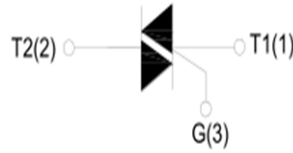


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TG80E180. PDF

Features

- ▣ IT(RMS): 80A
- ▣ VDRM VRRM:
600V/800V
1200V/1600V/1800V



TG-C

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value
I_T (RMS)	RMS on-state current	80A
VDRM	Repetitive peak off-state voltage	600V/800V/1200V/1600V/1800V
VRRM	Repetitive peak reverse voltage	600V/800V/1200V/1600V/1800V
T_j	Operating junction temperature range	$\sim 40^{\circ}\text{C} \sim 125^{\circ}\text{C}$
T_{stg}	Storage junction temperature range	$\sim 40^{\circ}\text{C} \sim 150^{\circ}\text{C}$
VDSM	Non repetitive surge peak Off-state voltage	VDRM+100V
VRSM	Non repetitive peak reverse voltage	VRRM+100V
ITSM	Non repetitive surge peak on-state current (tp=20ms)	800A
$I^2 t$	$I^2 t$ value for fusing (tp=10ms)	3200A ² S
dI/dt	Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	100A/ μ s
IGM	Peak gate current	8A
PG(AV)	Average gate power dissipation	2W
PGM	Peak gate power	10W

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

Symbol	Test Condition	Quadrant	Value
			TG80E180
IGT	VD=12V RL=33 Ω	I - II - III	< 50mA
VGT		ALL	< 1.3V
VGD	VD=VDRM Tj=125 $^{\circ}\text{C}$ RL=3.3K Ω	ALL	> 0.2V
IL	IG=1.2IGT	I - III	< 80mA
		II	< 120mA
IH	IT=100mA		< 70mA
dV/dt	VD=2/3VDRM Gate Open Tj=125 $^{\circ}\text{C}$		> 1500V/ μ s
VTM	ITM=120A tp=380 μ s (Tj =25 $^{\circ}\text{C}$)		< 1.5V
IDRM	VD=VDRMVR=VR	Tj =25 $^{\circ}\text{C}$	< 20 μ A
IRRM	RM	Tj =125 $^{\circ}\text{C}$	< 10mA
Rth(j-c)	junction to case (AC)	TG-C	0.31 $^{\circ}\text{C}/\text{W}$

