

## SB5560S 55A SCRs

### FEATURES

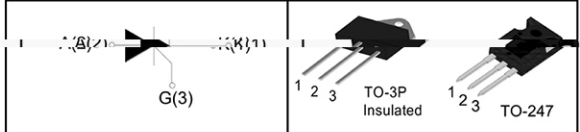
- High thermal cycling performance
- High voltage capacity
- Very high current surge capability

### APPLICATIONS

- Line rectifying 50/60 Hz
- Softstart AC motor control
- DC Motor control
- Power converter
- AC power control
- Lighting and temperature control

### Parameters Summary

VD/VR:1200/1600V IT(RMS):55A IGT :60mA



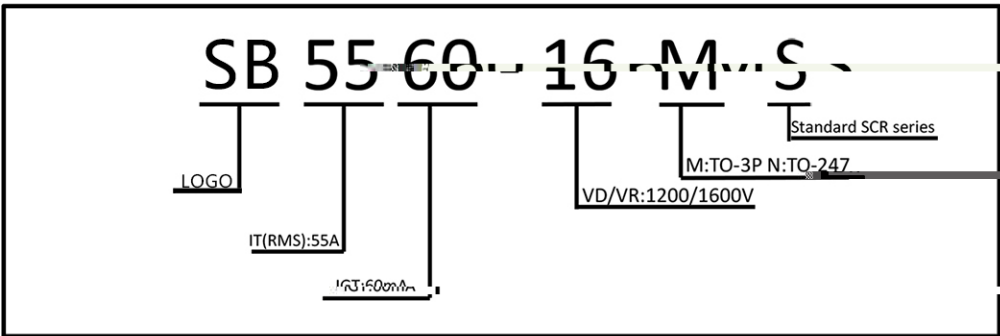
ABSOLUTE MAXIMUM RATINGS			
Parameter	Symbol	value	Unit
Storage junction temperature range	Tstg	-40 ~ 150	°C
Operating junction temperature range	Tj	-40 ~ 125	°C
Repetitive peak off-state voltage (T=25°C)	V <sub>DRM</sub>	1200/1600	V
Repetitive peak reverse voltage (T=25°C)	V <sub>RRM</sub>	1200/1600	V
Non repetitive surge peak Off-state voltage	V <sub>DSM</sub>	V <sub>DRM</sub> +100	V
Non repetitive peak reverse voltage	V <sub>RRSM</sub>	V <sub>RRM</sub> +100	V
RMS on-state current	TO-3PIns.(TC=80°C)	55	A
	TO-247(TC=85°C)		
Non repetitive surge peak on-state current	I <sub>TSM</sub>	550	A
Average on-state current (180° conduction angle)	I <sub>T(AV)</sub>	55	A
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	1500	A <sup>2</sup> S
Critical rate of rise of on-state current (I=2×IGT, tr ≤ 100 ns)	di/dt	150	A/μS
Peak gate current	I <sub>GM</sub>	5	A
Average gate power dissipation	P <sub>G(AV)</sub>	2	W

Thermal Resistances			
Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case (DC)	TO-3P	0.65
		TO-247	0.60

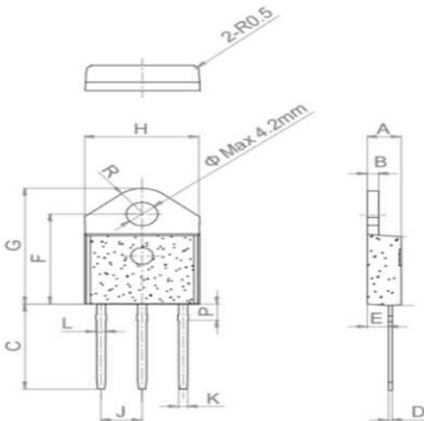
Symbol	Test Condition	MAX.	MIN.
$I_{GT}$		MAX.	
$V_{GD}$	$V_D = V_{DRM}$ $T_J = 125^\circ\text{C}$	MAX.	MIN.
$I_T$	$I_G = 1.2 I_{GT}$	MAX.	
$I_H$	$I_T = 50\text{mA}$	MAX.	
$dV/dt$	$V_D = 2/3 V_{DRM}$ Gate Open $T_J = 125^\circ\text{C}$	MAX.	MIN.

