SB5560S 55A SCRs

FEATURES

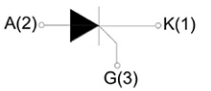
- High thermal cycling performance
- High voltage capacity
- Very high current surge capability

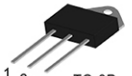
APPLICATIONS

- 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





SMD Device Halogen Free

Pb-free

RoHS COMPLIANT

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_{DRM}	1200/1600	V
Repetitive peak reverse voltage (T =25°C)		V_{RRM}	1200/1600	V
Non repetitive surge peak Off-state voltage		V_{DSM}	V_{DRM} +100	V
Non repetitive peak reverse voltage		V_{RSM}	V_{RRM} +100	V
RMS on-state current	TO-3PIns.(TC=80°C)	$I_{T(RMS)}$	55	A
	TO-247(TC=85°C)			
Non repetitive surge peak on-state current		I_{TSM}	550	A
Average on-state current (180° conduction angle)		$I_{T(AV)}$	35	A
I²t value for fusing (tp=10ms)		I²t	1500	A²S
Critical rate of rise of on-state current (I =2×IGT, tr ≤ 100 ns)		di/dt	150	A/μS
Peak gate current		I_{GM}	5	A
Average gate power dissipation		$P_{G(AV)}$	2	W

Thermal Resistances

Symbol	Parameter		Value	Unit
Rth(j-c)	Junction to case (DC)	TO-3P	0. 65	°C/W
		TO-247	0. 60	

Symbol	Test Condition		Value	Unit
I_{GT}		MAX.	60	mA
V_{GT}		MAX.	1.5	V
V_{GD}	VD=VDRM Tj=125℃	MIN.	0.2	V
I_L	I_G=1.2I_{GT}	MAX.	250	mA
I_H	IT=50mA	MAX.	200	mA
dV/dt	V_D=2/3V_{DRM} Gate Open Tj=125℃	MIN.	1000	V/μs

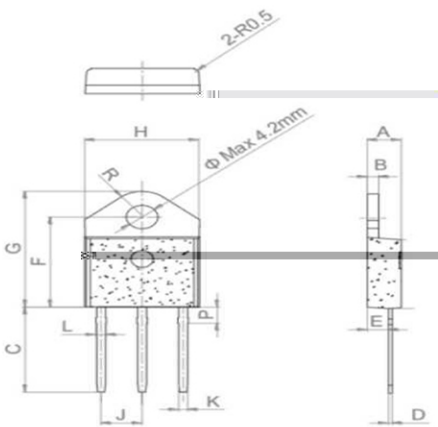
Symbol	
V_{TM}	
I_{DRM}	
I_{RRM}	

Ordering Information Scheme

SB 55 60 16 M S

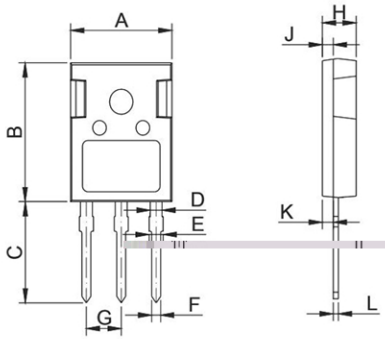
- SB: LOGO
- 55: IT(RMS):55A
- 60: IGT:60mA
- 16: VD/VR:1200/1600V
- M: M:TO-3P N:TO-247
- S: Standard SCR series

TO-3P Package Mechanical Data



Ref.	Dimensions (inches)
A	
B	
C	
D	
E	
F	
G	
H	
J	
K	
L	
P	
R	

TO-247 Package Mechanical Data



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	[illegible]	[illegible]	0.622	0.634
B	20.80	21.00	[illegible]	0.819	0.828	0.874
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	[illegible]	[illegible]	[illegible]	0.087
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

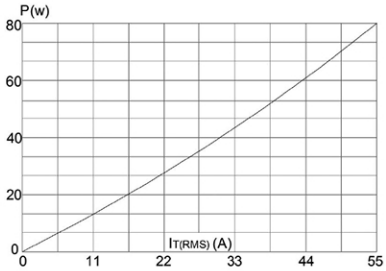


FIG.2: on-state current versus case temperature

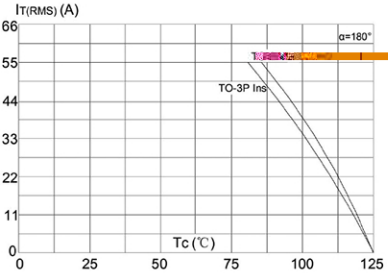


FIG.3: Surge peak on-state current versus number of cycles

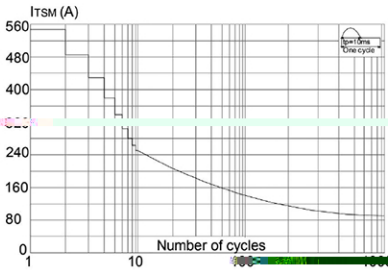


FIG.4: On-state characteristics (maximum values)

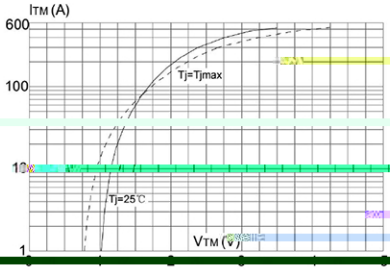


FIG.5: Non repetitive surge peak on-state currentfor a sinusoidal pulse with width tp<10ms, and corresponding value of I2 t

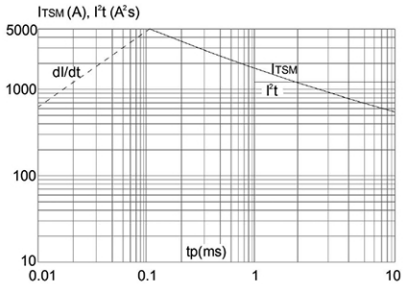


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature