TIC236A, TIC236B, TIC236C, TIC236D, TIC236E, TIC236M, TIC236N, TIC236S

SILICON TRIACS

- High current triacs
- 12 A RMS
- Glass Passivated Wafer
- 100 V to 800 V Off-State Voltage
- Max I_{GT} of 50 mA (Quadrants 1-3)
- Compliance to ROHS

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value								Unit
		A	B	C	D	E	M	S	N	
V_{DRM}	Repetitive peak off-state voltage (see Note1)	100	200	300	400	500	600	700	800	V
$I_{T(RMS)}$	Full-cycle RMS on-state current at (or below) 70°C case temperature (see note2)	12								A
I_{TSM}	Peak on-state surge current full-sine-wave (see Note3)	100								A
I_{GM}	Peak gate current	± 1								A
T_C	Operating case temperature range	-40 to +110								°C
T_{stg}	Storage temperature range	-40 to +125								°C
T_L	Lead temperature 1.6 mm from case for 10 seconds	230								°C

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{\partial JC}$	Junction to case thermal resistance	≤ 2	°C/W
$R_{\partial JA}$	Junction to free air thermal resistance	≤ 62.5	

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
I_{DRM}	Repetitive peak off-state current	V_D = Rated V_{DRM}, , I_G = 0 T_C = 110°C	-	-	±2	mA
I_{GT}	Gate trigger current	V_{supply} = +12 V†, R_L = 10 Ω, $t_{p(g)}$ = > 20 µs	-	12	50	mA
		V_{supply} = +12 V†, R_L = 10 Ω, $t_{p(g)}$ = > 20 µs	-	-19	-50	
		V_{supply} = -12 V†, R_L = 10 Ω, $t_{p(g)}$ = > 20 µs	-	-16	-50	
		V_{supply} = -12 V†, R_L = 10 Ω, $t_{p(g)}$ = > 20 µs	-	34	-	
V_{GT}	Gate trigger voltage	V_{supply} = +12 V†, R_L = 10 Ω, $t_{p(g)}$ = > 20 µs	-	0.8	2	V
		V_{supply} = +12 V†, R_L = 10 Ω, $t_{p(g)}$ = > 20 µs	-	-0.8	-2	
		V_{supply} = -12 V†, R_L = 10 Ω, $t_{p(g)}$ = > 20 µs	-	-0.8	-2	
		V_{supply} = -12 V†, R_L = 10 Ω, $t_{p(g)}$ = > 20 µs	-	0.9	2	
I_H	Holding current	V_{supply} = +12 V†, I_G = 0 initiating I_{TM} = 100 mA	-	22	40	mA
		V_{supply} = -12 V†, I_G = 0 initiating I_{TM} = -100 mA	-	-22	-40	
I_L	Latching current	V_{supply} = +12 V† (seeNote5)	-	-	80	mA
		V_{supply} = -12 V† (seeNote5)	-	-	-80	
V_{TM}	Peak on-state voltage	I_{TM} = ± 17 A, I_G = 50 mA (see Note4)	-	±1.4	±1.7	V
dv/dt	Critical rate of rise of off-state voltage	V_{DRM} = Rated V_{DRM}, I_G = 0 T_C = 110°C	-	±400	-	V/µs
di/dt	Critical rate of rise of off-state current	V_{DRM} = Rated V_{DRM}, I_{GT} = 50 mA, di_G/dt = 50mA/µs, T_C = 110°C	-	±100	-	A/µs
$dv/dt_{©}$	Critical rise of communication voltage	V_{DRM} = Rated V_{DRM}, I_T = 1.4 $I_{T(RMS)}$ di/dt = 0.5 $I_{T(RMS)}$/ms, T_C = 80°C	±1.2	±9	-	V/µs

† All voltages are whit respect to Main Terminal 1.

Note1: These values apply bidirectionally for any value of resistance between the gate and Main Terminal 1.

Note2: This value applies for 50-Hz full-sine-wave operation with resistive load. Above 70°C derate linearly to 110°C case temperature at the rate of 300 mA/°C.

