

FEATURES

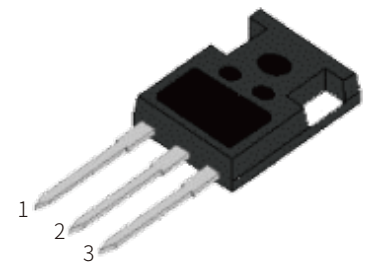
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 80A

APPLICATIONS

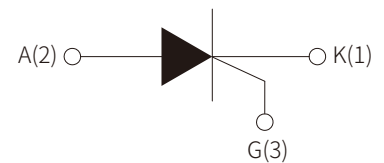
- | Motor cycle
- | Power charger
- | T-tools etc

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



TO-247



Schematic Symbol

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage ($T_j=25^{\circ}\text{C}$)	V_{DRM}	1600	V
Repetitive peak reverse voltage ($T_j=25^{\circ}\text{C}$)	V_{RRM}	1600	
Average on-state current ($T_c \leq 65^{\circ}\text{C}$)	$I_{\text{T(AV)}}$	80	A
Non repetitive surge peak on-state current ($t_p=10\text{ms}, T_j=25^{\circ}\text{C}$)	I_{TSM}	1000	
I^2t value for fusing ($t_p=10\text{ms}, T_j=25^{\circ}\text{C}$)	I^2t	5000	A^2S
Critical rate of rise of on-state current ($I_G=2 \cdot I_{\text{GT}}, f=100\text{Hz}, T_j=150^{\circ}\text{C}$)	di/dt	200	$\text{A}/\mu\text{s}$
Peak gate current ($t_p=20\mu\text{s}, T_j=150^{\circ}\text{C}$)	I_{GM}	12	A
Average gate power dissipation ($T_j=150^{\circ}\text{C}$)	$P_{\text{G(AV)}}$	1	W
Storage junction temperature range	T_{STG}	-40~+150	$^{\circ}\text{C}$
Operating junction temperature range	T_j	-40~+150	

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		Min.	Typ.	Max.	
I_{GT}	$V_D=12\text{V}, R_L=33\Omega$	10	-	80	mA
V_{GT}		-	-	1.3	V
V_{GD}	$V_D=V_{DRM}, R_L=3.3\text{K}\Omega, T_j=150^{\circ}\text{C}$	0.25	-	-	
I_H	$I_T=500\text{mA}$	-	-	250	mA
I_L	$I_G=1.2I_{GT}$	-	-	200	
dV_D/dt	$V_D=1070\text{V}$ Gate Open $T_j=150^{\circ}\text{C}$	2000	-	-	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value	Unit
V _{TM}	I _{TM} =100A,tp=380μs	T _j =25°C	≤1.65	V
I _{DRM}	V _D =V _{DRM} ，V _R =V _{RRM}		≤20	uA
I _{RRM}		T _j =150°C	≤10	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(DC)	0.38	$^{\circ}\text{C/W}$

