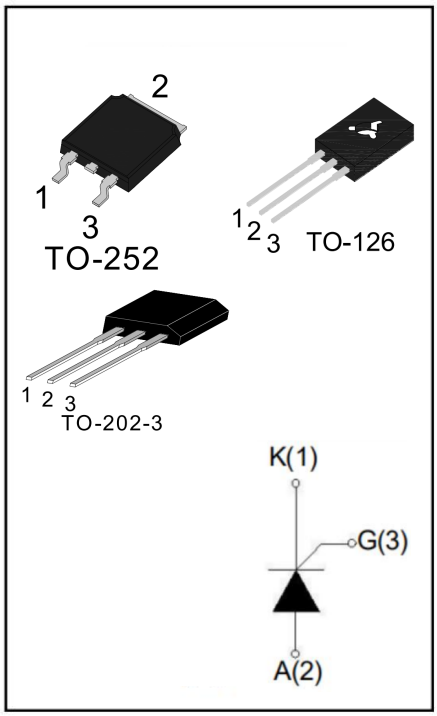
S04P2 Series **4A SCR** Rev. 1.0

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	200	μA



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	℃
Operating junction temperature range		T_j	-40-125	℃
Repetitive peak off-state voltage		V_{DRM}	600	V
Repetitive peak reverse voltage		V_{RRM}	600	V
RMS on-state current	TO-126 Tc = 75°C TO-252 Tc = 75°C	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (tp=10ms)		I_{TSM}	30	A
I^2t value for fusing (tp=10ms)		I^2t	4.5	A^2s
Critical rate of rise of on-state current		dI/dt	50	A/μs
Peak gate current (tp=20μs, Tj=125℃)		I_{GM}	1	A
Peak gate power (tp=20μs, Tj=125℃)		P_{GM}	0.5	W
Average gate power dissipation(T_j=125℃)		$P_{G(AV)}$	0.2	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value	Unit
		MAX.	
I_{GT}	V =12V R =33Ω	150	μA
V_{GT}		0.8	V
V_{GD}	V_D=V_{DRM} Tj=125℃	-	V
I_L	I_G=1.2I_{GT}	6	mA
I_H	I_T=0.05A	5	mA
dV/dt	V_D=2/3V_{DRM} Tj=125℃ RGK=1KΩ	-	V/μs

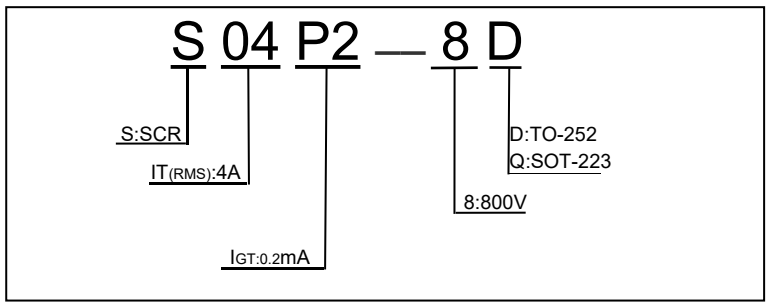
STATIC CHARACTERISTICS

Symbol	Parameter		Value	Unit
V_{TM}	I_{TM}=4A tp=380μs	T_j =25℃	1.5	V
I_{DRM}	V_D = V_{DRM} , V_R =V_{RRM}	T_j =25℃	10	μA
I_{RRM}		T_j =125℃	800	μA

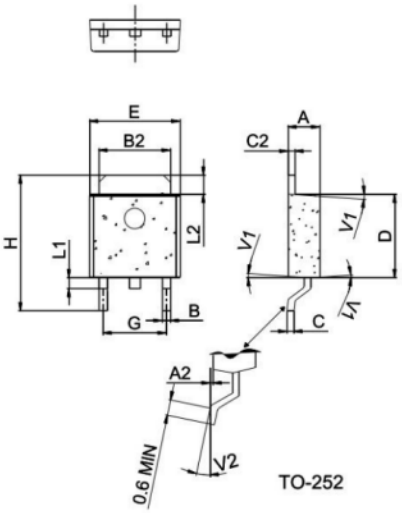
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-252 TO-126	2.6	℃/W
		TO-202-3	15	

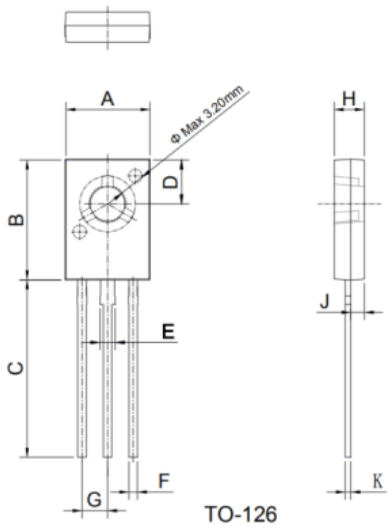
ORDERING INFORMATION



PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.71		0.99	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.60	0.368		0.417
L1	1.30		1.70	0.051		0.067
L2	1.37		1.50	0.054		0.059
V1		4°				
V2	0°		8°	0°		8°



