

## FEATURES

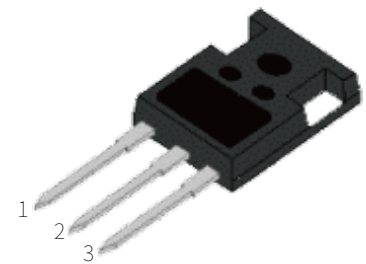
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 55A

## APPLICATIONS

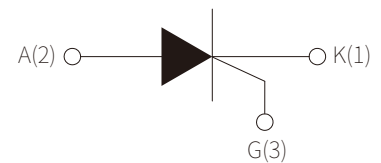
- | Motor cycle
- | Power charger
- | T-tools etc

## 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 ( $T_j=25^\circ\text{C}$ )	$V_{\text{DRM}}$	800	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{\text{RRM}}$	800	
RMS on-state current ( $T_c=70^\circ\text{C}$ )	$I_{\text{T(RMS)}}$	55	A
Non repetitive surge peak on-state current ( $t_p=10\text{ms}$ )	$I_{\text{TSM}}$	700	
I <sup>2</sup> t value for fusing ( $t_p=10\text{ms}$ )	I <sup>2</sup> t	2450	A <sup>2</sup> S
Critical rate of rise of on-state current ( $I_G=2 \cdot I_{GT}$ )	di/dt	200	A/ $\mu\text{s}$
Peak gate current	$I_{\text{GM}}$	10	A
Average gate power dissipation	$P_{\text{G(AV)}}$	1	W
Storage junction temperature range	$T_{\text{STG}}$	-40~+150	°C
Operating junction temperature range	$T_j$	-40~+125	

## 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	-	50	$\mu\text{A}$
$V_{GT}$		-	-	1	V
$V_{GD}$	$V_D=V_{DRM}, R_L=3.3\text{k}\Omega, T_j=125^{\circ}\text{C}$	0.2	-	-	
$I_H$	$I_j=500\text{mA}$	-	-	100	mA
$I_L$	$I_G=1.2I_{GT}$	-	-	120	
$dV_D/dt$	$V_D=540\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$	1500	-	-	V/ $\mu\text{s}$

## STATIC CHARACTERISTICS

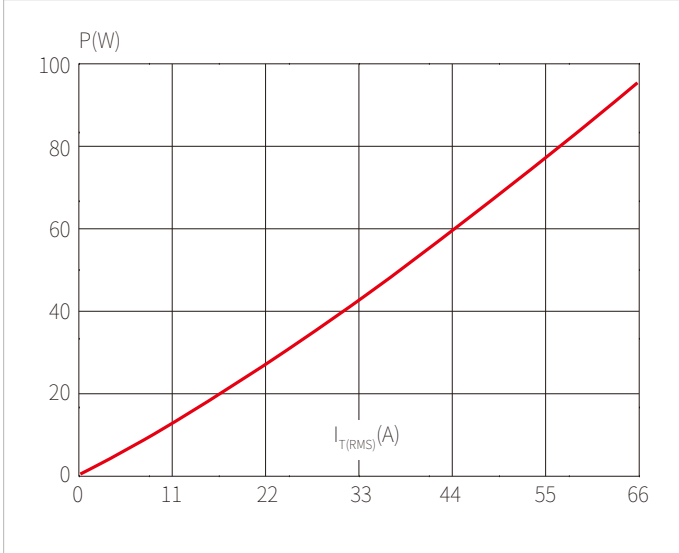
Symbol	Parameter	Value	Unit
$V_{TM}$	$I_{TM}=80\text{A}, t_p=380\mu\text{s}$	$\leq 1.5$	V
$I_{DRM}$	$V_D=V_{DRM}, V_R=V_{RRM}$	$\leq 9$	$\mu\text{A}$
$I_{RRM}$		$\leq 5$	mA

