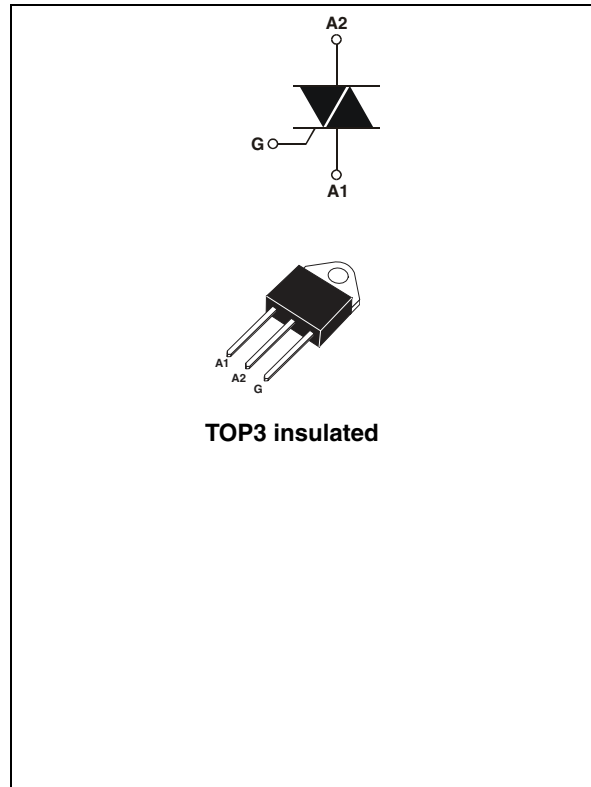


Features

- High current TRIAC
- Low thermal resistance with clip bonding
- High commutation capability

Applications

- On/off function in static relays, heating regulation, induction motor starting circuits
- Phase control operations in light dimmers, motor speed controllers, and similar



1 Characteristics

Table 2. Absolute maximum ratings

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	On-state rms current (full sine wave)	TOP3	$T_c = 95\text{ }^\circ\text{C}$	40	A
I_{TSM}	Non repetitive surge peak on-state current (full cycle, T_j initial = $25\text{ }^\circ\text{C}$)	$F = 50\text{ Hz}$	$t = 20\text{ ms}$	400	A
		$F = 60\text{ Hz}$	$t = 16.7\text{ ms}$	420	
I^2t	I^2t Value for fusing	$t_p = 10\text{ ms}$		1000	A^2s
di/dt	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$	$F = 120\text{ Hz}$	$T_j = 125\text{ }^\circ\text{C}$	50	$\text{A}/\mu\text{s}$
V_{DSM}/V_{RSM}	Non repetitive surge peak off-state voltage	$t_p = 10\text{ ms}$	$T_j = 25\text{ }^\circ\text{C}$	$V_{DSM}/V_{RSM} + 100$	V
I_{GM}	Peak gate current	$t_p = 20\text{ }\mu\text{s}$	$T_j = 125\text{ }^\circ\text{C}$	8	A
$P_{G(AV)}$	Average gate power dissipation		$T_j = 125\text{ }^\circ\text{C}$	1	W
T_{stg} T_j	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 125	$^\circ\text{C}$

Table 3. Electrical characteristics ($T_j = 25\text{ }^\circ\text{C}$, unless otherwise specified)

Symbol	Parameter			Value	Unit
$I_{GT}^{(1)}$	$V_D = 12\text{ V}$ $R_L = 33\text{ }\Omega$	I - II - III	MAX.	50	mA
		IV		100	
V_{GT}		ALL	MAX.	1.3	V
V_{GD}	$V_D = V_{DRM}$ $R_L = 3.3\text{ k}\Omega$ $T_j = 125\text{ }^\circ\text{C}$	ALL	MIN.	0.2	V
$I_H^{(2)}$	$I_T = 500\text{ mA}$		MAX.	80	mA
I_L	$I_G = 1.2 I_{GT}$	I - III - IV	MAX.	70	mA
		II		160	
$dV/dt^{(2)}$	$V_D = 67\% V_{DRM}$ gate open	$T_j = 125\text{ }^\circ\text{C}$	MIN.	500	$\text{V}/\mu\text{s}$
$(dV/dt)_c^{(2)}$	$(di/dt)_c = 20\text{ A/ms}$	$T_j = 125\text{ }^\circ\text{C}$	MIN.	10	$\text{V}/\mu\text{s}$

1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.
2. for both polarities of A2 referenced to A1

Table 4. Static characteristics

Symbol	Test conditions			Value	Unit	
$V_T^{(1)}$	$I_{TM} = 60 \text{ A}$	$t_p = 380 \mu\text{s}$	$T_j = 25^\circ\text{C}$	MAX.	1.55	V
$V_{T0}^{(2)}$	Threshold voltage		$T_j = 125^\circ\text{C}$	MAX.	0.85	V
$R_d^{(2)}$	Dynamic resistance		$T_j = 125^\circ\text{C}$	MAX.	10	m Ω
I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM}$		$T_j = 25^\circ\text{C}$	MAX.	5	μA
			$T_j = 125^\circ\text{C}$		5	mA

