

## SB7560S 75A SCRs


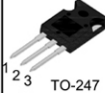
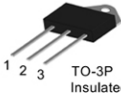
### FEATURES

- High thermal conductivity 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

	 TO-247	 TO-3P Insulated
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### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T <sub>stg</sub>	-40~150	°C
Operating junction temperature range	T <sub>case</sub>	-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>KRM</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>KSM</sub>	V <sub>KRM</sub> +100	V
RMS on-state current (T=100°C)	I <sub>T(RMS)</sub>	75	A
Non repetitive surge peak on-state current	I <sub>TSM</sub>	700	A
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	2450	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	0.60
		TO-247	0.55
			°C/W

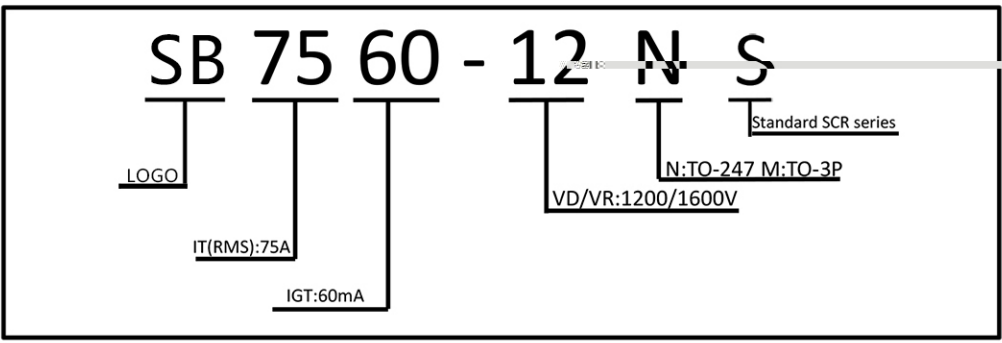
**ELECTRICAL CHARACTERISTICS (T=25°C unless otherwise specified)**

Symbol	Parameter	Value
$I_{GT}$	Gate current	20mA
$V_{GT}$	Gate-cathode voltage	1.2V
$V_{DRM}$	Reverse blocking voltage	1200V
$I_L$	Load current	140A
$dV/dt$	dv/dt	200V/μs

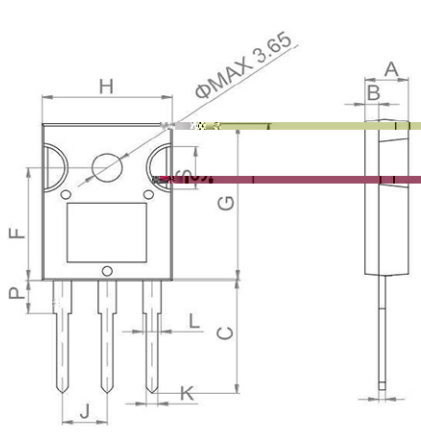
**STAT CHARACTERISTICS**

Symbol	Parameter	Value(MAX.)
$V_{TM}$	ITM = 140A tp=380μs	1.2V
$I_{DRM}$	Reverse current	20mA
$I_{RRM}$	Reverse recovery current	8A

**Ordering Information Scheme**

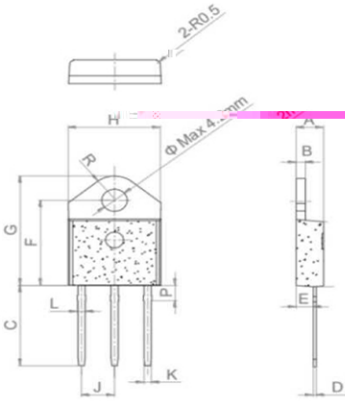


**TO-247 Package Mechanical Data**



Dimensions		Millimeters		Inches	
Min.	Max.	Min.	Max.	Min.	Max.
1.25	1.50	0.050	0.060	0.0020	0.0024
1.435	1.54	0.0565	0.0606	0.0022	0.0024
0.50	0.8	0.020	0.031	0.0008	0.0012
14.4	15.1	0.569	0.594	0.0224	0.0234
12.1	12.7	0.476	0.500	0.0187	0.0197
15.4	16.3	0.606	0.642	0.0239	0.0253
5.3	5.6	0.209	0.220	0.0082	0.0087
1.5	1.5	0.051	0.050	0.0020	0.0020
1.5	1.5	0.051	0.050	0.0020	0.0020
3.7	4.3	0.146	0.169	0.0057	0.0067
5.35	5.63	0.211	0.221	0.0083	0.0087

## TO-3P Package Mechanical Data



Ref.	Dimensions					
	Millimeters			Inches		
	Min	Typ	Max	Min	Typ	Max
A	4.40		4.60	0.173		0.181
B	1.40		1.60	0.055		0.062
C	15.48		15.88	0.609		0.625
D	0.50		0.70	0.019		0.027
E	2.70		2.90	0.106		0.114
F	15.92		16.32	0.626		0.642
G	20.27		20.67	0.798		0.813
H	15.15		15.35	0.590		0.604
J		5.45		0.214		0.216
K	1.10		1.30	0.043		0.051
L	1.15		1.35	0.045		0.053
P	2.68		3.08	0.105		0.121
R		4.20		0.165		

FIG.1 Maximum power dissipation versus on-state current

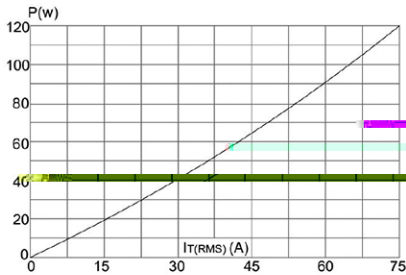


FIG.2: on-state current versus case temperature

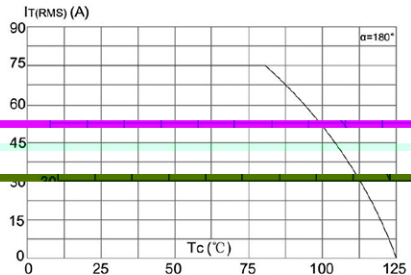


FIG.3: Surge peak on-state current versus number of cycles

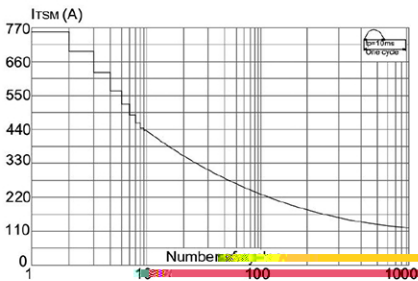


FIG.4: On state characteristics (maximum values)

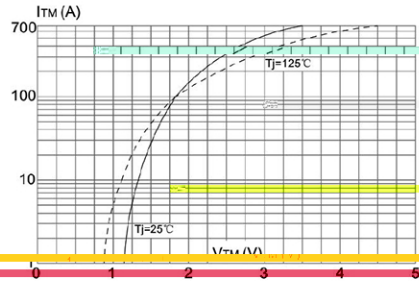


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I_2 t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )

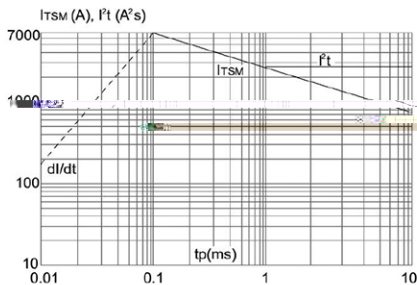


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

