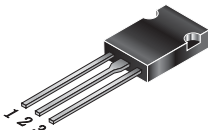


Description

Passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.

Symbol 		Simplified outline  SOT-82	
Pin	Description		
1	Main terminal 1 (T1)		
2	Main terminal 2 (T2)		
3	gate (G)		
TAB	Main terminal 2 (T2)		

Applications:

- ◆ Motor control
- ◆ Industrial and domestic lighting
- ◆ Heating
- ◆ Static switching

Features

- ◆ Blocking voltage to 600 V
- ◆ On-state RMS current to 4 A

SYMBOL	PARAMETER	Value	Unit
V_{DRM}	Repetitive peak off-state voltages	600	V
$I_T (RMS)$	RMS on-state current	4	A
I_{TSM}	Non-repetitive peak on-state current	25	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{th j-mb}$	Thermal resistance Junction to mounting base	Full cycle	-	-	3.0	K/W
		Half cycle	-	-	3.7	K/W
$R_{th j-a}$	Thermal resistance Junction to ambient	In free air	-	100	-	K/W

Limiting values in accordance with the Maximum system(IEC 134)

SYMBOL	PARAMETER	CONDITIONS		MIN	Value	UNIT	
V _{DRM}	Repetitive peak off-state Voltages			-	600	V	
I _{T(RMS)}	RMS on-state current	Full sine wave;T _{mb} ≤107℃		-	4	A	
I _{TSM}	Non-repetitive surge peak on-statecurrent	full sine wave;, T _J =25℃ prior to surge	t=20ms	-	25	A	
			t=16.7ms	-	27	A	
I ² t	I ² t for fusing	T=10ms		-	3.1	A ² S	
di _r /dt	Repetitive rate of rise of on-state current after triggering	I _{TM} =6A; I _G =0.2A; DI _G /dt=0.2A/ μ s					
				T2+G+	-	50	A/ μs
				T2+G-	-	50	A/ μs
				T2-G-	-	50	A/ μs
				T2-G+	-	10	A/ μs
I _{GM}	Peak gate current			-	2	A	
V _{GM}	Peak gate voltage			-	5	V	
P _{GM}	Peak gate power			-	5	W	
P _{G(AV)}	Average gate power	Over any 20 ms period		-	0.5	W	
T _{stg}	Storage temperature			-40	150	℃	
T _J	Operating junction Temperature			-	125	℃	

$T_j=25^{\circ}C$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT	
Static characteristics							
I _{GT1}	Gate trigger current	V _D =12V; I _T =0.1A					
			T2+G+	-	2.5	10	mA
			T2+G-	-	4.0	10	mA
			T2-G-	-	5.0	10	mA
			T2-G+	-	11	25	mA
I _L	Latching current	V _D =12V; I _{GT} =0.1A					
			T2+G+	-	3.0	15	mA
			T2+G-	-	10	20	mA
			T2-G-	-	2.5	15	mA
			T2-G+	-	4.0	20	mA
I _H	Holding current	V _D =12V; I _{GT} =0.1A	-	2.2	15	mA	
V _T	On-state voltage	I _T =5A	-	1.4	1.70	V	
V _{GT}	Gate trigger voltage	V _D =12V; I _T =0.1A	-	0.7	1.5	V	
		V _D =400V; I _T =0.1A; T _J =125℃	0.25	0.4	-	V	
I _D	Off-state leakage current	V _D =V _{DRM(max)} ; T _J =125℃	-	0.1	0.5	mA	

Dynamic Characteristics

dV_D/dt	Critical rate of rise of Off-state voltage	$V_{DM}=67\% V_{DRM(max)}$; $T_j=125^{\circ}C$; Exponential wave form; gate open circuit	-	50	-	$V/\mu s$
t_{gt}	Gate controlled turn-on time	$I_{TM}=6A$; $V_D=V_{DRM(max)}$; $I_G=0.1A$; $DI_G/dt=5A/\mu s$	-	2	-	μs

