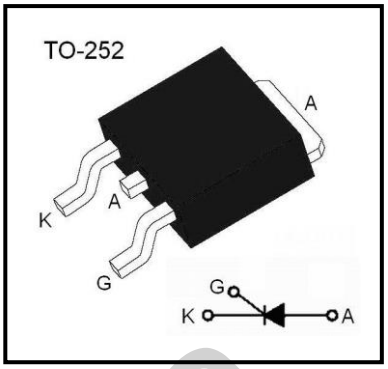
Silicon Controlled Rectifier

Reverse Blocking Triode Thyristors

Glassivated PNPN devices designed for high volume consumer applications such as temperature, light, and speed control; process and remote control, and warningsystems where reliability of operationis important.



Features

- Glassivated Surface for Reliability and Uniformity
- Power Rated at Economical Prices
- Practical Level Triggering and Holding Characteristics
- Flat, Rugged, Thermopad Construction for Low Thermal Resistance, High Heat Dissipation and Durability

Absolute Maximum Rating (T_J=25℃, unless otherwise noted)

Characteristic		Symbol	Test Conditions	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage	C106D	V_{DRM},V_{RRM}	R_{GK} = 1 kΩ	400	V
	C106M			600	V
On-State RMS Current		$I_{T(RMS)}$	180° Conduction Angles	4	A
Average Forward Current		$I_{T(AV)}$	180° Conduction Angles	2.55	A
Peak Non-repetitive Surge Current		I_{TSM}	1/2 Cycle, 60Hz	20	A
Circuit Fusing Considerations		I^2t	t = 8.3 ms	1.65	A^2s
Forward Peak Gate Power		P_{GM}	Pulse Widt≤1μs,T_C=80℃	0.5	W
Forward Average Gate Power		$P_{G(AV)}$	Pulse Widt≤1μs,T_C=80℃	0.1	W
Peak Forward Gate Current		I_{GM}	Pulse Widt≤1μs,T_C=80℃	0.2	A
Operating Junction Temperature Range		T_J		–40 ~+110	℃
Storage Temperature Range		Tstg		–40 ~ +150	℃

Thermal characteristics (T_C=25℃, unless otherwise noted)

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	3.0	℃/W
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	75	℃/W
Maximum Lead Temperature for Soldering Purposes 1/8 in. from Case for 10 Seconds	T_L	260	℃

Electrical Characteristics (T_C=25℃, unless otherwise noted)

Characteristic	Symbol	Test Conditions		Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current	I_{DRM}, I_{RRM}	V_{AK} = Rated V_{DRM} or V_{RRM}, R_{GK}=1KΩ	T_J=25°C			10	μA
			T_J=110°C			100	
Peak Forward On−State Voltage	V_{TM}	I_T = 4A				2.2	V
Gate Trigger Current (DC)	I_{GT}	V_{AK} = 6 V, R_L=100Ω	T_J = 25°C			200	μA
			T_J = –40°C			500	
Peak Reverse Gate Voltage	V_{GRM}	I_{GR}= 10μA				6	V
Gate Trigger Voltage (DC)	V_{GT}	R_{GK} = 1K Ω	T_J = 25°C	0.4		0.8	V
			T_J = –40°C	0.5		1.0	
Gate Non−Trigger Voltage (DC)	V_{GD}	V_{AK}=12V,R_L=100Ω	T_J = 110°C	0.2			V
Latching Current	I_L	V_{AK}=12V, I_G=20mA	T_J = 25°C			5.0	mA
			T_J = –40°C			7.0	
Holding Current	I_H	V_D = 12 V; I_{GT} = 0.1 A				3	mA
Forward Voltage Application Rate	dv/dt	V_D = Rated V_{DRM}, R_{GK} = 1KΩ	T_J = 110°C		8		V/μs
Turn-On Time	tgt				1.2		μs
Turn-Off Time	tq				40		μs