## THERMAL RESISTANCES

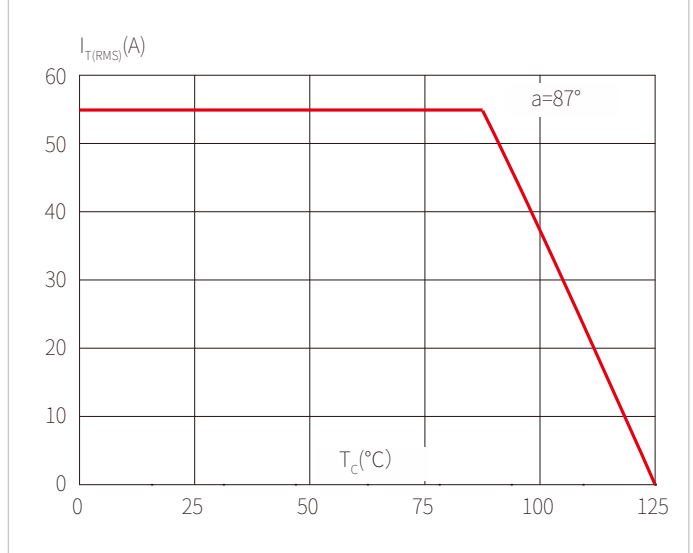
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(DC)	0.5	$^{\circ}\text{C}/\text{W}$

# PARAMETER CHARACTERISTIC CURVE

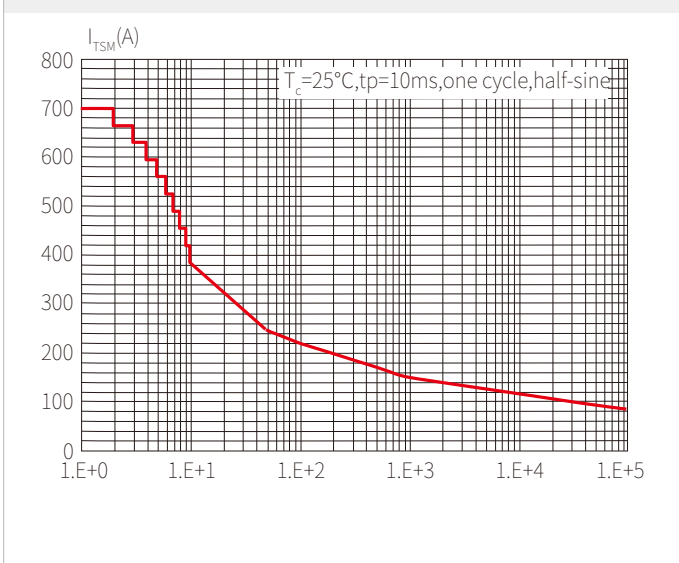
**FIG.1 Maximum power dissipation versus RMS on-state current**



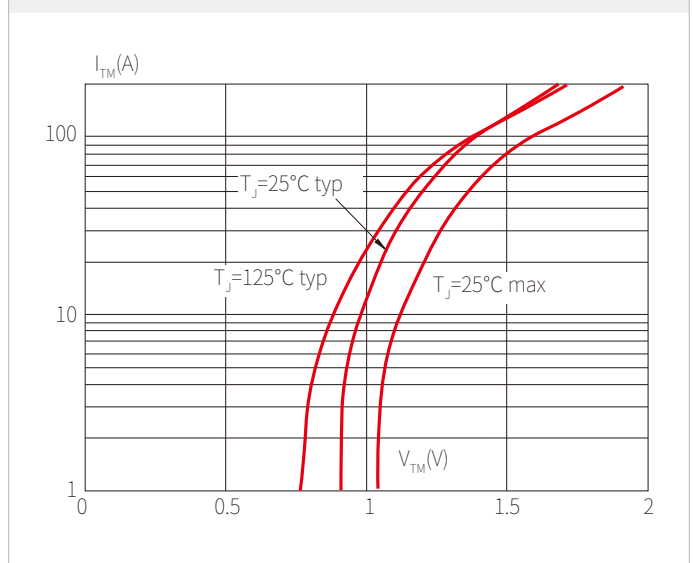
**FIG.2: RMS on-state current versus case temperature**