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.43		8.23	0.292		0.324
B	10.07		11.27	0.396		0.443
C	15.4		17.4	0.606		0.685
D	0.80		4.20	0.149		0.165
E	1.17		1.47	0.046		0.058
F	0.48		0.88	0.018		0.034
G		2.29			0.090	
H	2.50		2.90	0.098		0.114
J	1.10		1.50	0.043		0.059
K	0.45		0.60	0.018		0.024

PACKAGE MECHANICAL DATA

FIG.1:Maximum power dissipation versus RMS on-state current(full cycle)

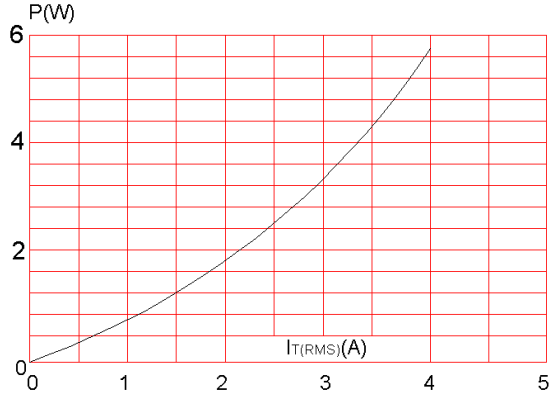


FIG.2:RMS on-state current versus mounting base temperature(full cycle)

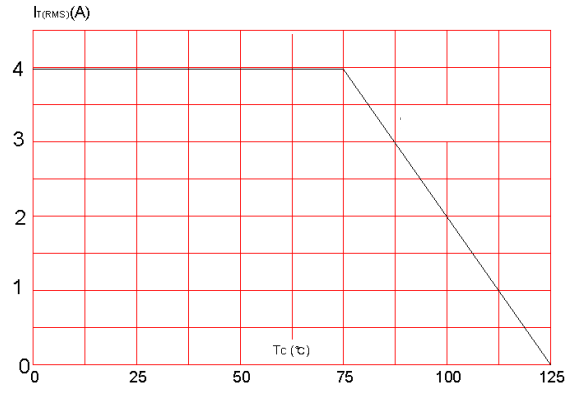


FIG.3:Surge peak on-state current versus number of cycles.

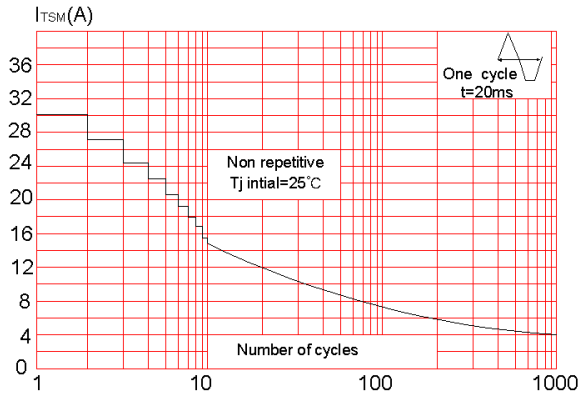


FIG.4:On-state characteristics (maximum values).

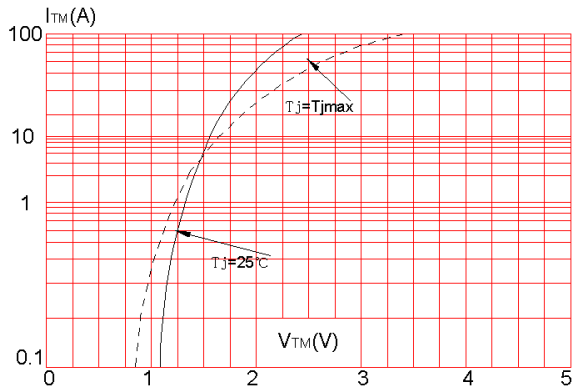


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

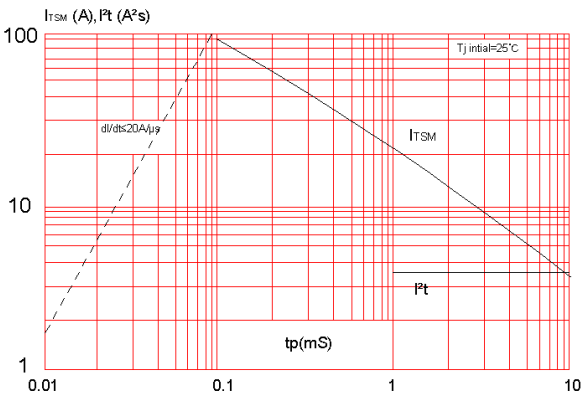


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)