PARAMETER CHARACTERISTIC CURVE

FIG.1 Maximum power dissipation versus RMS on-state current

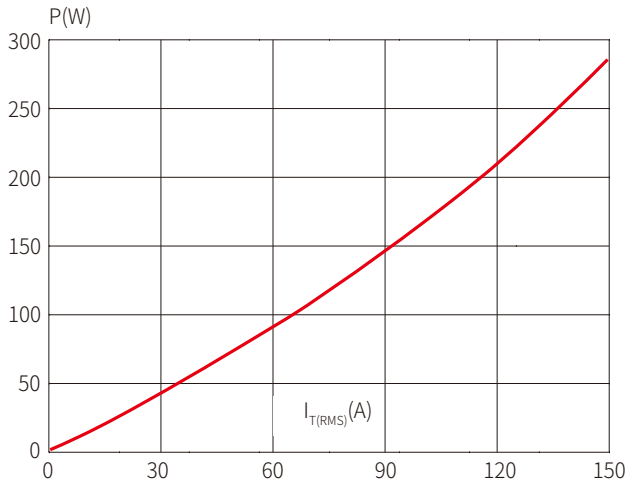


FIG.2: RMS on-state current versus case temperature

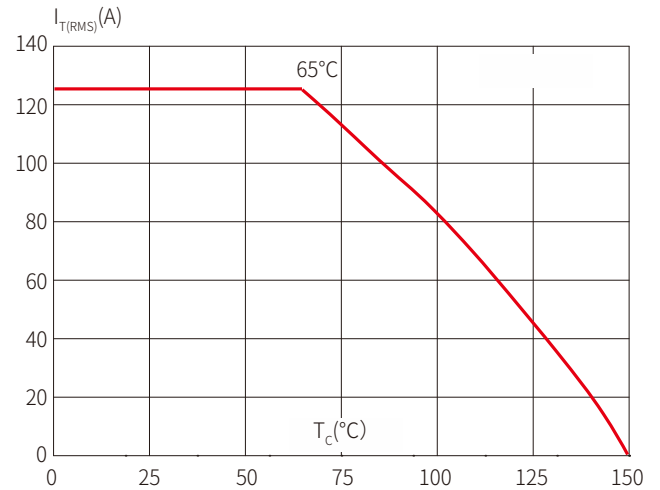


FIG.3: Surge peak on-state current versus number of cycles

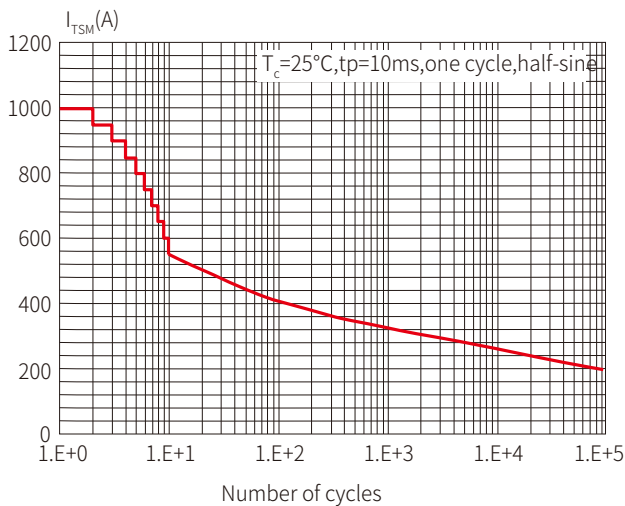


FIG.4 On-state characteristics

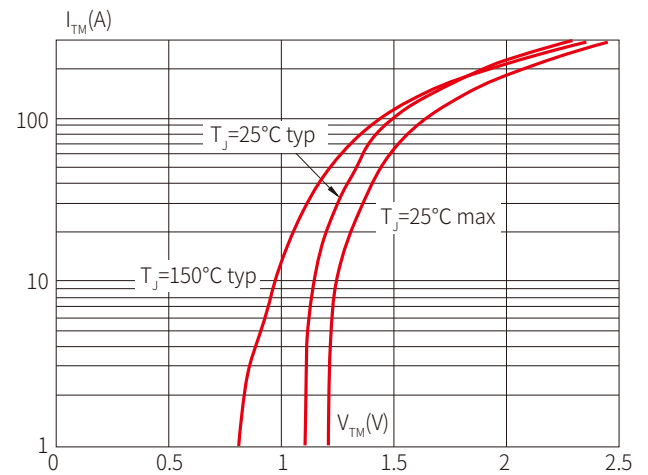


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$ and corresponding value of I^2t ($di/dt < 200\text{A}/\mu\text{s}$)

