



## BT152 Series

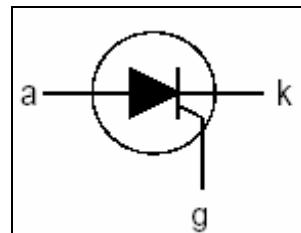
### THYRISTORS

#### FEATURE

Glass passivated thyristors in a plastic TO220 package. They are intended for use in applications requiring high bidirectional 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
		BT152-400R	BT152-600R	BT152-800R	
$V_{DRM}$	Repetitive peak off-state voltage	450	650	800	V
$V_{RRM}$	Repetitive peak reverse voltage	450	650	800	
$I_{T(RMS)}$	RMS on-state current	20			A
$I_{T(AV)}$	Average on-state current	13			A
$I_{TSM}$	Non-repetitive peak on-state current	200			A
$P_{GM}$	Peak gate power	20			W
$P_{G(AV)}$	Average gate power	0.5			W
$T_{stg}$	Storage temperature range	-40 to +150			°C
$T_j$	Operating junction temperature	125			°C

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{\theta j-mb}$	Thermal resistance junction to mounting base	$\leq 1.1$	°C/W
$R_{\theta JA}$	Thermal resistance junction to ambient	$\leq 60$	



## BT152 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		BT152-400R	450	-	-
			BT152-600R	650	-	-
			BT152-800R	800	-	-
$V_{RRM}$	Repetitive peak reverse voltage		BT152-400R	450	-	-
			BT152-600R	650	-	-
			BT152-800R	800	-	-
$I_{GT}$	Gate trigger current	$V_D = 12 \text{ V}; I_T = 100 \text{ mA}$	-	-	32	mA
$V_{GT}$	Gate trigger voltage	$V_D = 12 \text{ V}; I_T = 100 \text{ mA}$	-	-	1.5	V
$I_L$	Latching current	$V_D = 12 \text{ V}; I_{GT} = 100 \text{ mA}$	-	-	80	mA
$I_H$	Holding current	$V_D = 12 \text{ V}; I_{GT} = 100 \text{ mA}$	-	-	60	mA
$I_D$	Off-state current	$V_D = V_{DRM \max}; T_j = 125^\circ\text{C}$	-	-	1	mA
$I_R$	Reverse current	$V_R = V_{RRM \max}; T_j = 125^\circ\text{C}$	-	-	1	mA
$V_T$	On-state voltage	$I_T = 40 \text{ A}$	-	-	1.75	V

### DYNAMIC CHARACTERISTICS

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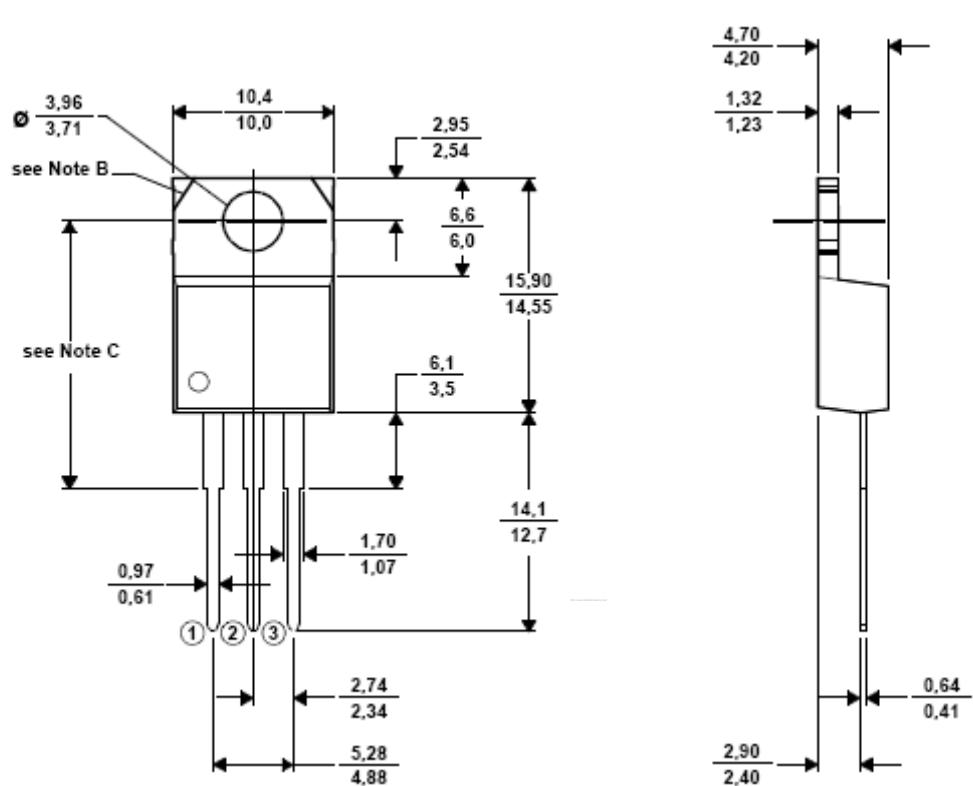
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
$dV_D/dt$	Critical rate of rise of off-state voltage	$V_{DM} = 67\% V_{DRM\max}$ $T_j = 125^\circ\text{C}$ Exponential waveform; gate open circuit	200	300	-	V/ $\mu$ s
$t_{gt}$	Gate controlled turn-on time	$I_{TM} = 40 \text{ A}; V_D = V_{DRM\max}$ $I_G = 0.1 \text{ A}; dI_G/dt = 5 \text{ A}/\mu\text{s}$	-	2	-	$\mu$ s
$t_q$	Circuit commutated Turn-off time	$V_{DM} = 67\% V_{DRM\max}$ $T_j = 125^\circ\text{C}$ $I_{TM} = 50 \text{ A}; V_R = 25 \text{ V}$ $R_{GK} = 100 \Omega$ $dI_{TM}/dt = 30 \text{ A}/\mu\text{s}$ $dV_D/dt = 50 \text{ V}/\mu\text{s}$	-	70	-	$\mu$ s



## BT152 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

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