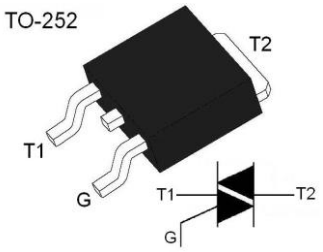
General Description



Glass passivated triacs in a plastic envelope, intended for use In applications requiring high bidirectional transient and blocking voltage capability and high thermal cycling performance. Typical applications include motor control, industrial and domestic lighting, heating and static switching.

Maximum Values

Limiting values in accordance with the Absolute Maximum System

Parameter	Symbol	Conditions		Ratings	Unit
Repetitive peak off-state voltages	V_{DRM},V_{RRM}			500 600 800	V
On-State RMS Current	$I_{T(RMS)}$	full sine wave; Tmb ≤ 102 °C		8	A
Non-repetitive peak on-state current	I_{TSM}	full sine wave; T_j = 25°C prior to surge	t=20 ms	63	A
			t=16.7ms	68	
I^2t for fusing	I^2t	t = 10 ms		18	A2s
Repetitive rate of rise of on-state current after triggering	dI/dt	I_{TM} =12A; I_G =0.2A; dI_G/dt = 0.2A/μs	T2+ G+	50	A/μs
			T2+ G-	50	
			T2- G-	50	
			T2- G+	10	
Peak gate current	I_{GM}			2	A
Peak Gate Voltage	V_{GM}			5	V
Peak gate power	P_{GM}			5	W
Average gate power	$P_{G(AV)}$	over any 20 ms period		0.5	W
Operating junction temperature	T_j			-40 ~ 125	°C
Storage Temperature	T_{stg}			-40 ~ 150	°C

Thermal Resistances

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Thermal resistance junction to mounting base	Rth j-mb	full cycle half cycle	-		2.0 2.4	K/W
Thermal resistance junction to ambient	Rth j-a	pcb mounted; minimum footprint pcb mounted;	-	75		K/W

Static Characteristics T_j = 25 ℃ unless otherwise stated

Parameter	Symbol	Conditions		Min	Typ	Max	Unit
Gate trigger current	I_{GT}	V_D = 12 V, I_T = 0.1 A	T2+ G+	-		10	mA
			T2+ G-	-		10	
			T2- G-	-		10	
			T2- G+	-		25	
Latching current	I_L	V_D = 12 V, I_T = 0.1 A	T2+ G+	-		25	mA
			T2+ G-	-		35	
			T2- G-	-		25	
			T2- G+	-		35	
Holding current	I_H	V_D = 12 V, I_{GT} = 0.1 A				20	mA
On-state voltage	V_T	I_T = 10A			1.3	1.65	V
Gate trigger voltage	V_{GT}	V_D = 12 V; I_T = 0.1 A				1.5	V
		V_D = 400 V; I_T = 0.1 A;T_j = 125 °C		0.25	0.4		
Off-state leakage current	I_D	V_D = $V_{DRM(max)}$; T_j = 125 °C			0.1	0.5	mA

Dynamic Characteristics Tj = 25 ˚C unless otherwise stated

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Critical rate of rise of Critical rate of rise of	dV_D/dt	V_{DM} =67% V_{DRM}(max); T_j = 125 °C exponential waveform; gate open circuit		50	-	V/μs
Gate controlled turn-on time	tgt	I_{TM} = 12 A; V_D = $V_{DRM(max)}$; I_G = 0.1 A; dI_G/dt = 5 A/μs;		2		μs

Typical Characteristics

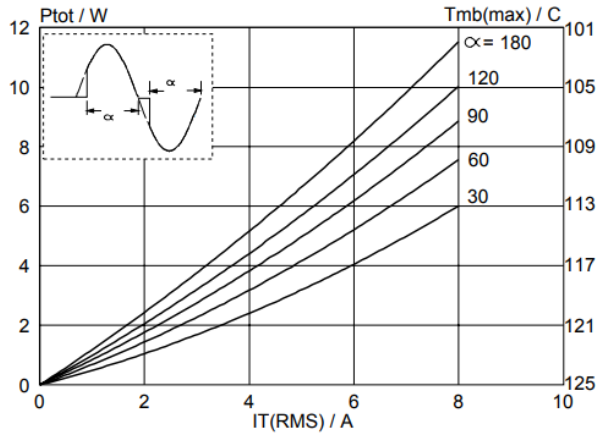


Fig.1. Maximum on-state dissipation,Ptot,versus rms o n-state current,IT(RMS), where α=conduction angle.

