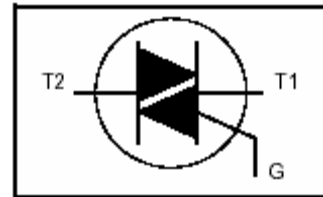


BT138 Series

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
		BT138-500	BT138-600	BT138-800	
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	12			A
I_{TSM}	Non-repetitive peak on-state current	95			A
P_{GM}	Peak gate power	5			W
$P_{G(AV)}$	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
$R_{\theta j-mb}$	Thermal resistance junction to mounting base	≤ 1.5	°C/W
$R_{\theta JA}$	Thermal resistance junction to ambient	≤ 60	

BT138 Series

ELECTRICAL CHARACTERISTICS

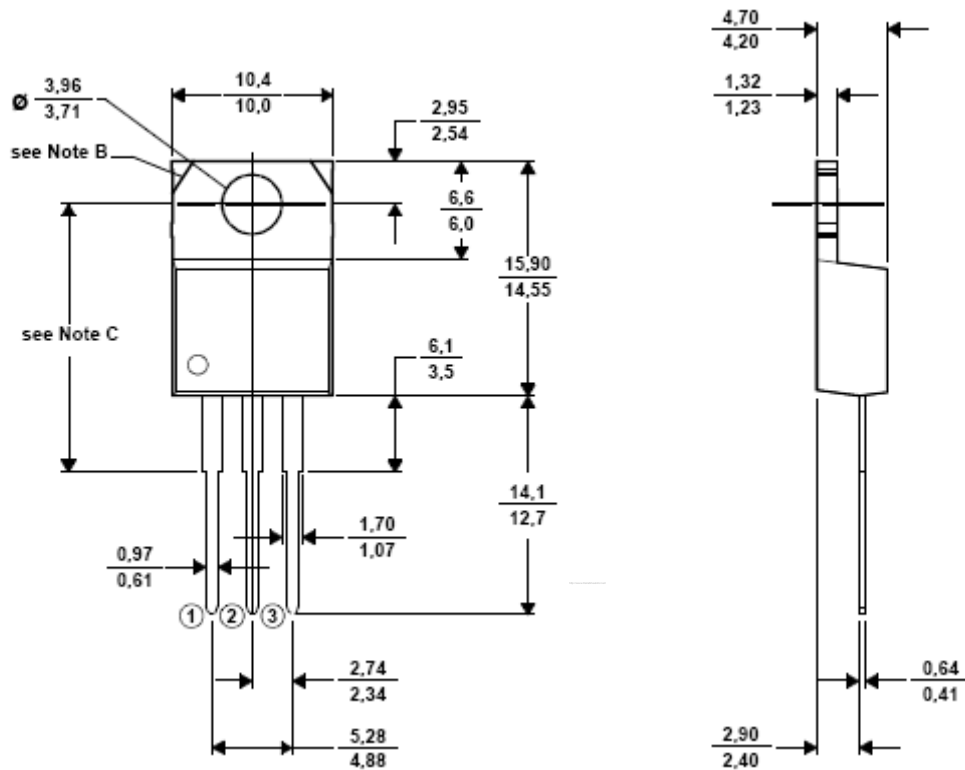
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
V_{DRM}	Repetitive peak off-state voltage	$I_{\text{D}} = 0.1 \text{ mA}$	BT137-500	500	-	-	V
			BT137-600	600	-	-	
			BT137-800	800	-	-	
V_{RRM}	Repetitive peak reverse voltage	$I_{\text{D}} = 0.5 \text{ mA}$	BT137-500	500	-	-	
			BT137-600	600	-	-	
			BT137-800	800	-	-	
I_{GT}	Gate trigger current	$V_{\text{D}} = 12 \text{ V}$ $R_{\text{L}} = 100 \text{ }\Omega$	T2+ G+	-	-	30	mA
			T2+ G-	-	-	30	
			T2- G-	-	-	30	
			T2- G+	-	-	100	
V_{GT}	Gate trigger voltage	$V_{\text{D}} = 12 \text{ V}$ $R_{\text{L}} = 100 \text{ }\Omega$	T2+ G+	-	-	1.5	V
			T2+ G-	-	-	1.5	
			T2- G-	-	-	1.5	
			T2- G+	-	-	1.8	
I_{L}	Latching current	$V_{\text{D}} = 12 \text{ V}$ $I_{\text{GT}} = 100 \text{ mA}$	T2+ G+	-	-	60	mA
			T2+ G-	-	-	90	
			T2- G-	-	-	60	
			T2- G+	-	-	90	
I_{H}	Holding current	$I_{\text{T}} = 200 \text{ mA}$, $I_{\text{GT}} = 50 \text{ mA}$		-	-	50	mA
I_{D}	Off-state leakage current	$V_{\text{D}} = V_{\text{DRM max}}$ $T_{\text{j}} = 125^{\circ}\text{C}$		-	-	0.5	mA
V_{T}	On-state voltage	$I_{\text{T}} = 15 \text{ A}$		-	-	1.7	V
dV_{D}/dt	Critical rate of rise of off-state voltage	$V_{\text{DM}} = 67\% V_{\text{DRMmax}}$ $T_{\text{j}} = 125^{\circ}\text{C}$ Exponential waveform; gate open circuit		100	250	-	V/ μs
dV_{COM}/dt	Critical rate of rise of change commutatating current	$V_{\text{D}} = 400 \text{ V}$; $T_{\text{j}} = 95^{\circ}\text{C}$ $di_{\text{com}}/dt = 5.4 \text{ A/ms}$; $I_{\text{T}} = 12 \text{ A}$ gate open circuit		-	20	-	V/ μs
t_{gt}	Gate controlled turn-on time	$I_{\text{TM}} = 16 \text{ A}$; $V_{\text{D}} = V_{\text{DRMmax}}$ $I_{\text{G}} = 0.1 \text{ A}$; $dI_{\text{G}}/dt = 5 \text{ A}/\mu\text{s}$		-	2	-	μs

BT138 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

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may results from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.