

FEATURES

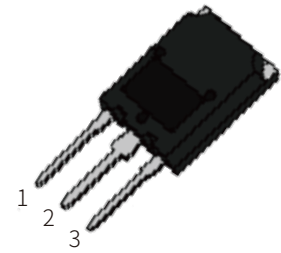
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 90A

APPLICATIONS

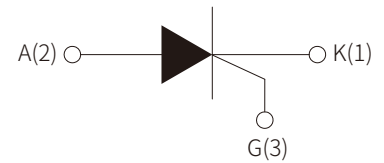
- | Motor cycle
- | Power charger
- | T-tools etc

APPROVALS

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



TO-247S



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 ($T_c \leq 65^\circ\text{C}$)	$I_{\text{T(AV)}}$	90	A
Non repetitive surge peak on-state current ($t_p=10\text{ms}, T_j=25^\circ\text{C}$)	I_{TSM}	1200	
I^2t value for fusing ($t_p=10\text{ms}, T_j=25^\circ\text{C}$)	I^2t	7200	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	$I_T=500\text{mA}$	-	-	150	mA
I_L	$I_G=1.2I_{GT}$	-	-	250	
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} =130A,tp=380μs	T _j =25°C	≤1.55	V
I _{DRM}	V _D =V _{DRM} ，V _R =V _{RRM}		≤30	uA
I _{RRM}		T _j =150°C	≤15	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(DC)	0.31	$^{\circ}\text{C/W}$

PARAMETER CHARACTERISTIC CURVE

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

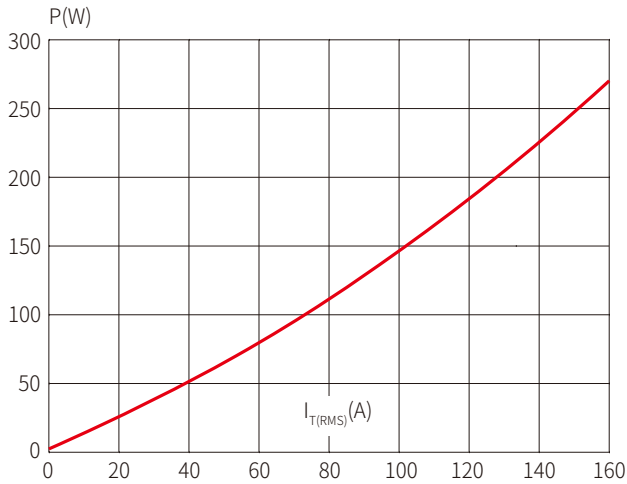


FIG.2: RMS on-state current versus case temperature

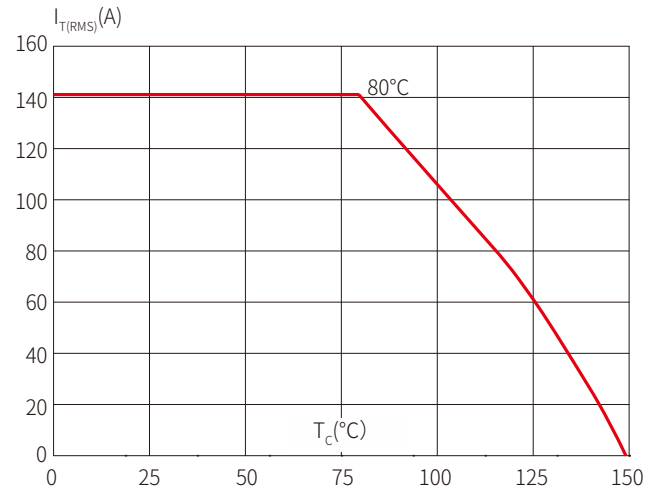


FIG.3: Surge peak on-state current versus number of cycles

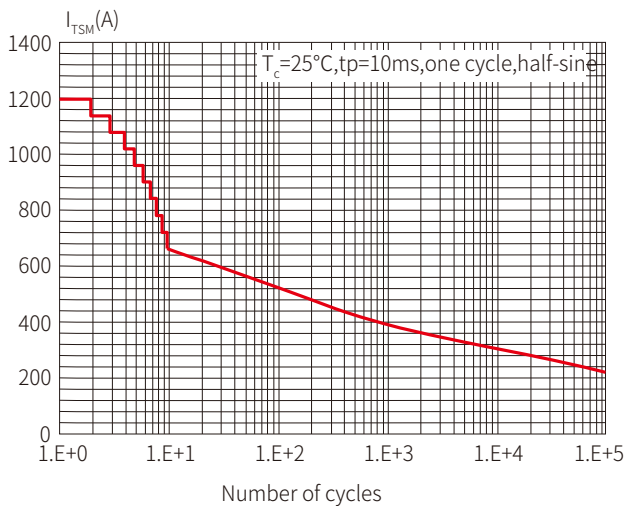


FIG.4 On-state characteristics

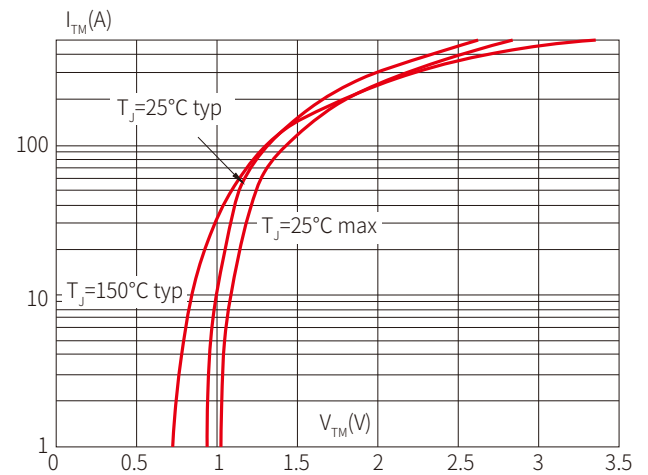


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$ and corresponding value of I^2t ($di/dt < 200\text{A}/\mu\text{s}$)

