

## FEATURES

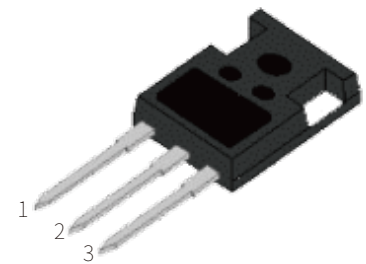
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 80A

## APPLICATIONS

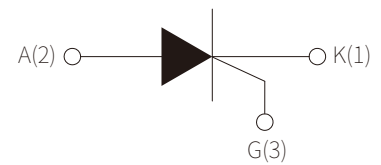
- | Motor cycle
- | Power charger
- | T-tools etc

## APPROVALS

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



TO-247



Schematic Symbol

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{\text{DRM}}$	1600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{\text{RRM}}$	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 ( $t_p=10\text{ms}, T_j=25^\circ\text{C}$ )	$I_{\text{TSM}}$	1000	
$I^2t$ value for fusing ( $t_p=10\text{ms}, T_j=25^\circ\text{C}$ )	$I^2t$	5000	$\text{A}^2\text{S}$
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 ( $t_p=20\mu\text{s}, T_j=150^\circ\text{C}$ )	$I_{\text{GM}}$	12	A
Average gate power dissipation ( $T_j=150^\circ\text{C}$ )	$P_{\text{G(AV)}}$	1	W
Storage junction temperature range	$T_{\text{STG}}$	-40~+150	°C
Operating junction temperature range	$T_j$	-40~+150	

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

Symbol	Test Condition	Value			Unit
		Min.	Typ.	Max.	
I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω	10	-	80	mA
V <sub>GT</sub>		-	-	1.3	V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> , R <sub>L</sub> =3.3KΩ, T <sub>j</sub> =150°C	0.25	-	-	
I <sub>H</sub>	I <sub>T</sub> =500mA	-	-	250	mA
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	-	-	200	
dV <sub>D</sub> /dt	V <sub>D</sub> =1070V Gate Open T <sub>j</sub> =150°C	2000	-	-	V/μs

## STATIC CHARACTERISTICS

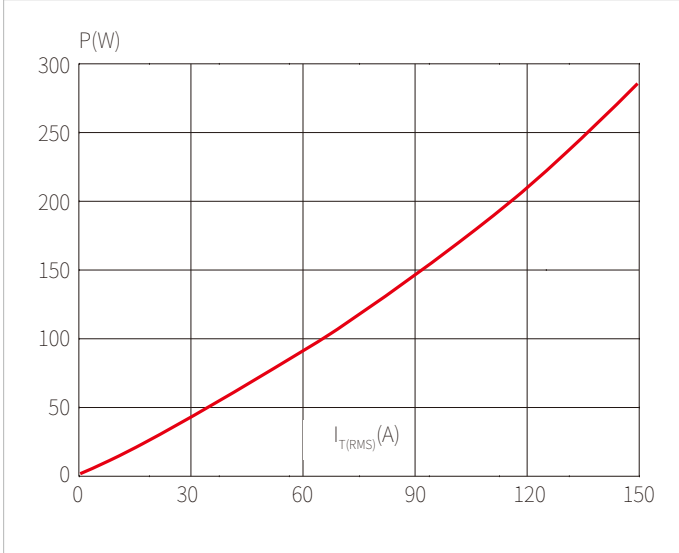
Symbol	Parameter	Value	Unit
V <sub>TM</sub>	I <sub>TM</sub> =100A, tp=380μs	≤1.65	V
I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> , V <sub>R</sub> =V <sub>RRM</sub>	≤20	μA
I <sub>RRM</sub>		≤10	mA

