

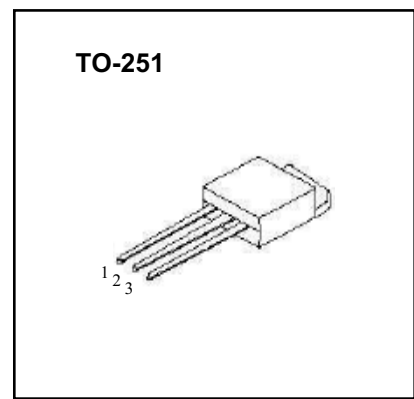
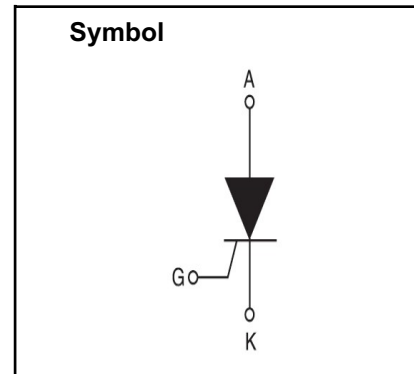
## 5A SCRs

### FEATURES

- ◆ Repetitive Peak Off-State Voltage : 600V
- ◆ R.M.S On-State Current (  $I_{T(RMS)} = 5A$  )
- ◆ Sensitive Gate Triggering (  $I_{GT} \leq 200\mu A$  )

### DESCRIPTION

Highly sensitive triggering levels, the BP5P4J Series SCRs is suitable for all applications, where the available gate current is limited, such as capacitive discharge ignitions, motor control in kitchen aids, overvoltage crowbar protection in low power supplies...



### ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	- 40 to +150	°C
Operating junction temperature range		Tj	- 40 to +110	°C
Repetitive Peak Off-state Voltage	Tj=25°C	VDRM	600	V
Repetitive Peak Reverse Voltage	Tj=25°C	VRRM	600	V
RMS on-state current (180° conduction angle)	Tc=30°C	IT(RMS)	5	A
Average on-state current (180° conduction angle)	Tc=30°C	IT(AV)	2.5	A
Non repetitive surge peak on-state current (Tj=25°C)	tp=10ms	ITSM	30	A
	tp=8.3ms		33	A
I²t Value for fusing	tp=10ms	I²t	4.5	A²s
Peak gate current	tp=20us, Tj=110°C	IGM	1.2	A
Average gate power dissipation	Tj=110°C	PG(AV)	0.2	W

ELECTRICAL CHARACTERISTICS(T<sub>j</sub>=25 °C unless otherwise specified)

Symbol	Test Condition		BP5P4J			Unit
			Min.	Typ.	Max.	
I <sub>GT</sub>	V <sub>D</sub> =6V R <sub>L</sub> =100Ω		-	40	200	μA
V <sub>GT</sub>			-	0.6	0.8	V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>D</sub> RM R <sub>L</sub> =3.3KΩ R <sub>GK</sub> =1KΩ T <sub>j</sub> =110°C		0.2	-	-	V
I <sub>L</sub>	I <sub>G</sub> =1mA R <sub>GK</sub> =1KΩ		-	-	6	mA
I <sub>H</sub>	I <sub>T</sub> =50mA R <sub>GK</sub> =1KΩ		-	-	1	mA
V <sub>TM</sub>	I <sub>T</sub> = 8A t <sub>p</sub> =380uS	T <sub>j</sub> =25 °C	-	1.4	1.8	V
dV/dt	V <sub>D</sub> =67%V <sub>D</sub> RM R <sub>GK</sub> =1KΩ	T <sub>j</sub> =110 °C	10	-	-	V/μs
I <sub>DRM</sub>	V <sub>D</sub> = V <sub>D</sub> RM R <sub>GK</sub> =1KΩ	T <sub>j</sub> =25 °C	-	-	5	μA
		T <sub>j</sub> =110 °C	-	-	0.1	mA
I <sub>RRM</sub>	V <sub>R</sub> = V <sub>R</sub> RM R <sub>GK</sub> =1KΩ	T <sub>j</sub> =25 °C	-	-	5	μA
		T <sub>j</sub> =110 °C	-	-	0.1	mA

## THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R <sub>th</sub> ( J -C)	Junction to Case	TO-251	10	°C/W

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

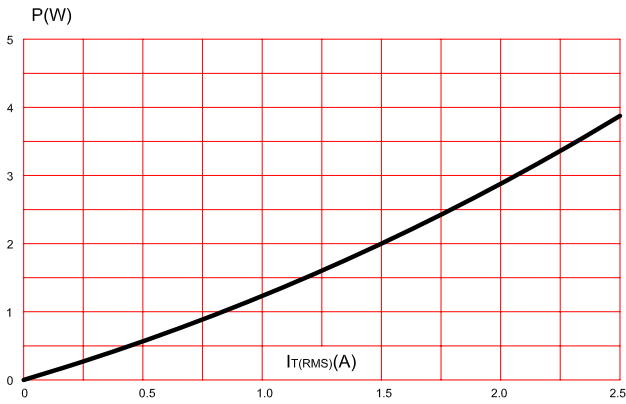


FIG.2: Average on-state current versus case temperature(full cycle)