Description

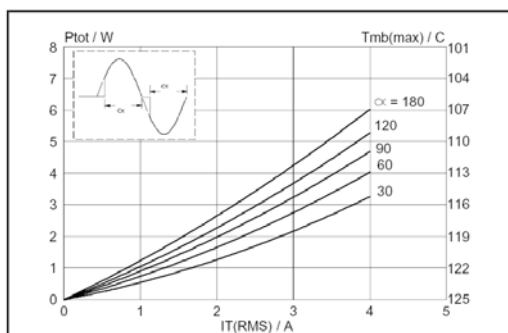


Fig. 1. Maximum on-state dissipation, P_{tot} , versus rms on-state current, $I_{T(RMS)}$, where α = conduction angle.

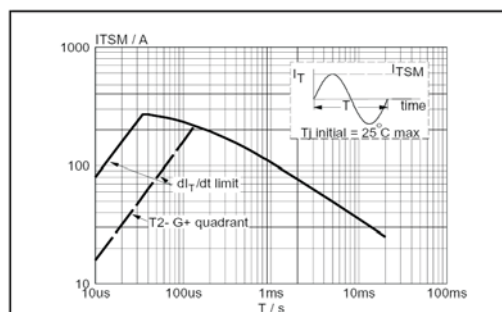


Fig. 2. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus pulse width t_p , for sinusoidal currents, $t_p \leq 20ms$.

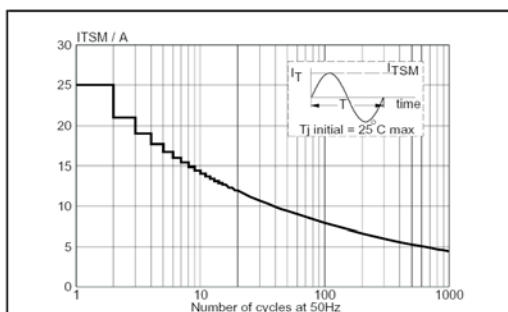


Fig. 3. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus number of cycles, for sinusoidal currents, $f = 50 Hz$.

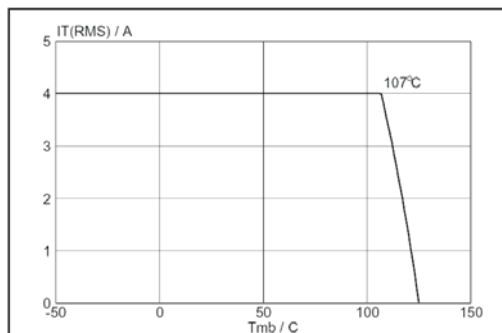


Fig. 4. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb} .

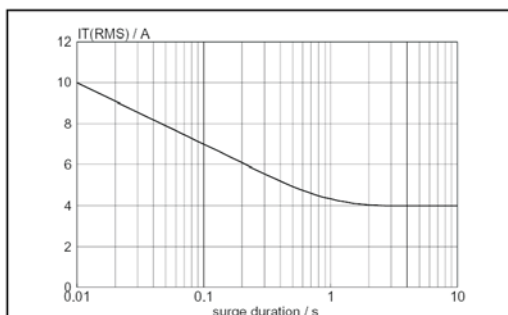


Fig. 5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, $f = 50 Hz$; $T_{mb} \leq 107^\circ C$.

