

Pb Free Plating Product

## 2P4M



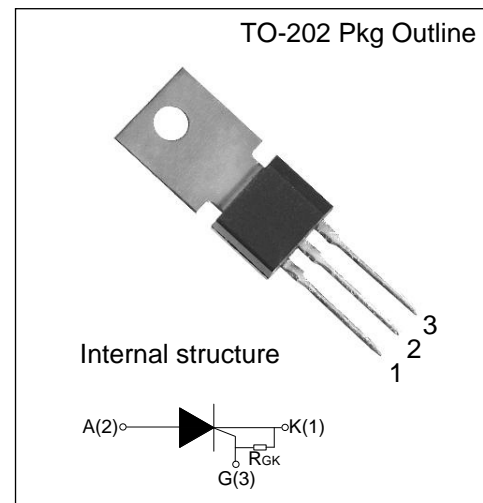
2.0 Ampere Passivated Process Thyristor---Sensitive Gate SCR

**DESCRIPTION:**

ThinkiSemi 2P4M SCR with the parallel resistor between Gate and Cathode are especially recommended for use on straight hair, igniter, anion generator etc..

**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	2	A
$I_{GT}$	$\leq 200$	$\mu A$
$V_{TM}$	$\leq 1.5$	V

**ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	$^{\circ}C$
Operating junction temperature range	$T_j$	-40-110	$^{\circ}C$
Repetitive peak off-state voltage	$V_{DRM}$	600	V
Repetitive peak reverse voltage	$V_{RRM}$	600	V
RMS on-state current	$I_{T(RMS)}$	2	A
@ ( $T_C=72^{\circ}C$ )			
Non repetitive surge peak on-state current (tp=10ms)	$I_{TSM}$	20	A
$I^2t$ value for fusing (tp=10ms)	$I^2t$	2	$A^2s$
Critical rate of rise of on-state current	di/dt	50	$A/\mu s$
Peak gate current (tp=20 $\mu s$ , $T_j=110^{\circ}C$ )	$I_{GM}$	0.2	A
Peak gate power (tp=20 $\mu s$ , $T_j=110^{\circ}C$ )	$P_{GM}$	0.5	W
Average gate power dissipation( $T_j=110^{\circ}C$ )	$P_{G(AV)}$	0.1	W

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^\circ\text{C}$  unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	-	40	200	$\mu\text{A}$
$V_{GT}$		-	0.5	0.8	V
$V_{GD}$	$V_D=V_{DRM} T_j=110^\circ\text{C}$	0.2	-	-	V
$I_L$	$I_G=1.2 I_{GT}$	-	-	3	mA
$I_H$	$I_T=0.05\text{A}$	-	-	2	mA
dV/dt	$V_D=60\%V_{DRM} T_j=110^\circ\text{C} R_{GK}=1\text{K}\Omega$	10	-	-	V/ $\mu\text{s}$

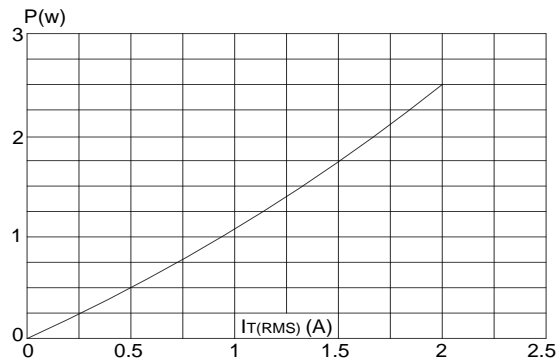
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=4\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.5	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=110^\circ\text{C}$	100	$\mu\text{A}$

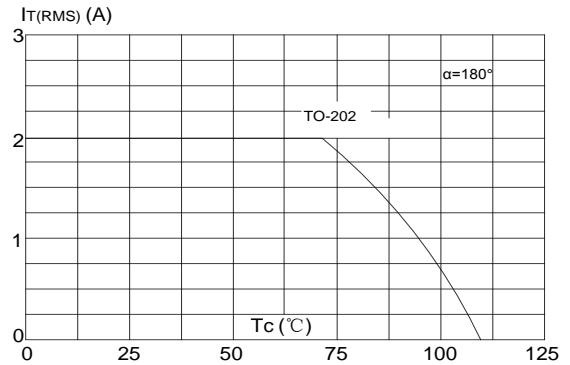
**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-202 Heat sink	10	$^\circ\text{C/W}$

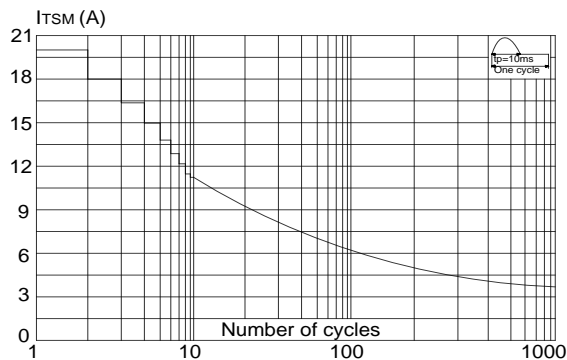
**FIG.1** Maximum power dissipation versus RMS on-state current



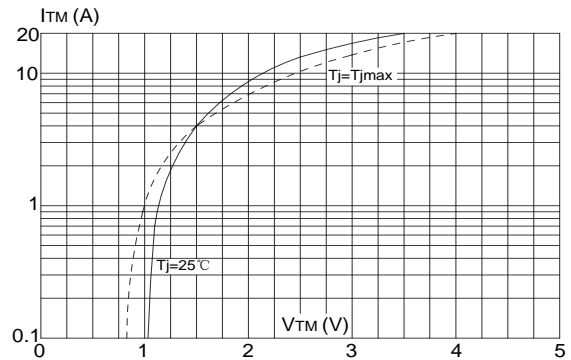
**FIG.2** RMS on-state current versus case temperature



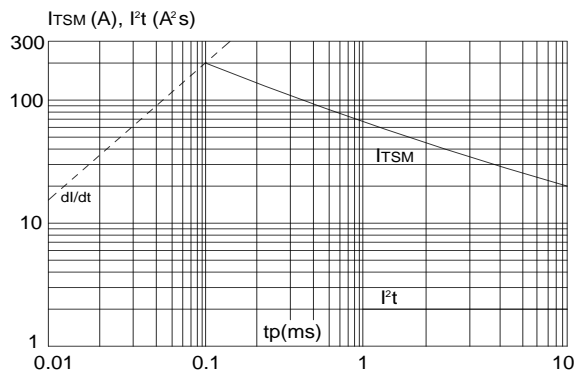
**FIG.3** Surge peak on-state current versus number of cycles



**FIG.4** On-state characteristics (maximum values)



**FIG.5** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



**FIG.6** Relative variations of gate trigger current, holding current and latching current versus junction temperature

