$I_{T(RMS)}$ = 6 A

V_{DRM}/V_{RRM} = 800 V

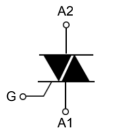
I_{GT} (1) = 25 to 50 mA

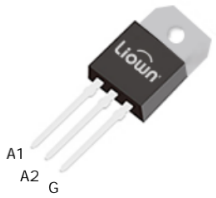
LTR06A,LTR06B
6A Triacs

Description

Available either in through-hole or surface-mount packages, the LTR06A and LTR06B triac series is suitable for general purpose AC switching. They can be used as an ON/OFF function in applica- tions such as static relays, heating regulation, in- duction motor starting circuits... or for phase control operation in light dimmers, motor speed controllers,.

The snubberless and logic level versions are specially recommended for use on inductive loads, thanks to their high commutation performances.





TO-220AB Insulated
(LTR06A)

Absolute Maximum Ratings

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	TO-220AB	T_c = 110°C	6	A
		TO-220AB Ins.	T_c = 105°C		
I_{TSM}	Non repetitive surge peak on-state current (full cycle, T_j initial = 25°C)	F = 50 Hz	t = 20 ms	60	A
		F = 60 Hz	t = 16.7 ms	63	
I^2t	I^2t Value for fusing	t_p = 10 ms		21	A^2s
dI/dt	Critical rate of rise of on-state current I_G = 2 x I_{GT} , $t_r \leq$ 100 ns	F = 120 Hz	T_j = 125°C	50	A/µs
I_{GM}	Peak gate current	t_p = 20 µs	T_j = 125°C	4	A
$P_{G(AV)}$	Average gate power dissipation		T_j = 125°C	1	W
T_{stg} T_j	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 125	°C

Electrical Characteristics (T_j = 25°C, unless otherwise specified)

■ **SNUBBERLESS and Logic Level (3 quadrants)**

Symbol	Test Conditions	Quadrant		LTR06A / LTR06B				Unit
				TW	SW	CW	BW	
I_{GT} (1)	V_D = 12 V R_L = 30 Ω	I - II - III	MAX.	25	30	35	50	mA
V_{GT}		I - II - III	MAX.	1.3				V
V_{GD}	$V_D = V_{DRM}$ R_L = 3.3 kΩ T_j = 125°C	I - II - III	MIN.	0.2				V
I_H (2)	I_T = 100 mA		MAX.	10	15	35	50	mA
I_L	I_G = 1.2 I_{GT}	I - III	MAX.	10	25	50	70	mA
		II		15	30	60	80	
dV/dt (2)	V_D = 67 %V_{DRM} gate open T_j = 125°C		MIN.	20	40	400	1000	V/µs
(dI/dt)c (2)	(dV/dt)c = 0.1 V/µs T_j = 125°C		MIN.	2.7	3.5	-	-	A/ms
	(dV/dt)c = 10 V/µs T_j = 125°C			1.2	2.4	-	-	
	Without snubber T_j = 125°C			-	-	3.5	5.3	

■ **Standard (4 quadrants)**

Symbol	Test Conditions	Quadrant		LTR06A / LTR06B		Unit
				C	B	
I_{GT} (1)	V_D = 12 V R_L = 30 Ω	I - II - III	MAX.	25	50	mA
		IV		50	80	
V_{GT}		ALL	MAX.	1.3		V
V_{GD}	$V_D = V_{DRM}$ R_L = 3.3 kΩ T_j = 125°C	ALL	MIN.	0.2		V
I_H (2)	I_T = 500 mA		MAX.	25	50	mA
I_L	I_G = 1.2 I_{GT}	I - III - IV	MAX.	40	50	mA
		II		80	100	
dV/dt (2)	V_D = 67 %V_{DRM} gate open T_j = 125°C		MIN.	200	400	V/µs
(dV/dt)c (2)	(dI/dt)c = 2.7 A/ms T_j = 125°C		MIN.	5	10	V/µs

Static Characteristics

Symbol	Test Conditions			Value	Unit
V_{TM} (2)	I_{TM} = 8.5 A t_p = 380 µs	T_j = 25°C	MAX.	1.35	V
V_{t0} (2)	Threshold voltage	T_j = 125°C	MAX.	0.85	V
R_d (2)	Dynamic resistance	T_j = 125°C	MAX.	60	mΩ
I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM}$	T_j = 25°C	MAX.	5	µA
		T_j = 125°C		1	mA

Note 1: minimum I_{GT} is guaranted at 5% of I_{GT} max.

Note 2: for both polarities of A2 referenced to A1.

Thermal resistance

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case (AC)	TO-220AB	1.8	°C/W
		TO-220AB Insulated	2.7	
$R_{th(j-a)}$	Junction to ambient	TO-220AB TO-220AB Insulated	60	°C/W

Figure 1: Maximum power dissipation versus RMS on-state current (full cycle)

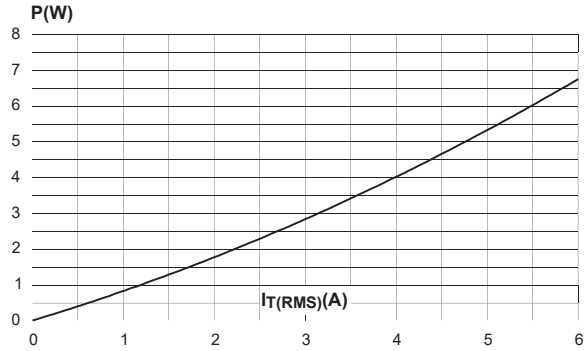


Figure 2: RMS on-state current versus case temperature (full cycle)

