

SOT-223 TRIAC 双向可控硅

■Features 特点

Bidirectional switching and phase control 双向开关和相位控制

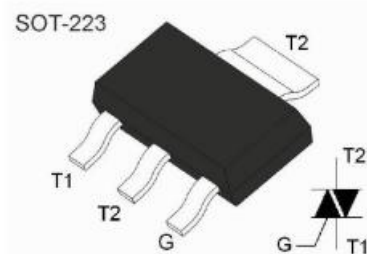
Glass passivated Process 玻璃钝化工艺

■Applications 应用

Motor Control 马达控制

Industrial Lighting 工业照明

Heating Switching 加热开关



■Absolute Maximum Ratings 最大额定值

Characteristic 特性参数	Symbol 符号		Value 额定值	Unit 单位
Peak Repetitive Off-State Voltage 峰值可重复断态耐压	V_{DRM}, V_{RRM}		600 800	V
On-State RMS Current 通态均方根电流	$I_{T(RMS)}$		1	A
Peak Non-Repetitive Surge Current @25°C 峰值不可重复浪涌电流	I_{TSM}	$t=20ms$ $t=16.7ms$	10 11	A
Circuit Fusing Considerations($t=10ms$) 电路保险指数	I^2t		0.5	A ² s
Peak Gate Current-Forward (Pulse Width $\leq 1 \mu s$) 正向门极峰值电流	I_{GM}		2	A
Peak Gate Voltage-Reverse (Pulse Width $\leq 1 \mu s$) 反向门极峰值电压	V_{GRM}		5	V
Forward Peak Gate Power (Pulse Width $\leq 1 \mu s$) 正向门极峰值功率	P_{GM}		5	W
Forward Average Gate Power ($t=8.3ms$) 正向门极平均功率	$P_{G(AV)}$		0.5	W
Critical rate of rise of on-state current 通态电流上升率 $I_{TM} = 6 A$; $I_G = 0.2 A$; $dI_G/dt = 0.2 A/s$	dI/dt	T2+G+ T2+G- T2-G- T2-G+	50 50 50 10	A/ μs
Thermal Resistance J-C 结到管壳热阻	$R_{\theta JC}$		15	°C/W

■ Electrical Characteristics 电特性

(T_A=25°C unless otherwise noted 如无特殊说明, 温度为 25°C)

Characteristic Parameters 特性参数	Symbol 符号	Min 最小值	Max 最大值				Unit 单位	Condition 条件
			-B	-C	-D	-E		
Peak Forward Blocking Current 峰值正向漏电流	I _{DRM}	T _c =25°C T _c =125°C	5 500				μA	V _D =V _{DRM}
Peak Forward On-State Voltage 峰值正向通态电压	V _{TM}		1.5				V	I _{TM} =2A
Gate Trigger Current 触发电流	I _{GT}	T2+G+	50	25	5	10	mA	V _D =12V I _T =0.1A
		T2+G-	50	25	5	10		
		T2-G-	50	25	5	10		
		T2-G+	100	50	10	25		
Gate Trigger Voltage 触发电压	V _{GT}		1.5				V	V _D =12V I _T =0.1A
Holding Current 维持电流(T/D)	I _H		50	25	10	15	mA	V _D =12V I _{GT} =0.1A
Latch Current 擎住电流(T/D)	I _L	T2+G+	50	40	10	15	mA	V _D =12V I _{GT} =0.1A
		T2+G-	50	40	10	15		
		T2-G-	50	40	10	15		
		T2-G+	100	80	10	15		
Gate Nun Trigger Voltage 门极不触发电压	V _{GD}	0.25					V	V _D =V _{DRM}
Characteristic Parameters 特性参数	Symbol 符号	Type 典型值	Min 最小值				Unit 单位	Condition 条件
			-B	-C	-D	-E		
Off-state Voltage Change 断态电压临界上升率(T/D)	dv/dt	250	400	200	10	20	V/μS	V _D =2/3V _{DRM}
Off-state Voltage Change Com 断态电压累积上升率(T/D)	dv/dt(C)	50	I _T (RMS) = 1A; dI _{com} /dt= 1.8A/ms				V/mS	V _D =2/3V _{DRM}
Gate controlled turn-on time 门极控制开通时间	tgt	2	I _G =0.1 A; dI _G /dt = 5 A/μs				μS	I _{TM} =1.5A V _D =V _{DRM}

■ Typical Characteristic Curve 典型特性曲线

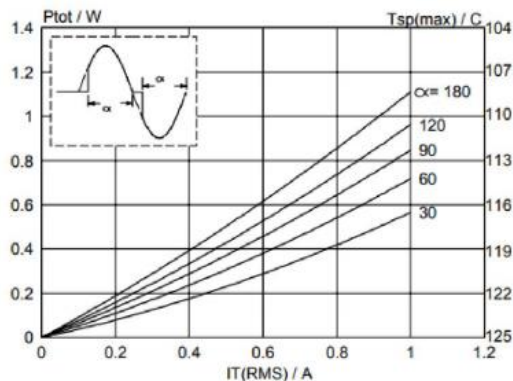


Fig.1. Maximum on-state dissipation, P_{tot} , versus rms on-state current, $I_{T(RMS)}$, where α = conduction angle.

