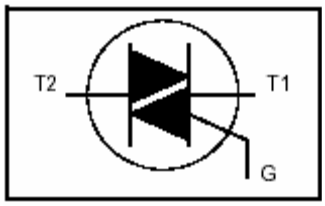
COMSET SEMICONDUCTORS

BT139 Series

TRIACS

FEATURE

Glass passivated triacs in a plastic TO220 package.
They are 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.
Compliance to RoHS.



ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value			Unit
		BT139-500	BT139-600	BT139-800	
V_{DRM}	Repetitive peak off-state voltage	500	600	800	V
V_{RRM}	Repetitive peak reverse voltage	500	600	800	
$I_{T(RMS)}$	RMS on-state current	16			A
I_{TSM}	Non-repetitive peak on-state current	140			A
P_{GM}	Peak gate power	5			W
$PG_{(AV)}$	Average gate power	0.5			W
T_{stg}	Storage temperature range	-45 to +150			°C
T_j	Operating junction temperature	110			°C

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{\partial j\text{-}mb}$	Thermal resistance junction to mounting base	≤ 1.2	°C/W
$R_{\partial JA}$	Thermal resistance junction to ambient	≤ 60	

BT139 Series

ELECTRICAL CHARACTERISTICS

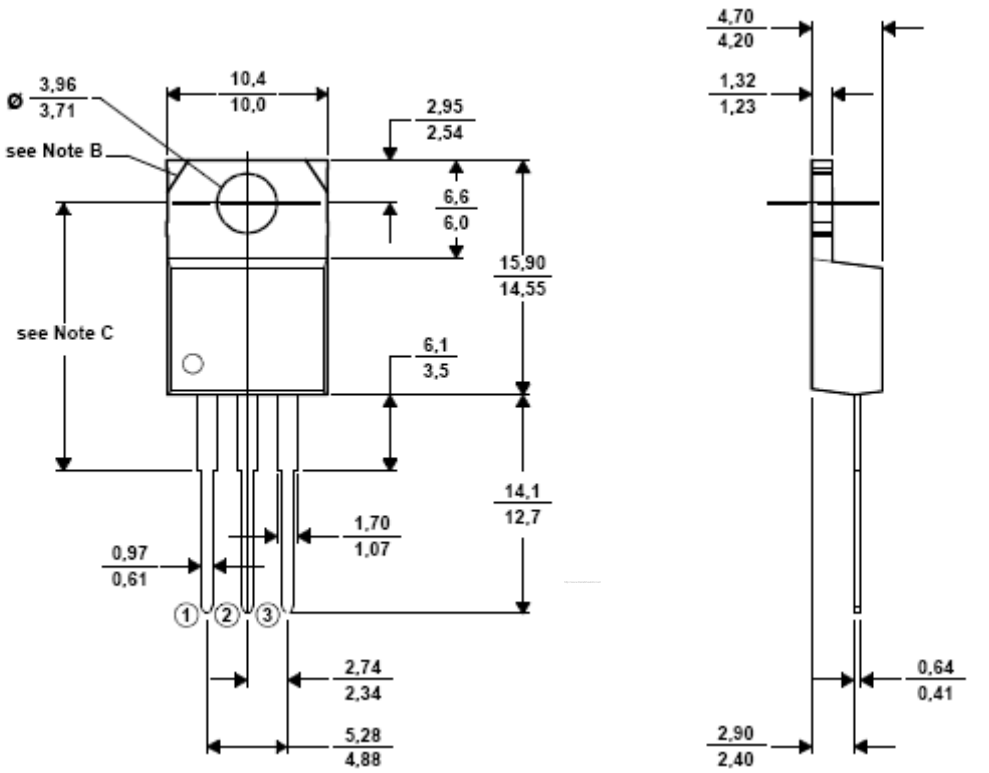
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
V_{DRM}	Repetitive peak off-state voltage	I_D = 0.1 mA	BT139-500	500	-	-	V
			BT139-600	600	-	-	
			BT139-800	800	-	-	
V_{RRM}	Repetitive peak reverse voltage	I_D = 0.5 mA	BT139-500	500	-	-	
			BT139-600	600	-	-	
			BT139-800	800	-	-	
I_{GT}	Gate trigger current	V_D = 12 V R_L = 100 Ω	T2+ G+	-	-	30	mA
			T2+ G-	-	-	30	
			T2- G-	-	-	30	
			T2- G+	-	-	100	
V_{GT}	Gate trigger voltage	V_D = 12 V R_L = 100 Ω	T2+ G+	-	-	1.5	V
			T2+ G-	-	-	1.5	
			T2- G-	-	-	1.5	
			T2- G+	-	-	1.8	
I_L	Latching current	V_D = 12 V I_{GT} = 100 mA	T2+ G+	-	-	60	mA
			T2+ G-	-	-	90	
			T2- G-	-	-	60	
			T2- G+	-	-	90	
I_H	Holding current	I_T = 200 mA, I_{GT} = 50 mA		-	-	50	mA
I_D	Off-state leakage current	$V_D = V_{DRM\ max}$ T_j = 125°C		-	-	0.5	mA
V_T	On-state voltage	I_T = 10 A		-	-	1.65	V
dV_D/dt	Critical rate of rise of off-state voltage	V_{DM} = 67% V_{DRMmax} T_j = 125°C Exponential waveform; gate open circuit		100	250	-	V/µs
dV_{COM}/dt	Critical rate of rise of change commutatating current	V_D = 400 V; T_j = 95 °C dI_{com}/dt = 7.2 A/ms I_T = 16 A gate open circuit		-	20	-	V/µs
t_{gt}	Gate controlled turn-on time	I_{TM} = 20 A; $V_D = V_{DRMmax}$ I_G = 0.1 A; dI_G/dt = 5 A/µs		-	2	-	µs

BT139 Series

MECHANICAL DATA CASE TO-220

TO220



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

Revised August 2012