## THERMAL RESISTANCES

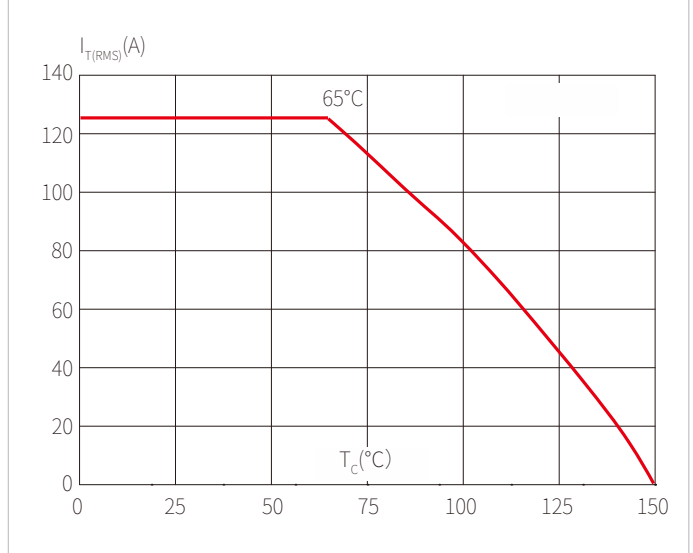
Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	Junction to case(DC)	0.38	°C/W

# PARAMETER CHARACTERISTIC CURVE

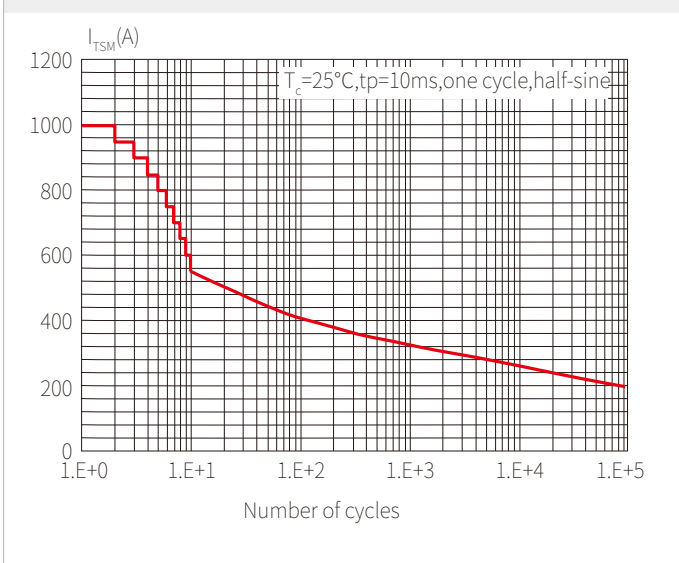
**FIG.1 Maximum power dissipation versus RMS on-state current**



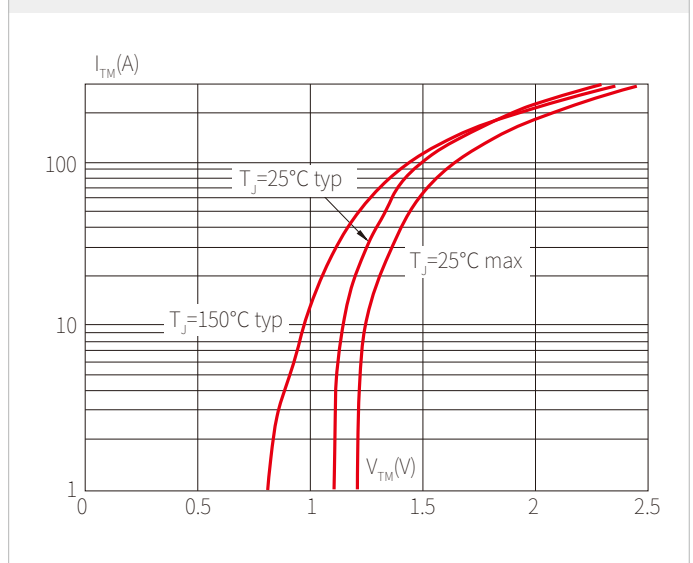
**FIG.2: RMS on-state current versus case temperature**



