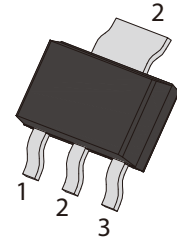


FEATURES

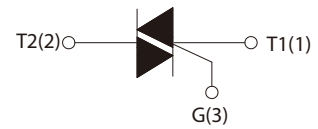
- | High current 2 A RMS current Triac
- | Low thermal resistance
- | High commutation or very high commutation capability
- | RoHS (2002/95/EC) compliant packages
- | UL-94, V0 flammability package resin compliance



SOT-223

APPLICATIONS

- | General purpose motor control circuits
- | Phase control operations in light dimmers and motor speed controllers
- | Home appliances



Schematic Symbol

APPROVALS

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

THE MAIN PARAMETERS

Symbol	Parameter	Value	Unit
$I_{T(RMS)}$	RMS on-state current	2	A
V_{DRM}	Off-state repetitive peak voltage	800	V
V_{TM}	On-state voltage	1.6	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	800	V
RMS on-state current ($T_c=75^\circ\text{C}$)	$I_{\text{T(RMS)}}$	2	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	20	
I ² t value for fusing ($t_p=10\text{ms}$)	I ² t	1.28	A ² S
Critical rate of rise of on-state current ($I_G=2 \cdot I_{\text{GT}}$)	d/d_t	50	A/ μs
Peak gate current	I_{GM}	1	A
Average gate power dissipation	$P_{\text{G(AV)}}$	0.2	W
Storage junction temperature range	T_{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	Quadrant	Value				Unit
			TW	SW	CW	BW	
I_{GT}	$V_D=12\text{V}, R_L=33\Omega$	I - II - III	≤ 5	≤ 10	≤ 35	≤ 50	mA
V_{GT}			≤ 1.5				
V_{GD}	$V_D=V_{\text{DRM}}, R_L=3.3\text{K}\Omega, T_j=125^\circ\text{C}$		≥ 0.2				V
I_{H}	$I_t=100\text{mA}$		≤ 10	≤ 15	≤ 35	≤ 60	mA
I_{L}	$I_G=1.2I_{\text{GT}}$	I - III	≤ 15	≤ 35	≤ 60	≤ 80	
		II	≤ 15	≤ 15	≤ 15	≤ 15	
dV_D/dt	$V_D=67\%V_{\text{DRM}}, T_j=125^\circ\text{C}$		≥ 50	≥ 100	≥ 400	≥ 1000	V/ μs
V_{TM}	$I_{\text{TM}}=2.0\text{A}, t_p=380\mu\text{s}$		≤ 1.6				V
I_{DRM}	$V_D=V_{\text{DRM}}, V_R=V_{\text{RRM}}$	$T_j=25^\circ\text{C}$	≤ 10				μA
I_{RRM}		$T_j=125^\circ\text{C}$	≤ 0.5				mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	25	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient	60	$^{\circ}\text{C}/\text{W}$