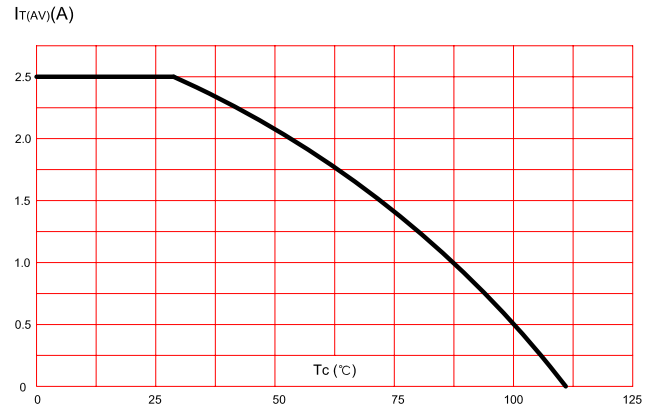


FIG.3: On-state characteristics (maximum values)

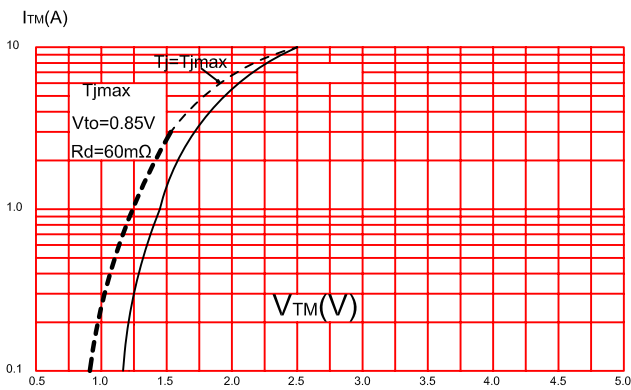


FIG.4: Surge peak on-state current versus number of cycles.

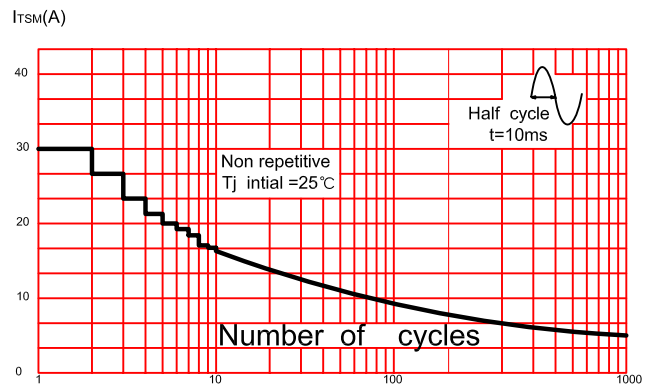


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ .

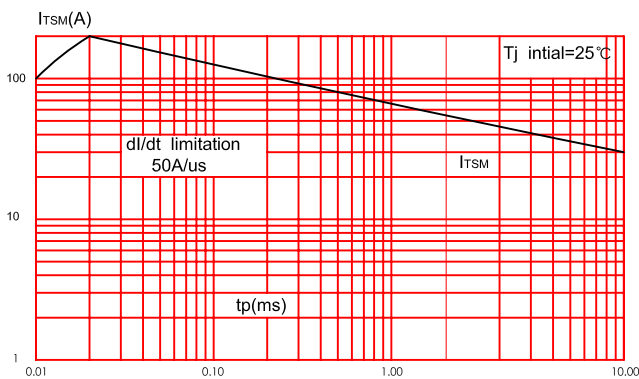
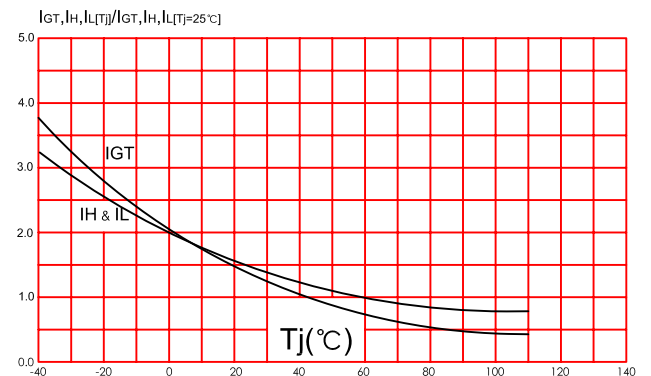
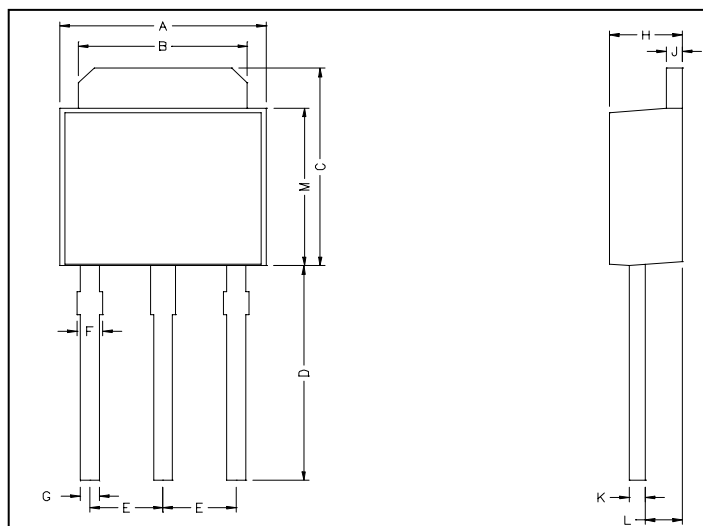


FIG.6: Relative variation of gate trigger current, holding current and latching current versus junction temperature(typical values).



## TO-251 Package Dimension



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.40	6.80	G	0.50	0.70
B	5.20	5.50	H	2.20	2.40
C	6.80	7.20	J	0.45	0.55
D	7.20	7.80	K	0.45	0.60
E	2.30 REF.		L	0.90	1.50
F	0.60	0.90	M	5.40	5.80