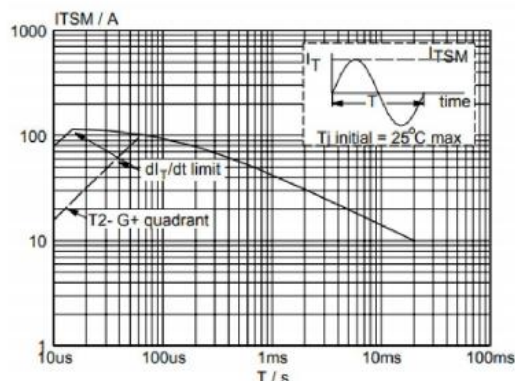


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus pulse width t_p , for sinusoidal currents, $t_p \leq 20$ ms.

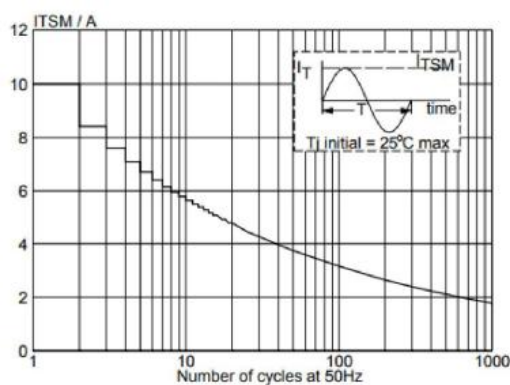


Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus number of cycles, for sinusoidal currents, $f = 50$ Hz.

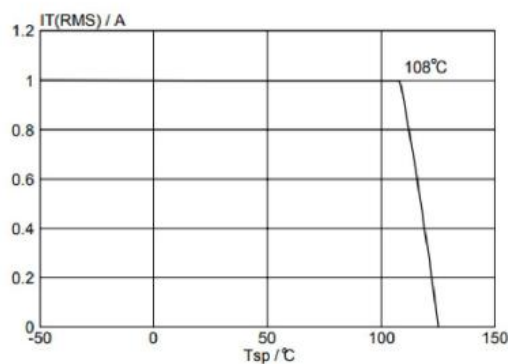


Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus solder point temperature T_{sp} .

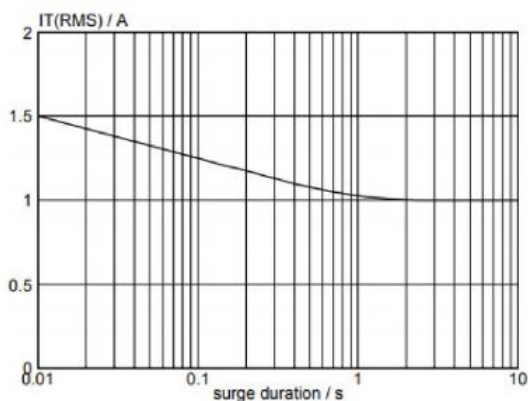


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents. $f = 50$ Hz: $T_{cn} \leq 108^\circ\text{C}$.

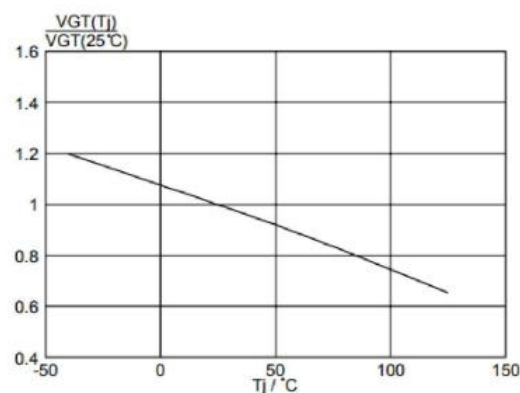


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)/V_{GT}(25^\circ\text{C})$, versus junction temperature T_j .