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

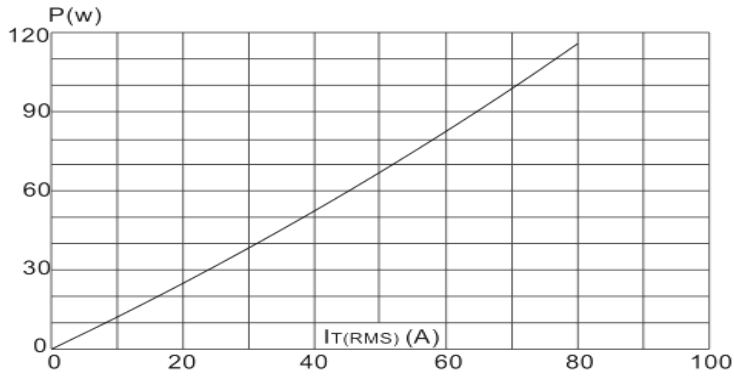


FIG.2: RMS on-state current versus case temperature

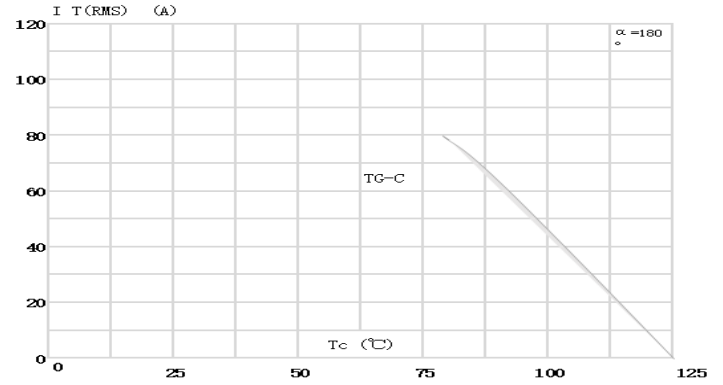


FIG.3: Surge peak on-state current versus number of cycles

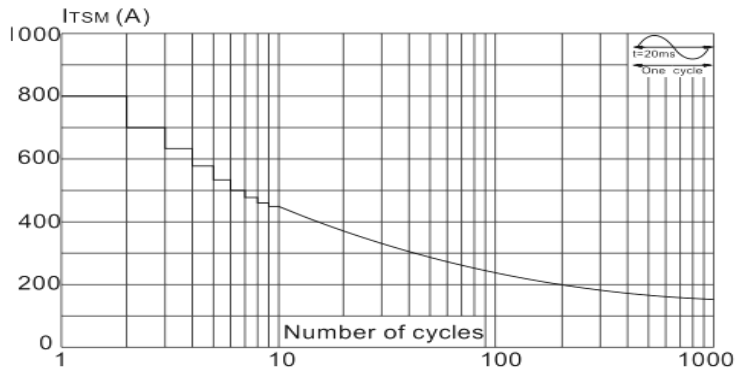


FIG.4: On-state characteristics (maximum values)

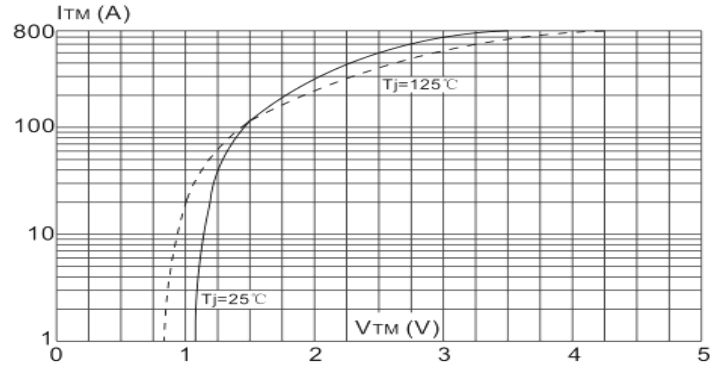


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($dI/dt < 100\text{A}/\mu\text{s}$)

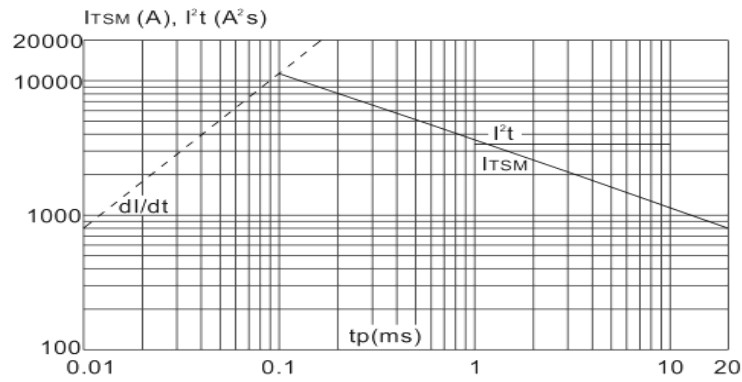
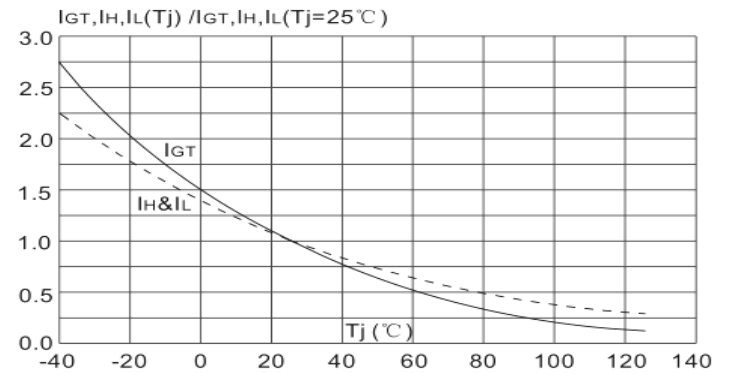


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



PACKAGE MECHANICAL DATA

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			39.2			1.543
B	29.8	30.0	30.2	1.173	1.181	1.189
C			21.6			0.85
D			20.2			0.795
E			20.5			0.791
F			23			0.906
T1, T2		8.10			0.318	
T3		5.65			0.222	
T'		6.35			0.25	
t1, t2		0.8			0.031	
t3		0.6			0.023	
G		13.9			0.547	
H1		2.6			0.102	
H2		10.8			0.425	
H			22.8			0.886
h1	6.2	6.35	6.5	0.244	0.25	0.256
h2	7.8	7.95	8.1	0.307	0.313	0.319
h3	9.45	9.75	10.05	0.372	0.384	0.396
I	2.7	3.0	3.3	0.106	0.118	0.130
J		10.8			0.425	