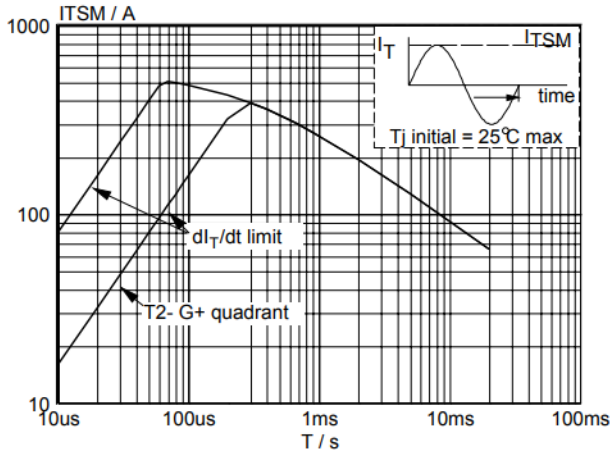


Fig.2. Maximum permissible non-repetitive peak on-state current ITSM, versus pulse width tp, for sinusoidal currents, tp ≤ 20ms.

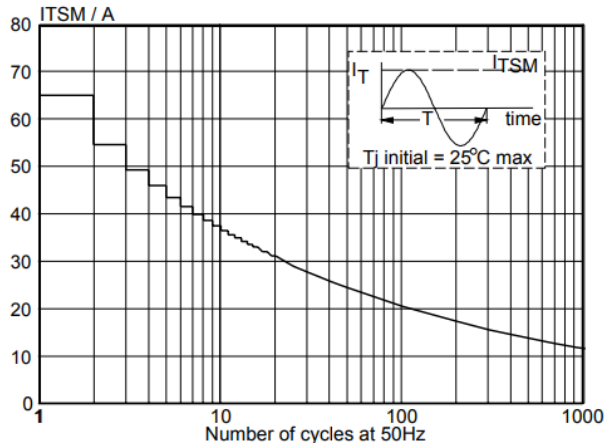


Fig.3. Maximum permissible non-repetitive peak on-state current ITSM, versus number of cycles, for sinusoidal currents, f = 50 Hz.

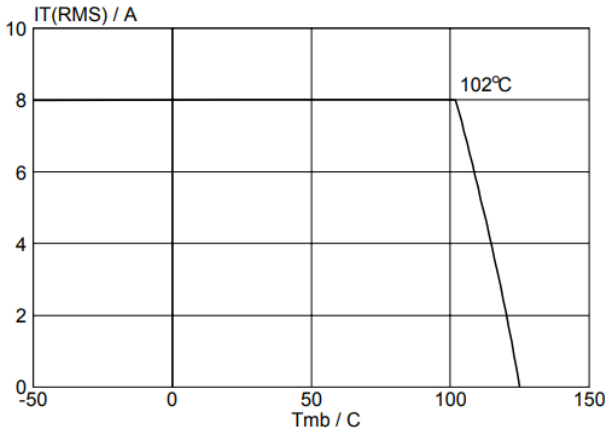


Fig.4. Maximum permissible rms current IT(RMS) ,versus lead temperature Tlead.

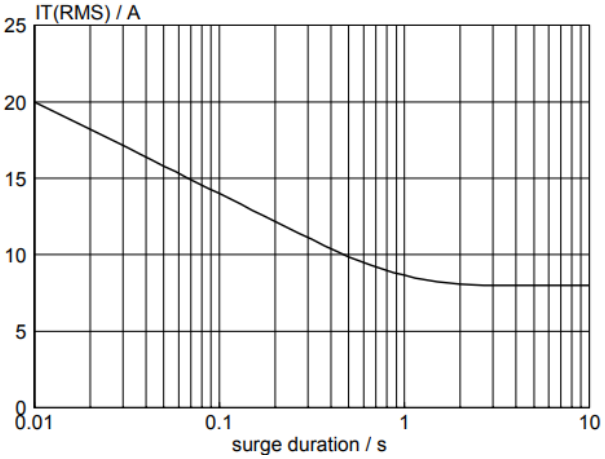


Fig.5. Maximum permissible repetitive rms on-state current IT(RMS), versus surge duration, for sinusoidal currents, f = 50 Hz; Tmb ≤ 102˚C.