Symbol	Value (TYP.)	Unit	Temp. Range
$V_{TM}$ <td>1.0</td> <td>V</td> <td><math>-40</math> to <math>125^\circ\text{C}</math></td>	1.0	V	$-40$ to $125^\circ\text{C}$
$I_{DRM}$ <td>25</td> <td>A</td> <td><math>-40</math> to <math>125^\circ\text{C}</math></td>	25	A	$-40$ to $125^\circ\text{C}$
$I_{RRM}$ <td>10</td> <td>A</td> <td><math>-40</math> to <math>125^\circ\text{C}</math></td>	10	A	$-40$ to $125^\circ\text{C}$

### Ordering information

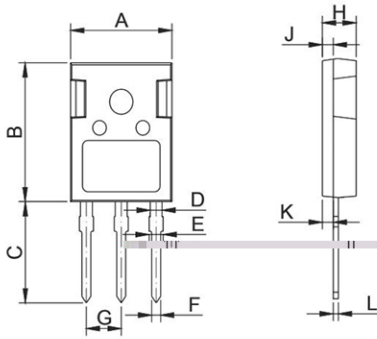


### TO-3P Package Mechanical Data



Ref.	Dimensions	Notes
A	15.92	
B	15.92	
C	15.92	
D	15.92	
E	15.92	
F	15.92	
G	15.92	
H	15.92	
I	15.92	
J	15.92	
K	15.92	
L	15.92	
P	3.08	
R	3.08	

## TO-247 Package Mechanical Data



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.00	0.610	0.622	0.634
B	20.80	21.00	21.20	0.819	0.827	0.835
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.00	0.071	0.079	0.079
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G		5.44			0.214	
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031

FIG.1 Maximum power dissipation versus on-state current

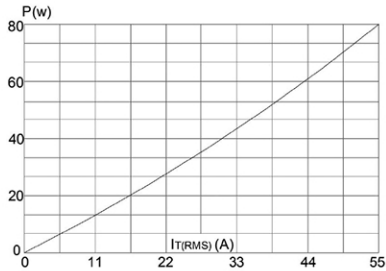


FIG.2: on-state current versus case temperature

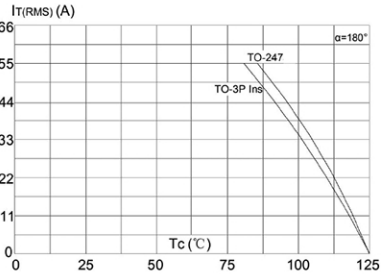


FIG.3: Surge peak on-state current versus number of cycles

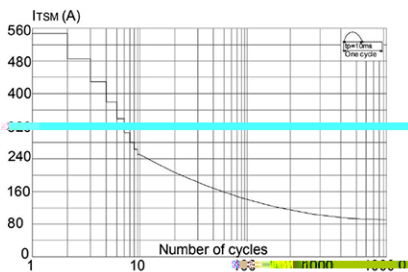


FIG.4: On-state characteristics (maximum values)

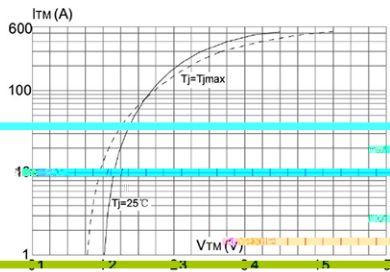


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I_2 t$

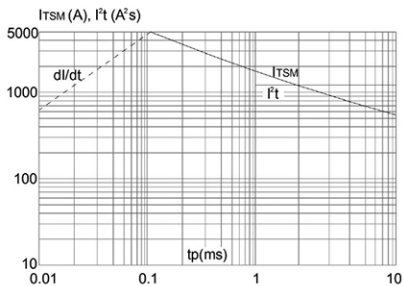


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