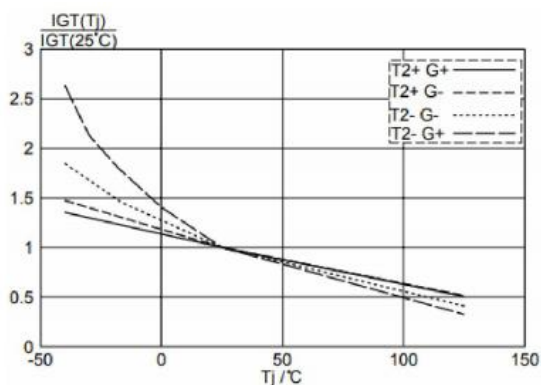


Fig.7. Normalised gate trigger current $I_{GT}(T_J) / I_{GT}(25^\circ\text{C})$, versus junction temperature T_J .

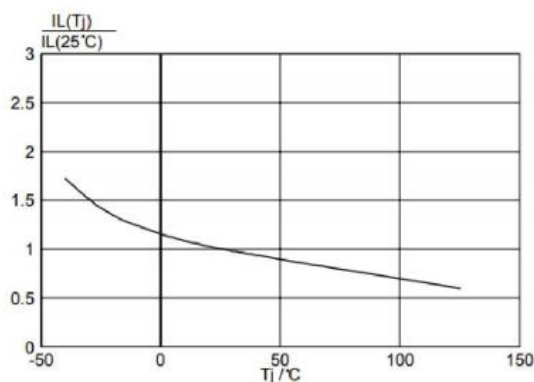


Fig.8. Normalised latching current $I_L(T_J) / I_L(25^\circ\text{C})$, versus junction temperature T_J .

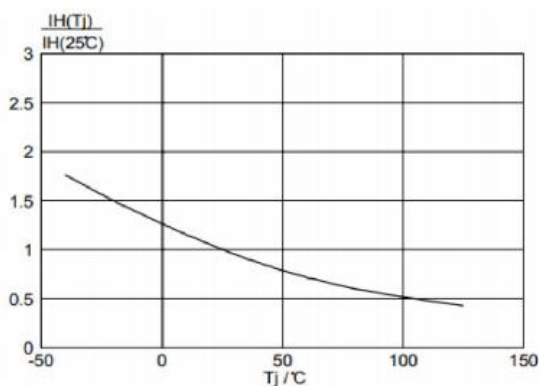


Fig.9. Normalised holding current $I_H(T_J) / I_H(25^\circ\text{C})$, versus junction temperature T_J .

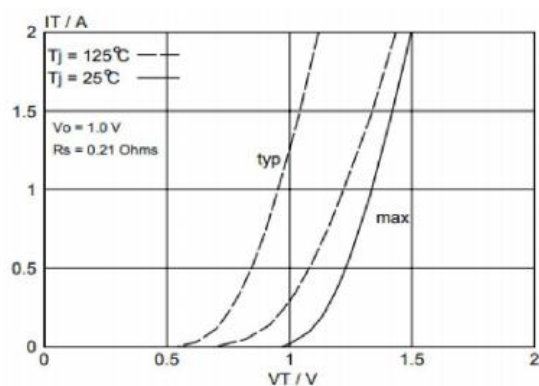


Fig.10. Typical and maximum on-state characteristic.

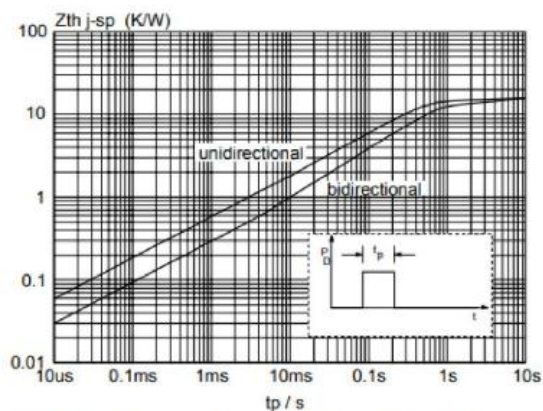


Fig.11. Transient thermal impedance $Z_{th\ j-sp}$, versus pulse width t_p .

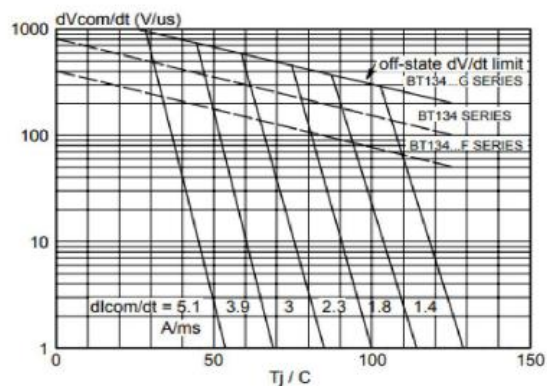


Fig.12. Typical commutation dV/dt versus junction temperature, parameter commutation dI_T/dt . The triac should commute when the dV/dt is below the value on the appropriate curve for pre-commutation dI_T/dt .

■ Dimension 外形封装尺寸

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045