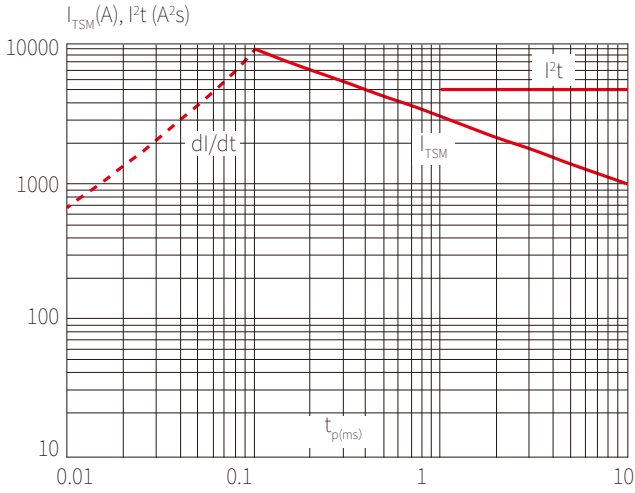
**FIG.3: Surge peak on-state current versus number of cycles**



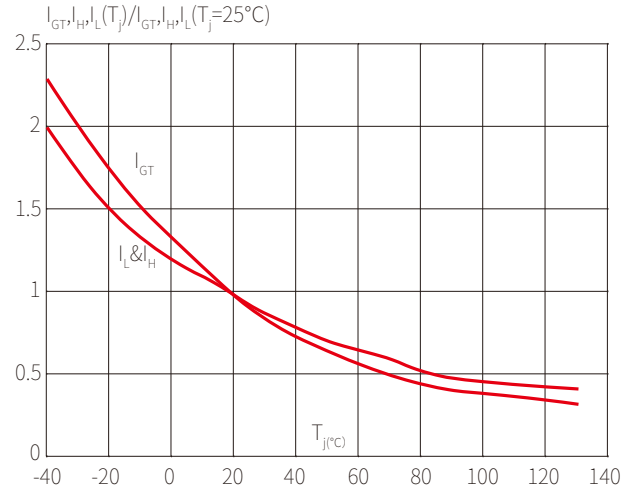
**FIG.4 On-state characteristics**



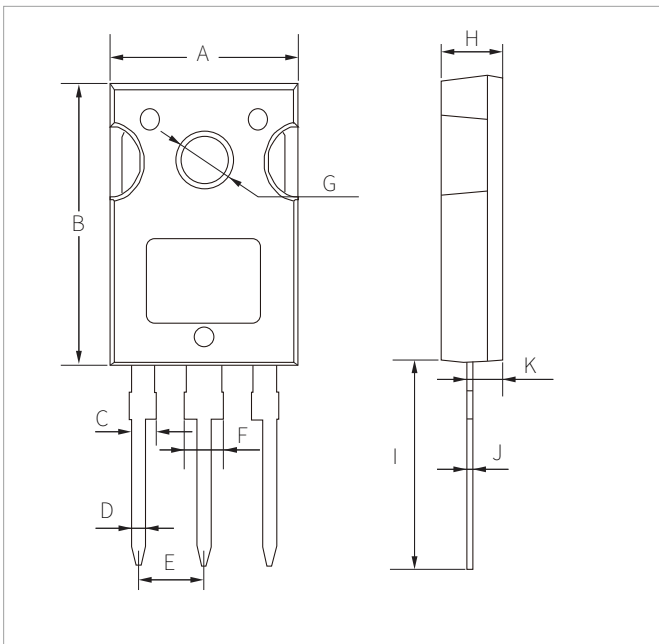
**FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$  and corresponding value of  $I^2t$  ( $di/dt < 200\text{A}/\mu\text{s}$ )**



**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	Marking	Component Package	QTY/Tube	QTY/Box	QTY/Carton
SCG80C1600	SCG80C1600 XXXX	TO-247	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](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

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