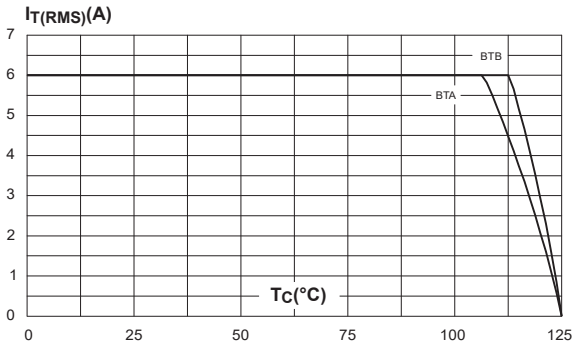


Figure 3: Relative variation of thermal impedance versus pulse duration

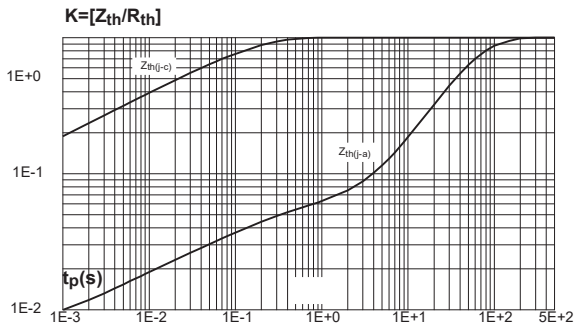


Figure 4: On-state characteristics (maximum values)

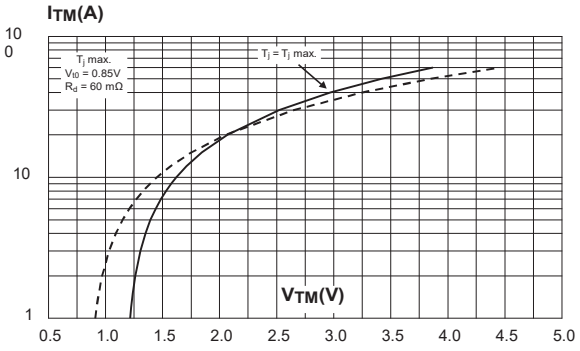


Figure 5: Surge peak on-state current versus number of cycles

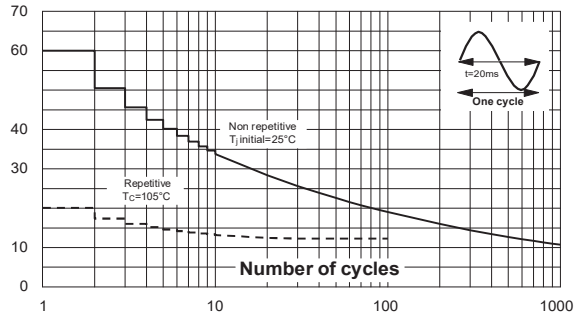


Figure 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p < 10 ms and corresponding value of I^2t

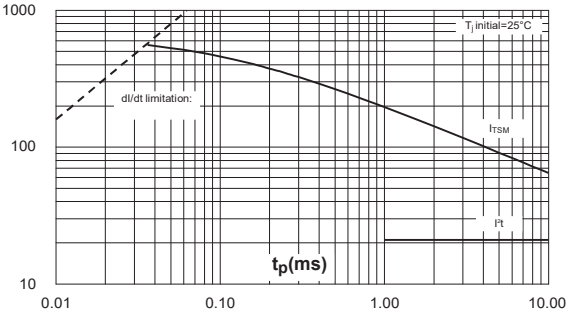


Figure 7: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values)

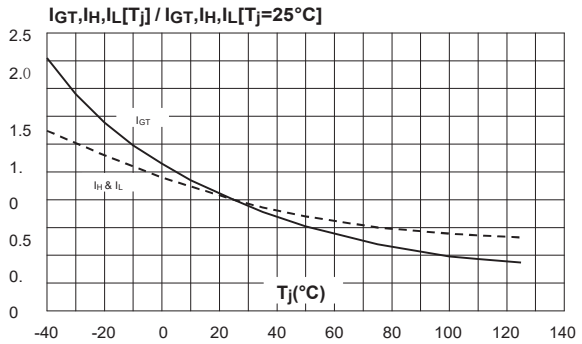


Figure 8: Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values) (Snubberless & logic level types)

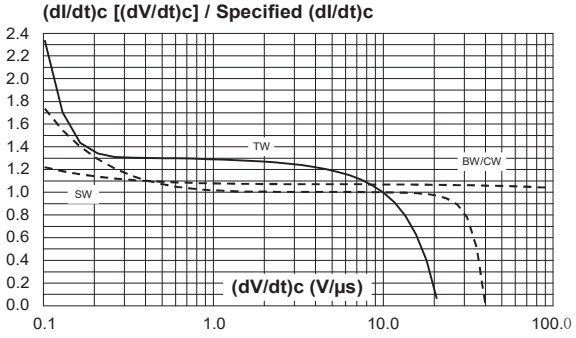


Figure 9: Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values) (Standard types)

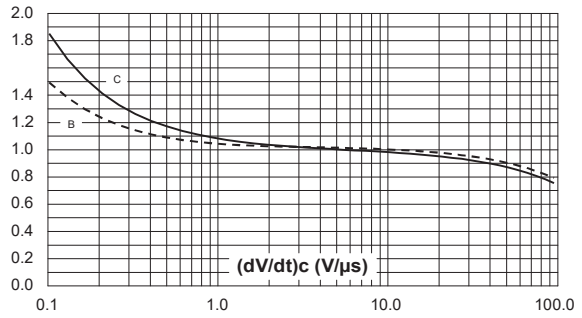


Figure 10: Relative variation of critical rate of decrease of main current versus junction temperature