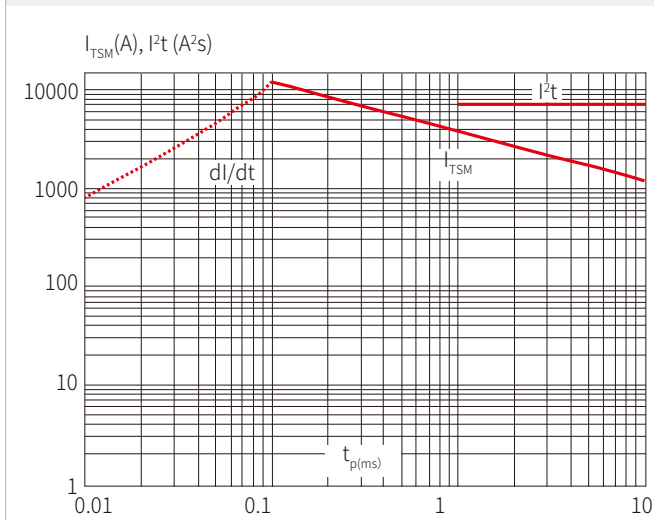
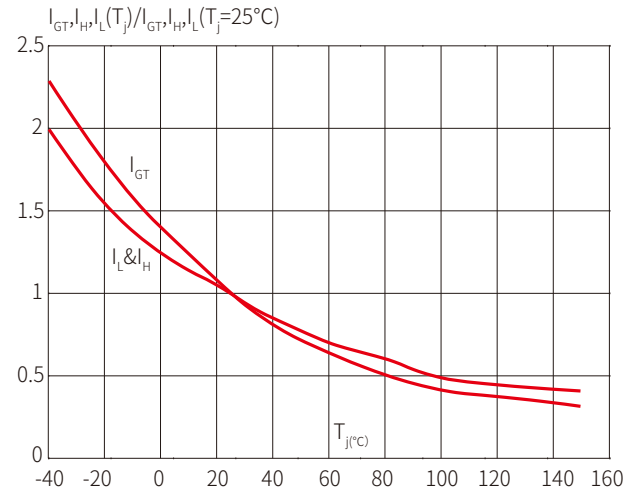
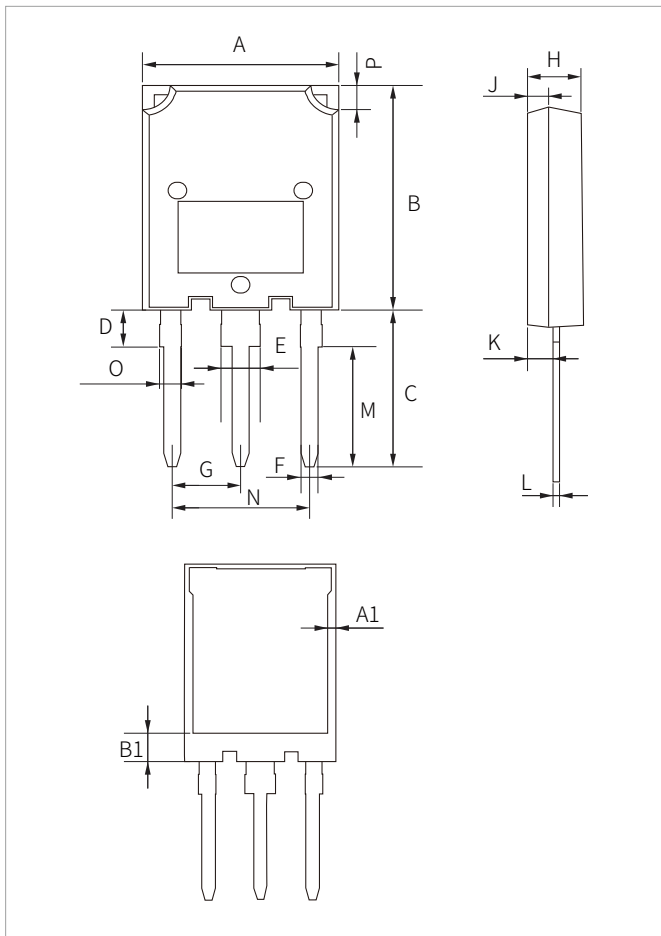


FIG.6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



TO-247S PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	15.10	16.10	0.594	0.634
A1	0.80	1.20	0.031	0.047
B	19.80	20.80	0.780	0.819
B1	3.30	3.70	0.130	0.146
C	13.80	14.80	0.543	0.583
D	3.00	4.00	0.118	0.157
E	2.75	3.35	0.108	0.132
F	1.30	1.50	0.051	0.059
G	5.10	5.80	0.201	0.228
H	4.50	5.50	0.177	0.217
J	1.45	2.15	0.057	0.085
K	1.90	2.80	0.075	0.110
L	0.55	0.80	0.022	0.031
M	10.60	11.00	0.417	0.433
N	10.70	11.10	0.421	0.437
O	1.50	1.90	0.059	0.075
P	2.00	2.40	0.079	0.094

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Tube	QTY/Box	QTY/Carton
SCG90C1600	TO-247S	 SCG90C1600 XXXX	30PCS	450PCS	2250PCS

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