PARAMETER CHARACTERISTIC CURVE

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

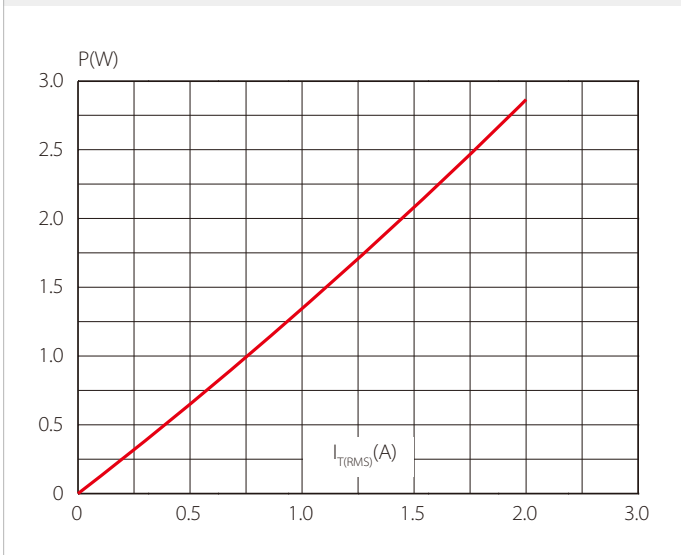


FIG.2: RMS on-state current versus case temperature

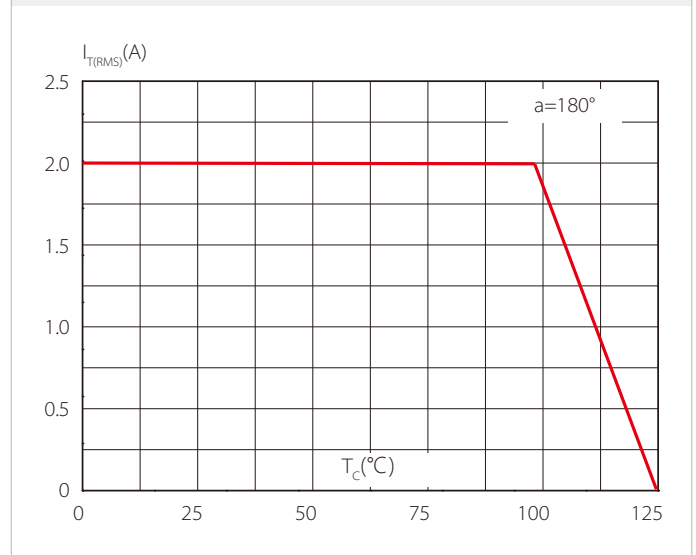


FIG.3: Surge peak on-state current versus number of cycles

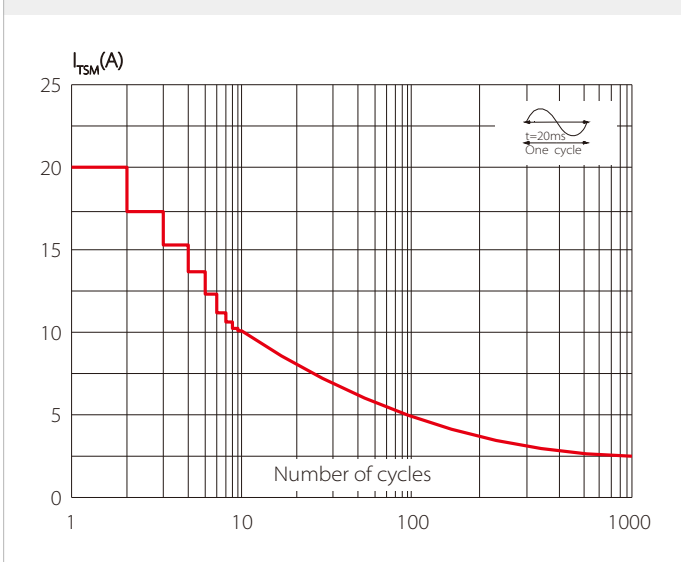


FIG.4 On-state characteristics (maximum values)

