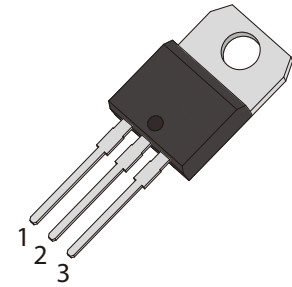


## FEATURES

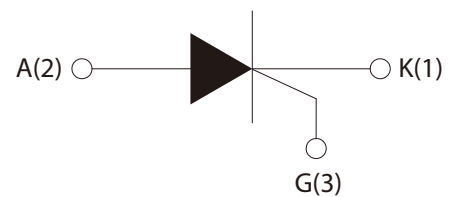
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 10A
- | RoHS (2002/95/EC) compliant packages



TO-220A

## APPLICATIONS

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



Schematic Symbol

## APPROVALS

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

## 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 ( $T_c=110^\circ\text{C}$ )	$I_{\text{T(RMS)}}$	10	A
Non repetitive surge peak on-state current ( $t_p=10\text{ms}$ )	$I_{\text{TSM}}$	120	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )	$I^2t$	72	$\text{A}^2\text{S}$
Critical rate of rise of on-state current ( $I_G=2*I_{GT}$ )	$d/d_t$	50	$\text{A}/\mu\text{s}$
Peak gate current	$I_{\text{GM}}$	4	A
Average gate power dissipation	$P_{\text{G(AV)}}$	1	W
Storage junction temperature range	$T_{\text{STG}}$	-40~+150	$^\circ\text{C}$
Operating junction temperature range	$T_j$	-40~+125	

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

Symbol	Test Condition	Value	Unit
I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω	≤10	mA
V <sub>GT</sub>		≤1.5	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	≥0.2	
I <sub>H</sub>	I <sub>T</sub> =500mA	≤30	mA
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	≤40	
dV <sub>D</sub> /dt	V <sub>D</sub> =2/3V <sub>DRM</sub> Gate Open, T <sub>j</sub> =150°C	≥200	V/μs

## STATIC CHARACTERISTICS

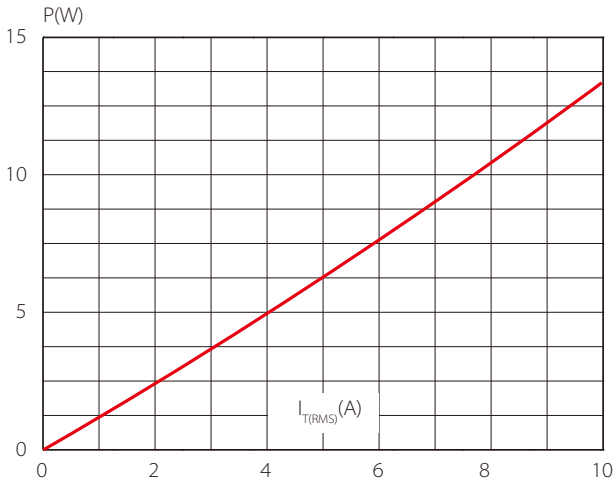
Symbol	Parameter	Value	Unit
V <sub>TM</sub>	I <sub>TM</sub> =20A, tp=380μs	≤1.55	V
I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> , V <sub>R</sub> =V <sub>RRM</sub>		
I <sub>RRM</sub>			≤1

## THERMAL RESISTANCES

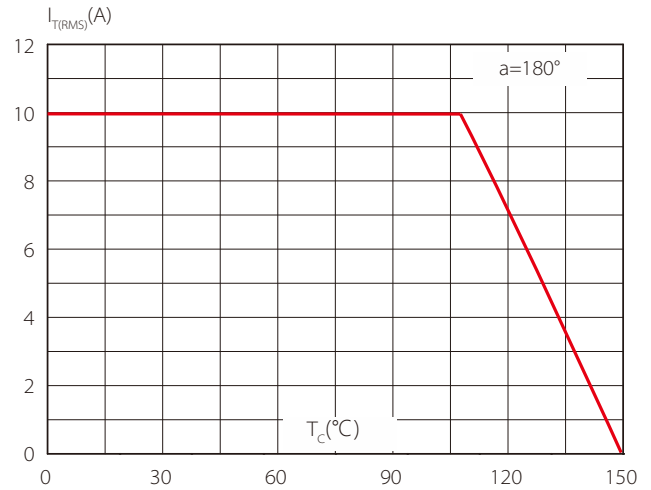
Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	Junction to case(AC)	2.5	°C/W