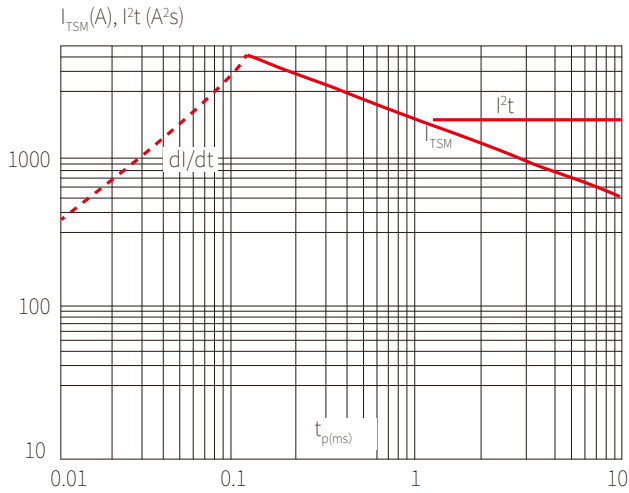
**FIG.3: Surge peak on-state current versus number of cycles**



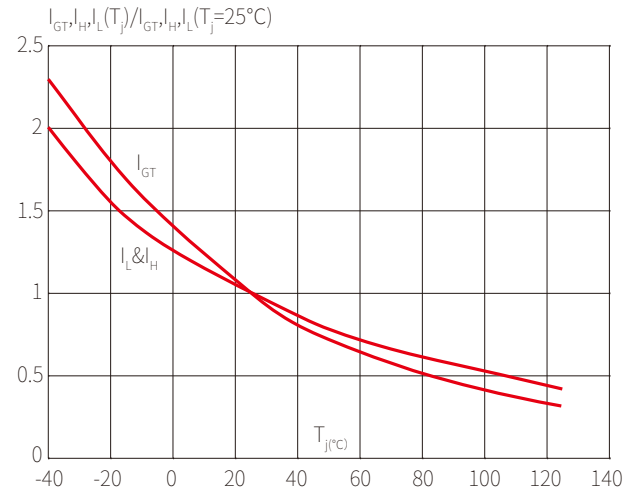
**FIG.4 On-state characteristics**



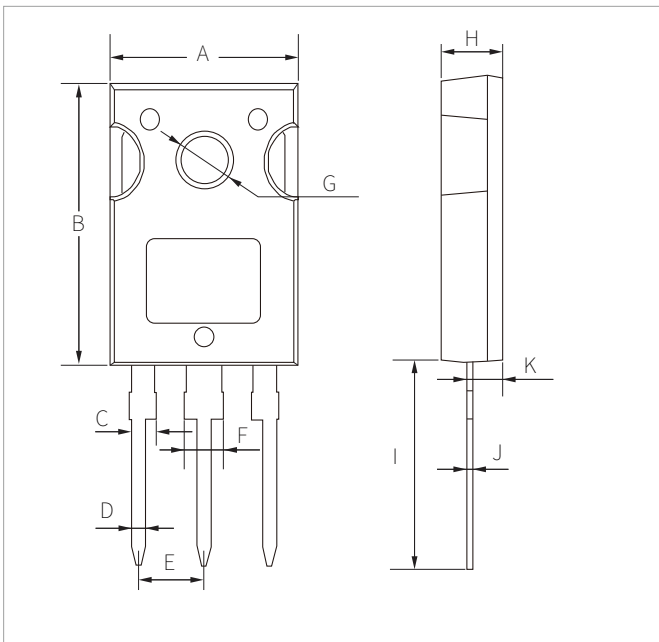
**FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$  and corresponding value of  $I^2t$  ( $dI/dt < 50\text{A}/\mu\text{s}$ )**



**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	QTY/Tube	QTY/Box	QTY/Carton
SCG55C80	TO-247	30PCS	450PCS	2250PCS

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