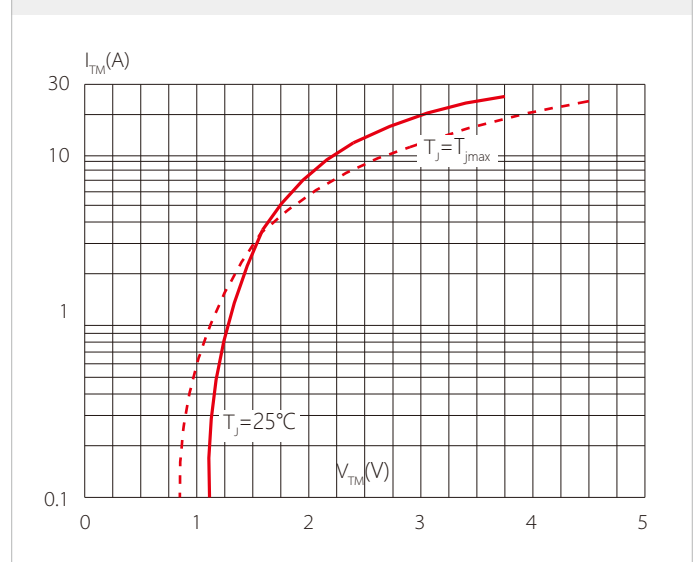


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

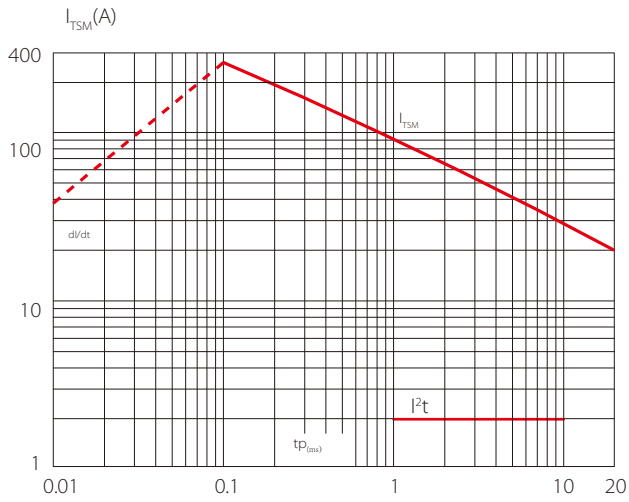


FIG.6 Relative variations of gate trigger current versus junction temperature

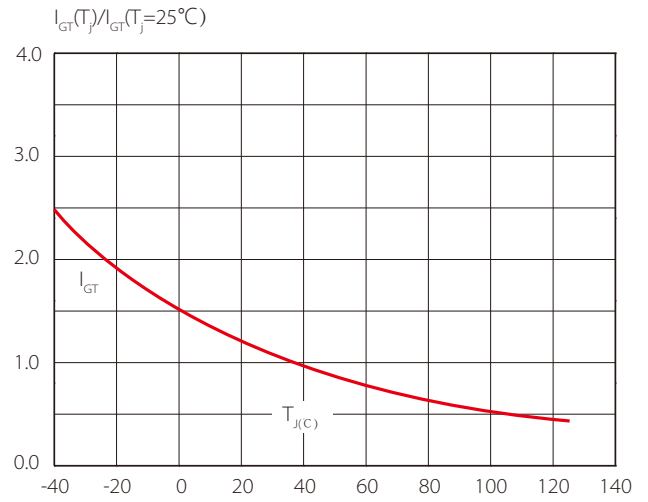


FIG.7 Relative variations of holding current versus junction temperature

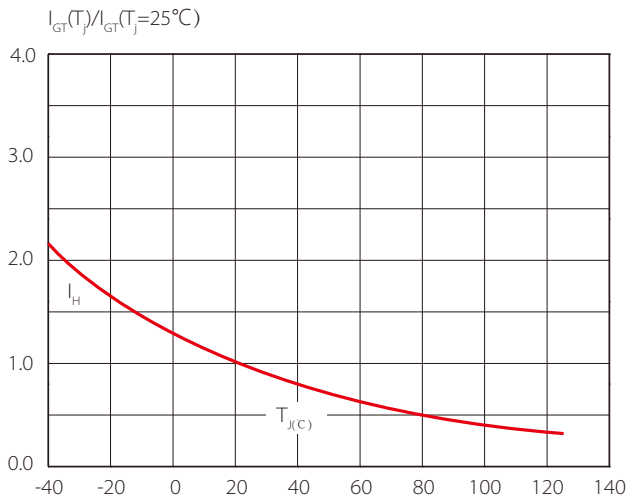
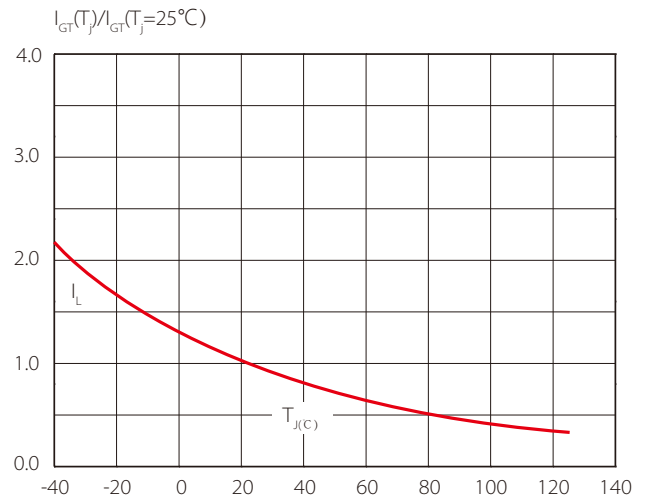
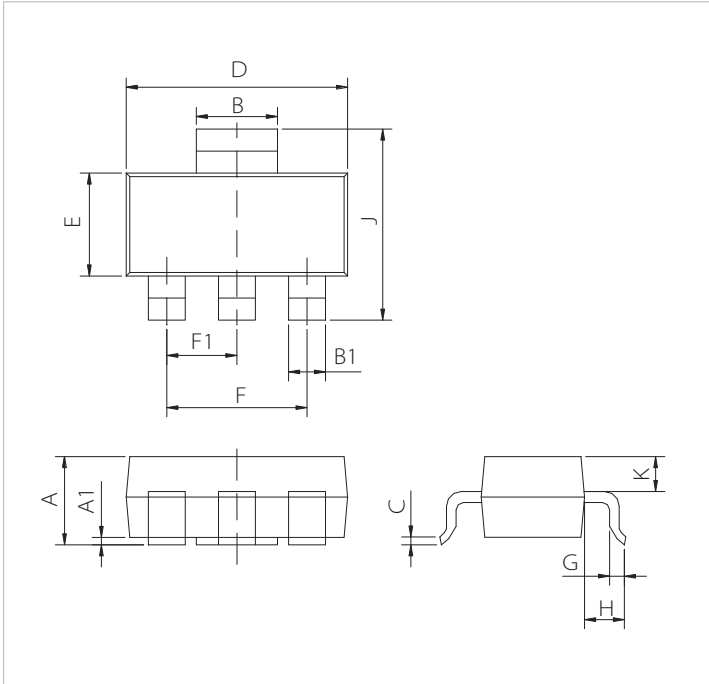


FIG.8 Relative variations of latching current versus junction temperature



SOT-223 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.50		1.60	0.059		0.071
A1	0.01		0.06	0.001		0.004
B	2.90		3.10	0.118		0.122
B1	0.60		0.80	0.048		0.052
C	0.22		0.32	0.009		0.013
D	6.30		6.70	0.248		0.264
E	3.30		3.70	0.130		0.146
F		4.60			0.181	
F1		2.30			0.091	
G	0.70		1.10	0.028		0.043
H	1.50		2.00	0.059		0.079
J	6.70		7.30	0.264		0.287
K		0.90			0.035	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
STV2A80TW(SW/CW/BW)	SOT-223	1000PCS	7"

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By QR Code

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