Note3: This value applies for one 50-Hz full-sine-wave when the device is operating at (or below) the rated value of peak reverse voltage and on-state current. Surge may be repeated after the device has returned to original thermal equilibrium.

Note4: This parameters must be measured using pulse techniques, t_W = ≤1ms, duty cycle ≤ 2 %, voltage-sensing contacts, separate from the current-carrying contacts are located within 3.2mm from de device body.

Note5: he triacs are triggered by a 15-V (open circuit amplitude) pulse supplied by a generator with the following characteristics : R_G = 100Ω, $_{tp(g)}$ = 20 µs, t_r = ≤ 15ns, f = 1 kHz.

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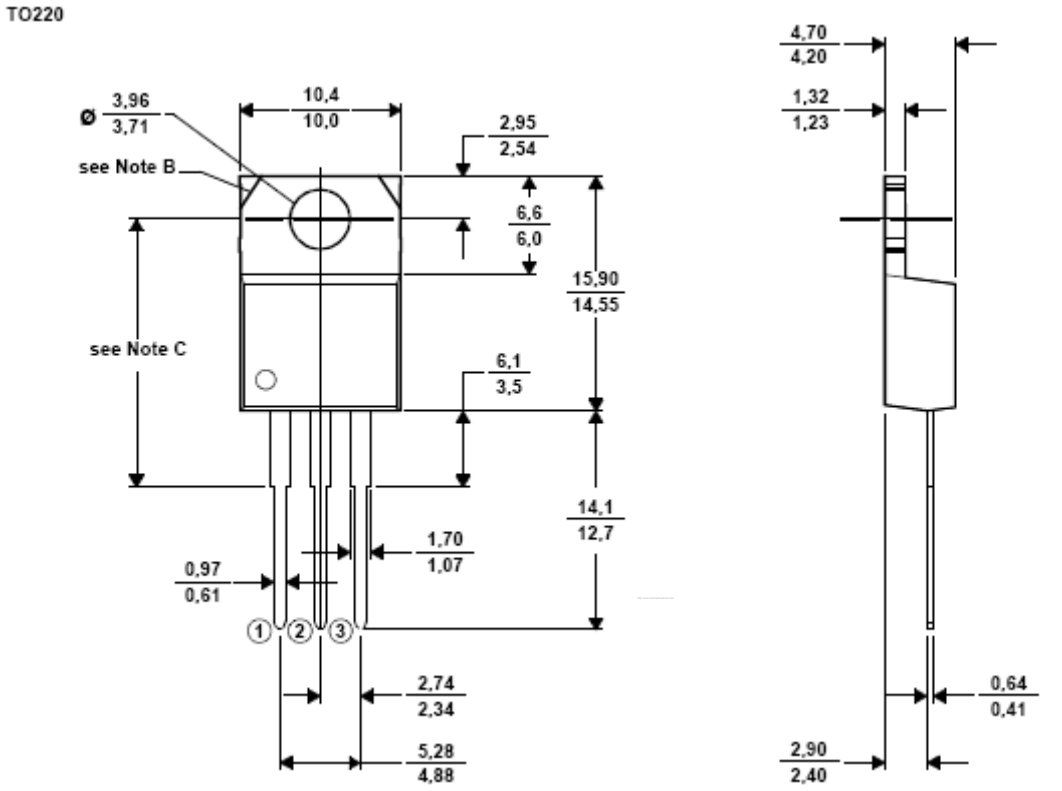
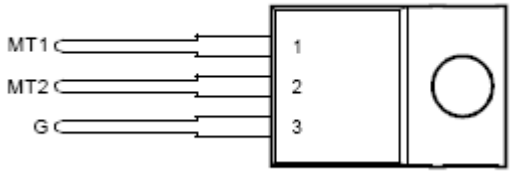
MECHANICAL DATA CASE TO-220

TO220



TO-220 PACKAGE
(TOP VIEW)



Pin 2 is in electrical contact with the mounting base.

Pin 1 :	Main Terminal 1
Pin 2 :	Main Terminal 2
Pin 3 :	Gate

September 2012