.03	0.2	mA	
Gate non-trigger voltage	V_{GD}	0.1			V	$V_D=1/2 \times V_{DRM}$, $T_j=125^{\circ}C$, $R_{GK}=1k\Omega$
Holding current	I_H		4.0		mA	$R_{GK}=1k\Omega$, $T_j=25^{\circ}C$
Critical rate-of-rise of off-state voltage	dv/dt		20		V/ μS	$V_D=1/2 \times V_{DRM}$, $T_j=125^{\circ}C$, $R_{GK}=1k\Omega$, $C_{GK}=0.033\mu F$
Turn-off time	t_q		30		μS	$T_c=25^{\circ}C$
Thermal resistance	R_{th}			4.0	$^{\circ}C/W$	Junction to case