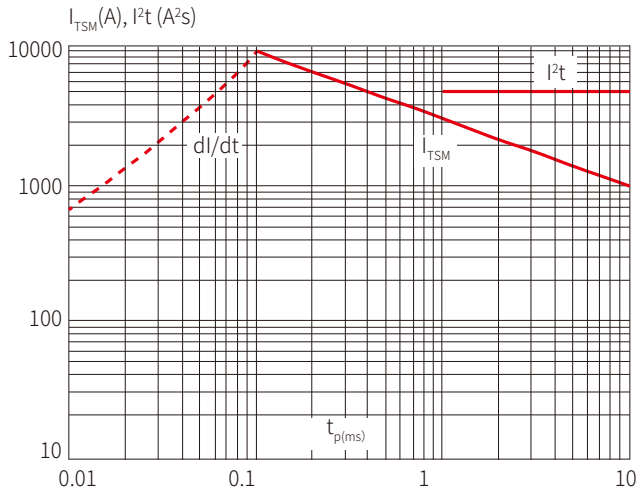
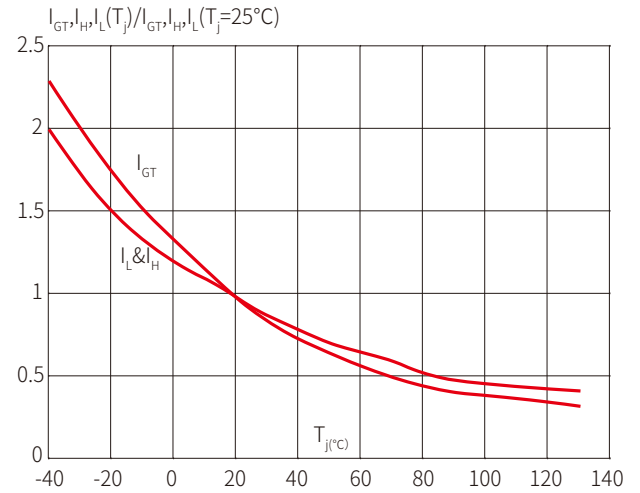
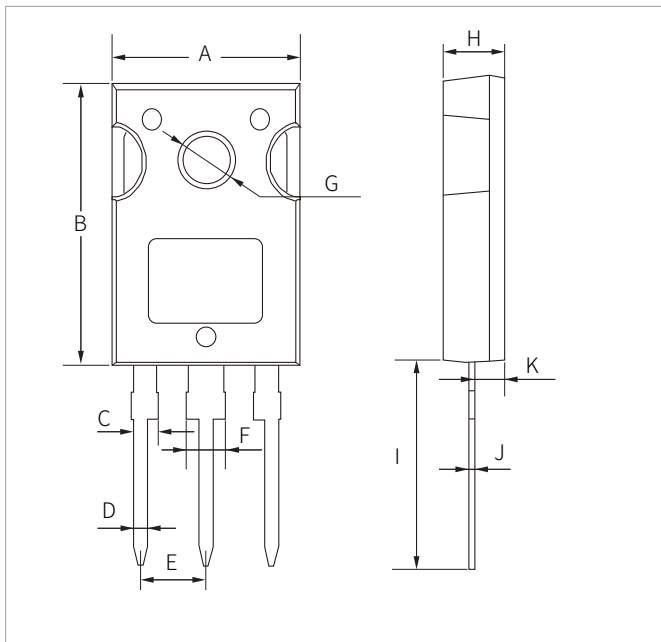


FIG.6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



TO-247 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	15.4	15.8	0.606	0.662
B	19.5	20.5	0.767	0.807
C	1.8	2.2	0.070	0.087
D	1.15	1.25	0.045	0.050
E	5.2	5.7	0.204	0.225
F	2.8	3.2	0.110	0.126
G	3.4	3.8	0.133	0.149
H	4.8	5.0	0.188	0.204
I	14.0	14.5	0.550	0.570
J	0.4	0.7	0.015	0.029
K	2.4		0.095	

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Tube	QTY/Box	QTY/Carton
SCG80C1600	TO-247	 SCG80C1600 XXXX	30PCS	450PCS	2250PCS

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware's global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.