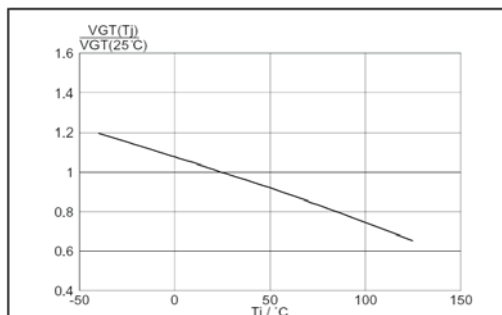
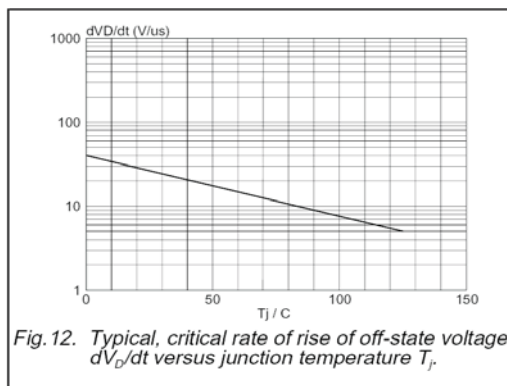
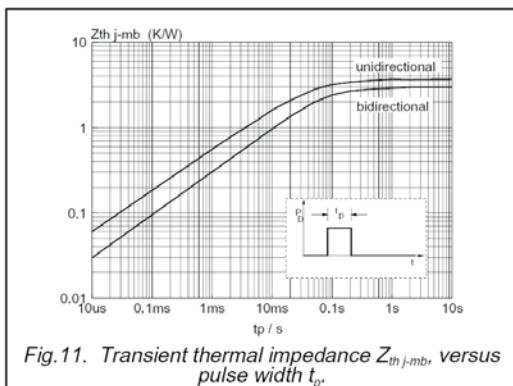
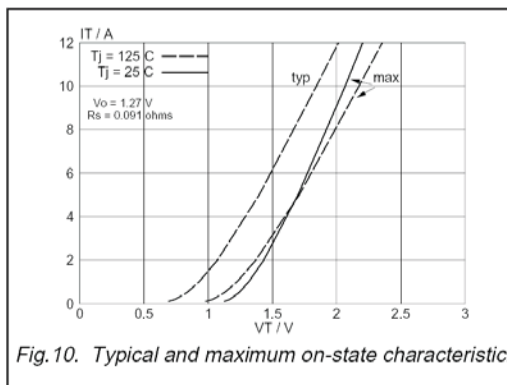
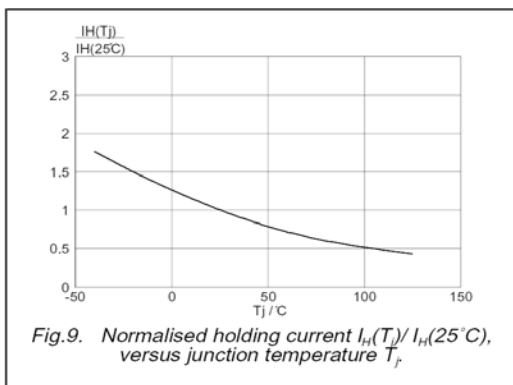
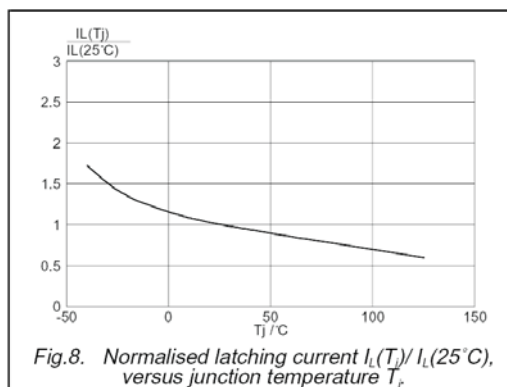
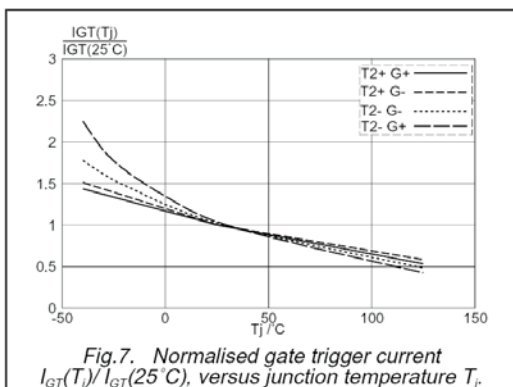


Fig. 6. Normalised gate trigger voltage $V_{GT}(T_j) / V_{GT}(25^\circ C)$, versus junction temperature T_j .

Description



MECHANICAL DATA

Dimensions in mm

Net Mass: 0.8 g

SOT-82