# PARAMETER CHARACTERISTIC CURVE

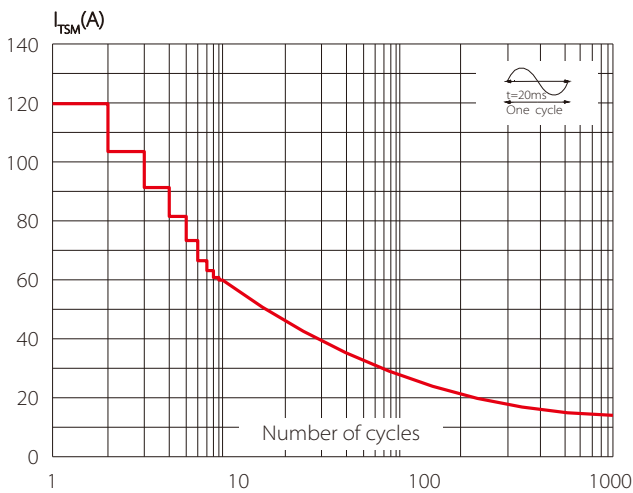
**FIG.1 Maximum power dissipation versus RMS on-state current**



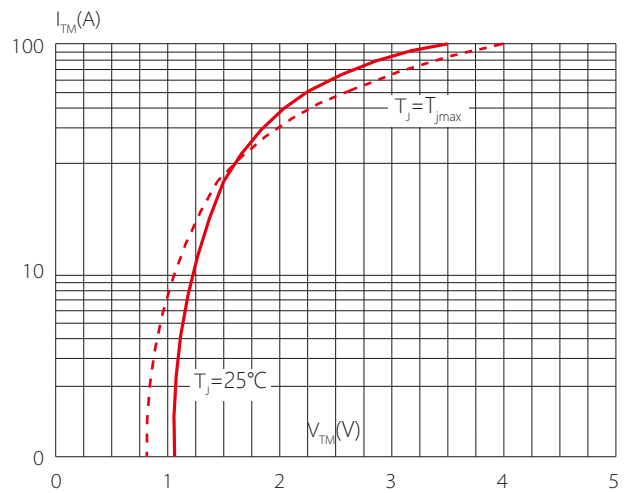
**FIG.2: RMS on-state current versus case temperature**



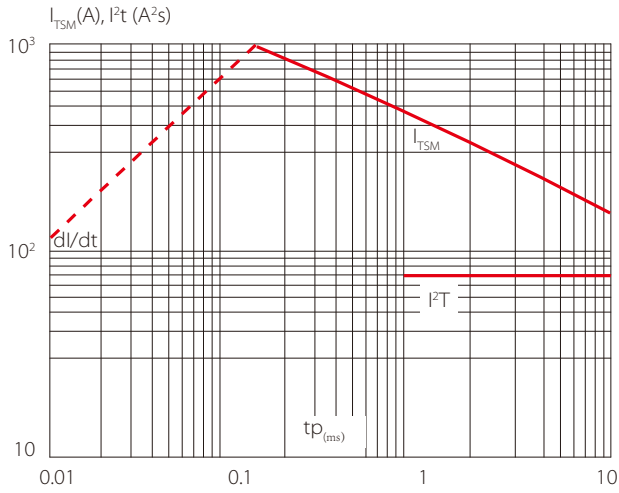
**FIG.3: Surge peak on-state current versus number of cycles**



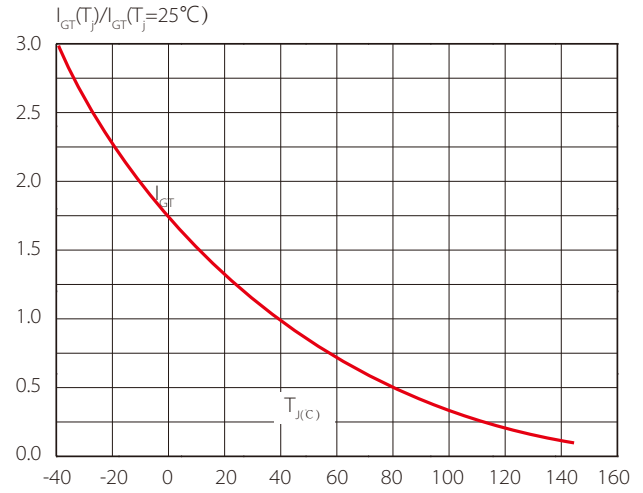
**FIG.4 On-state characteristics (maximum values)**