Typical Characteristics

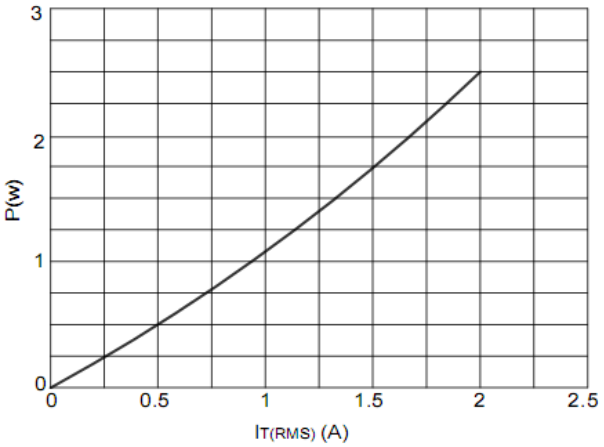


Figure 1. Maximum power dissipation vs RMSon-state current

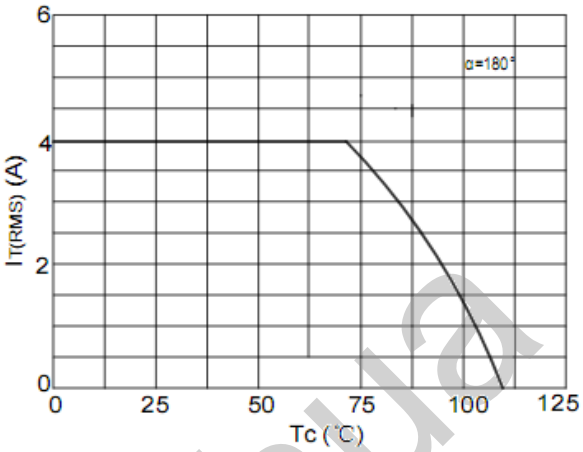


Figure 2. RMS on-state current vs casetemperature

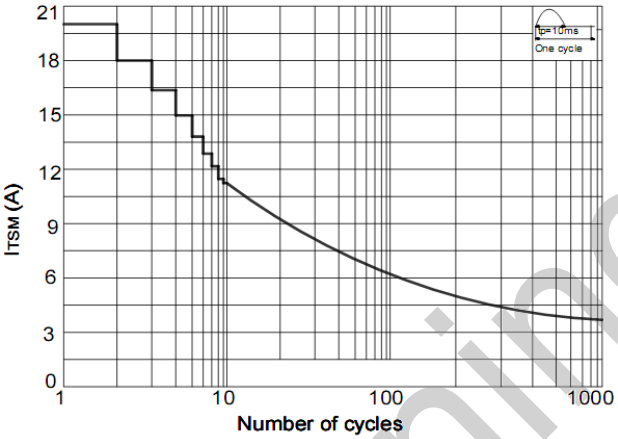


Figure 3. Surge peak on-state current vs number of cycles

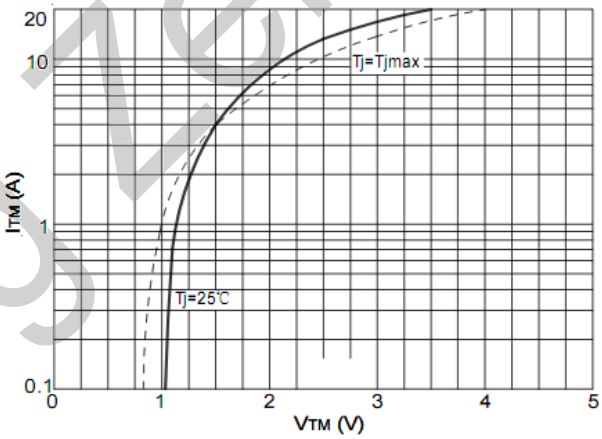


Figure 4. On-state characteristics

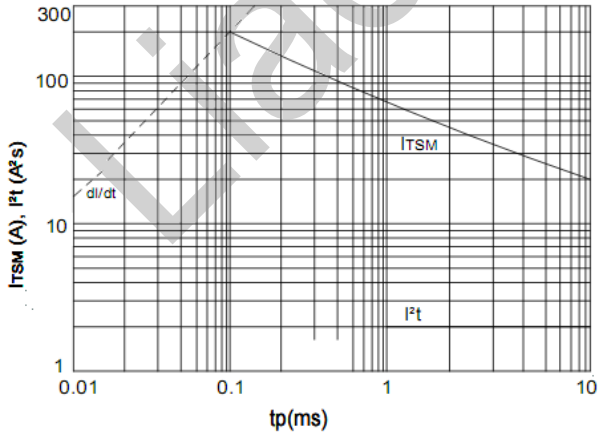


Figure 5. Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I t

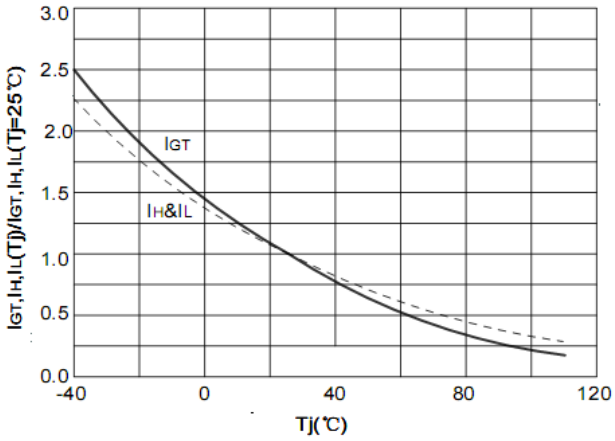
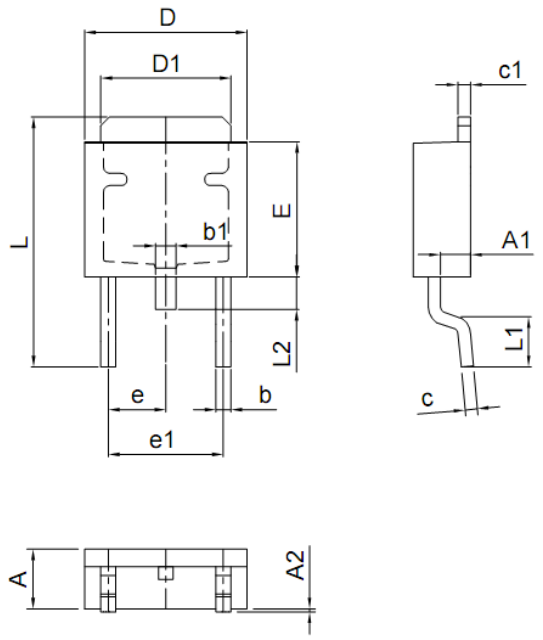


Figure 6. Relative variations of gate trigger current, holding current and latching current versus junction temperature

Package Dimensions



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.094
A1	1.00	1.40	0.039	0.055
A2	0.00	0.15	0.000	0.006
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.20	6.70	0.244	0.264
D1	5.10	5.50	0.201	0.217
E	5.50	6.00	0.217	0.236
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	9.70	10.40	0.382	0.409
L1	1.40	1.70	0.055	0.063
L2	0.60	1.20	0.024	0.047