1. Minimum I_{GT} is guaranteed at 5% of $I_{GT \text{ max.}}$
2. for both polarities of A2 referenced to A1

Table 5. Thermal resistance

Symbol	Test conditions		Value	Unit
$R_{th(j-c)}$	Junction to case (AC)	TOP3 insulated	0.9	$^\circ\text{C/W}$
		TOP3	0.6	
$R_{th(j-a)}$	Junction to ambient	TOP3 / TOP3 insulate	50	$^\circ\text{C/W}$

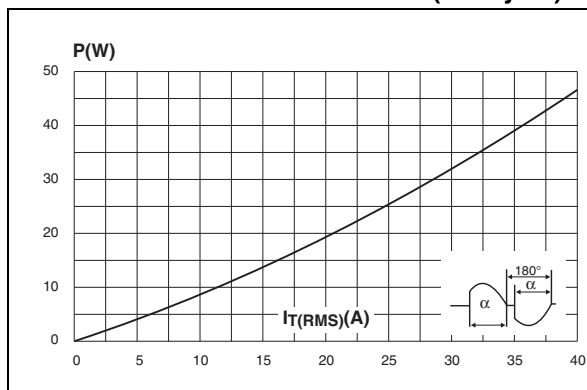
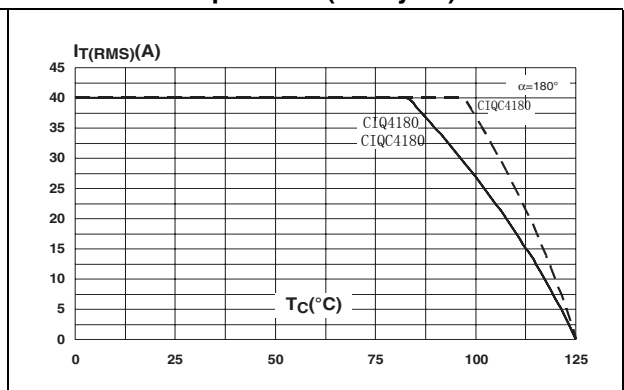
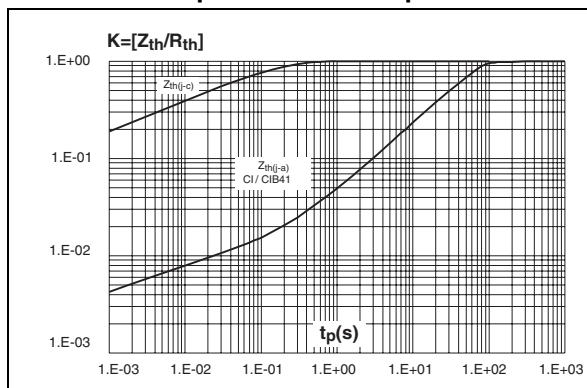
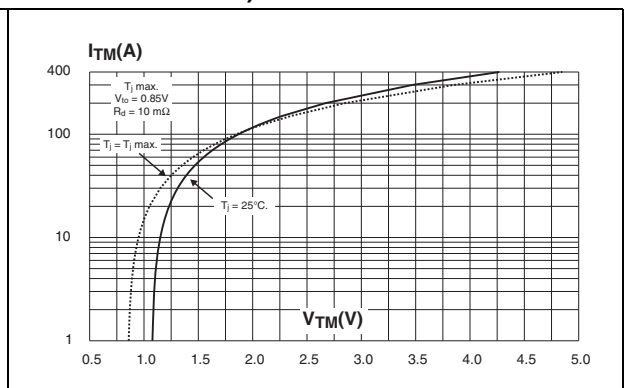
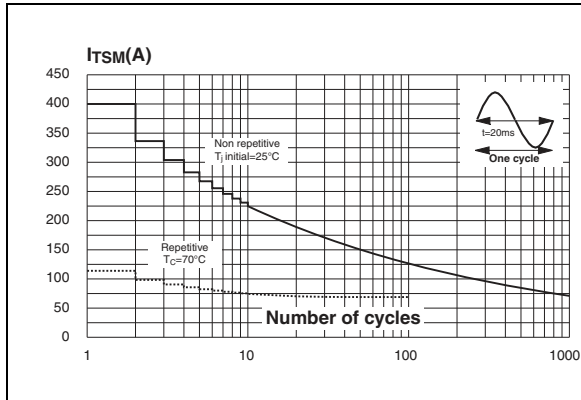
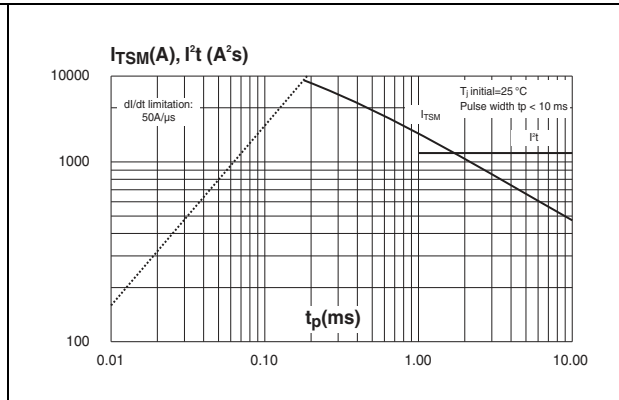
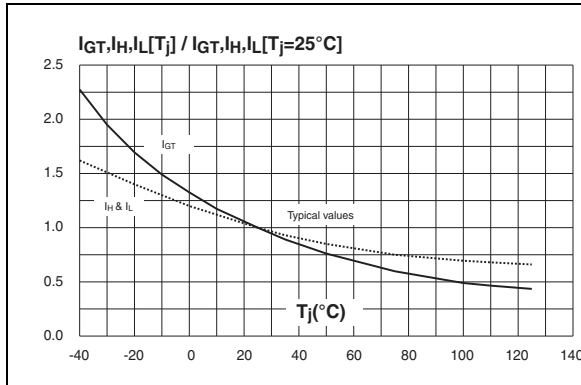
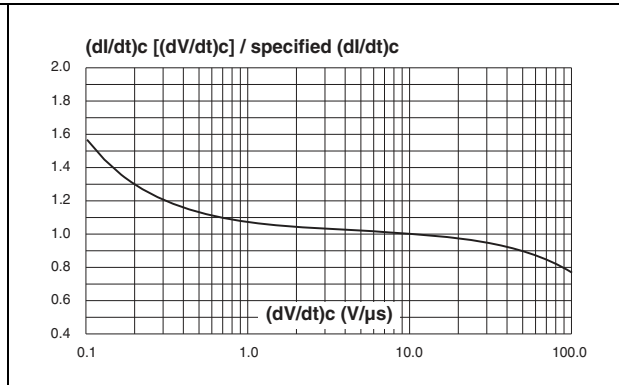
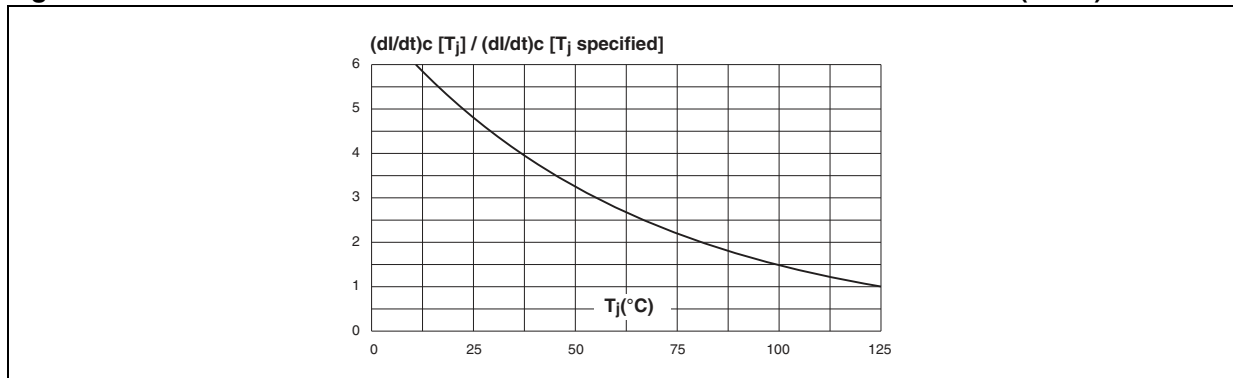
Figure 1. Maximum power dissipation versus on-state rms current (full cycle)

Figure 2. On-state rms current versus case temperature (full cycle)

Figure 3. Relative variation of thermal impedance versus pulse duration

Figure 4. On-state characteristics (maximum values)


Figure 5. Surge peak on-state current versus number of cycles

Figure 6. Non-repetitive surge peak on-state current for a sinusoidal pulse and corresponding value of I^2t

Figure 7. Relative variation of gate trigger, holding and latching current versus junction temperature

Figure 8. Relative variation of critical rate of decrease of main current versus $(dV/dt)c$ (typical values)

Figure 9. Relative variation of critical rate of decrease of main current versus $(dV/dt)c$


2 Package information

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.4	4.6	0.173	0.181
B	1.45	1.55	0.057	0.061
C	14.35	15.60	0.565	0.614
D	0.5	0.7	0.020	0.028
E	2.7	2.9	0.106	0.114
F	15.8	16.5	0.622	0.650
G	20.4	21.1	0.815	0.831
H	15.1	15.5	0.594	0.610
J	5.4	5.65	0.213	0.222
K	3.4	3.65	0.134	0.144
ØL	4.08	4.17	0.161	0.164
P	1.20	1.40	0.047	0.055
R	4.60 typ.		0.181 typ.	

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