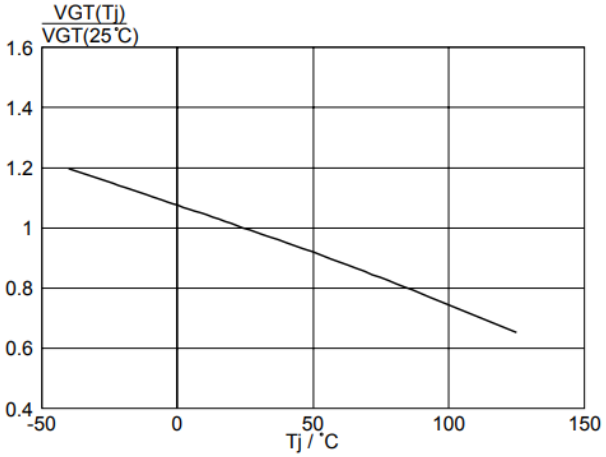


Fig.6. Normalised gate trigger voltage VGT(Tj)/ VGT(25°C), versus junction temperature Tj.

Typical Characteristics

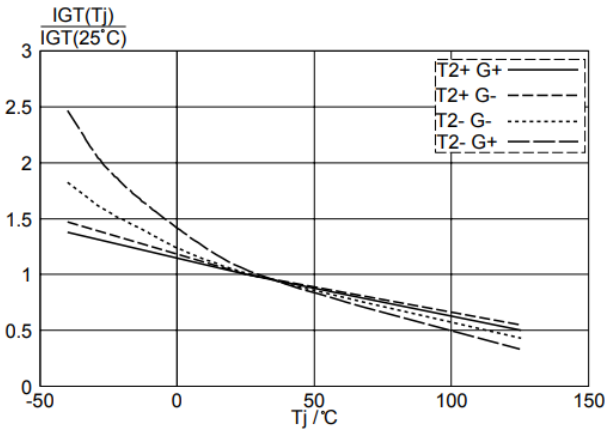


Fig.7. Normalised gate trigger current IGT(Tj) / IGT(25°C),versus junction temperature Tj.

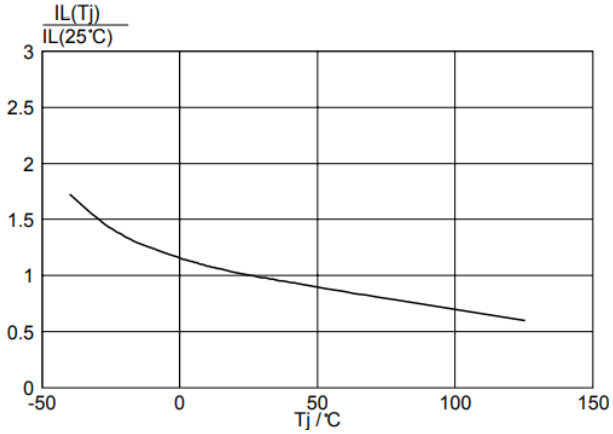


Fig.8. Normalised latching current IL(Tj) / IL(25°C), versus junction temperature Tj.

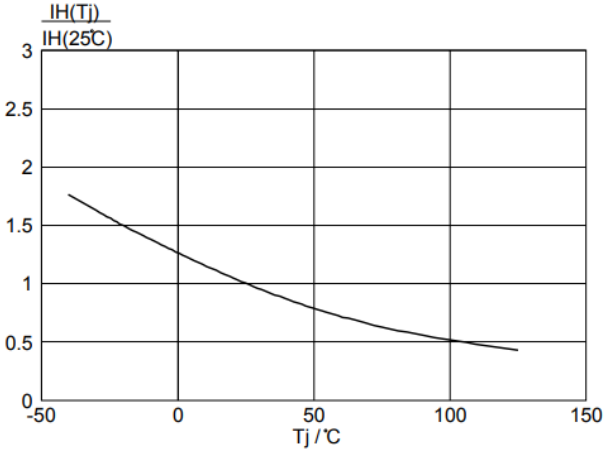


Fig.9. Normalised holding current IH(Tj) / IH(25°C), versus junction temperature Tj.