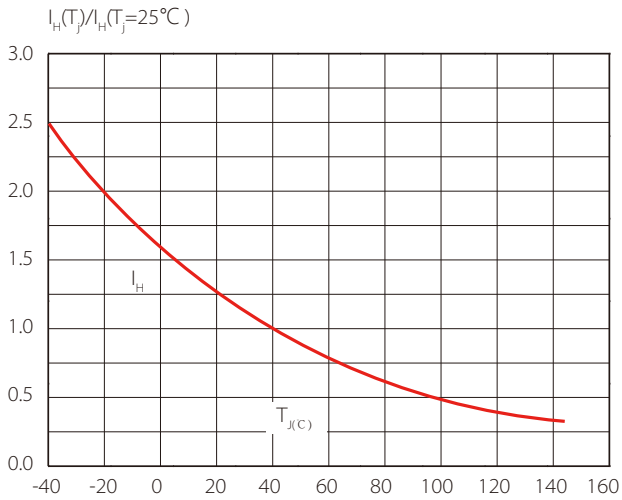
**FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$  and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )**



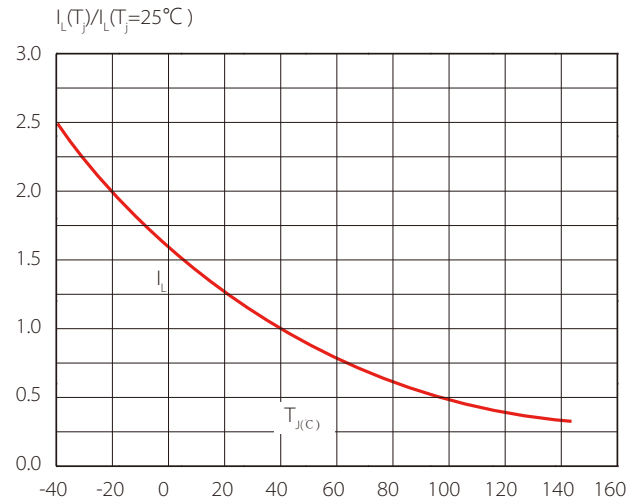
**FIG.6 Relative variations of gate trigger current, holding current and latching current versus junction temperature**



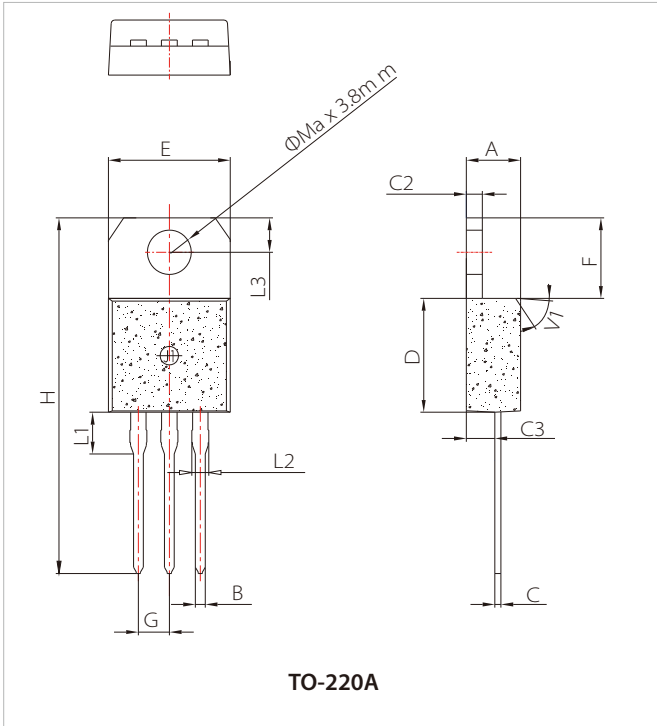
**FIG.7 Relative variations of holding current versus junction temperature**



**FIG.8 Relative variations of latching current versus junction temperature**



## PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

## ORDERING INFORMATION

Part Number	Package	Qty/pcs		
		Tube	Inner Box	Carton
SCA10C80	TO-220A	50	1000	5000

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