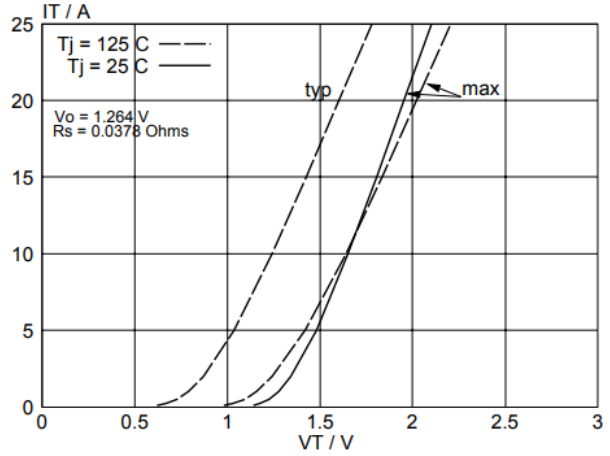


Fig.10. Typical and maximum on-state characteristic.

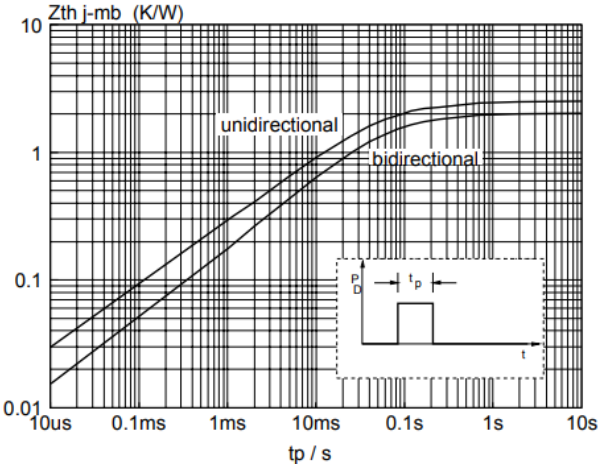


Fig.11. Transient thermal impedance Zth j-lead, versus pulse width tp.

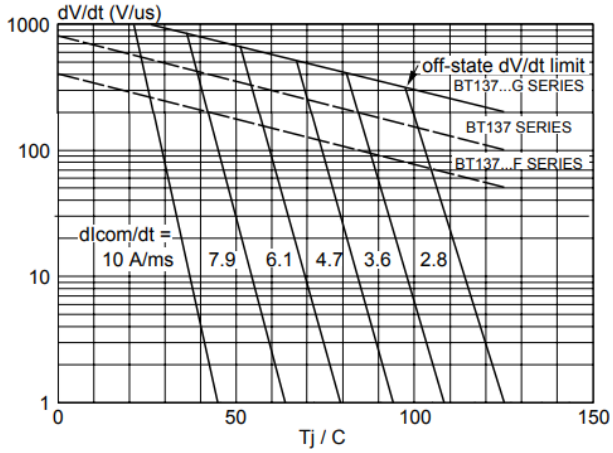
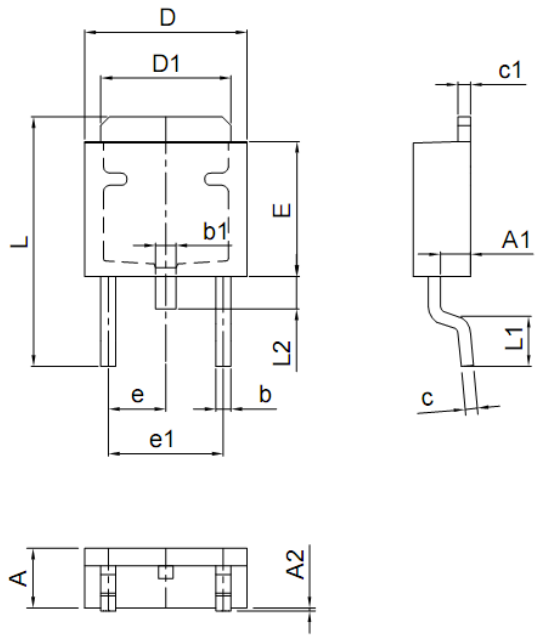


Fig.12. Typical, critical rate of rise of off-state voltage, dV/dt versus junction temperature Tj.

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