BT152 series Thyristors

RoHS COMPLIANT

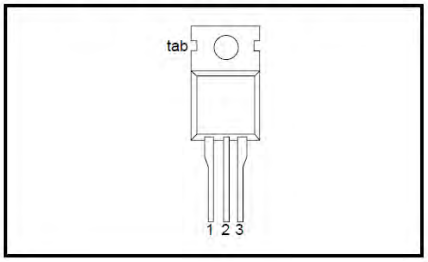
FEATURE

Glass passivated thyristors in a plastic TO220AB 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.

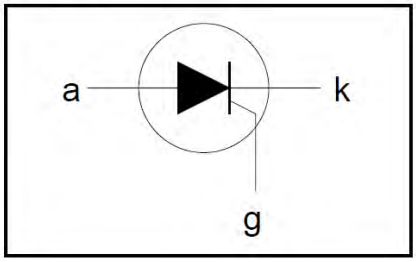
PINNING - TO220AB

PIN	DESCRIPTION
1	cathode
2	anode
3	gate
tab	anode

PIN CONFIGURATION



SYMBOL



ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value			Unit
		BT152-500R	BT152-600R	BT152-800R	
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	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
$PG_{(AV)}$	Average gate power	0.5			W
T_{stg}	Storage temperature range	-40 to +150			°C
T_j	Operating junction temperature	125			

THERMAL CHARACTERISTICS

Symbol	Rati	Value	Unit
$R_{\partial j\text{-}mb}$	Thermal resistance junction to mounting base	≤ 1.1	°C/W
$R_{\partial JA}$	Thermal resistance junction to ambient	≤ 60	

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Rati	Test Condition(s)		Min	Typ	Max	Unit
V_{DRM}	Repetitive peak off-state voltage		BT152-500R	500	-	-	V
			BT152-600R	650	-	-	
			BT152-800R	800	-	-	
V_{RRM}	Repetitive peak reverse voltage		BT152-500R	500	-	-	
			BT152-600R	650	-	-	
			BT152-800R	800	-	-	
I_{GT}	Gate trigger current	V_D = 12 V; I_T = 100 mA		-	-	32	mA
V_{GT}	Gate trigger voltage	V_D = 12 V; I_T = 100 mA		-	-	1.5	V
I_L	Latching current	V_D = 12 V; I_{GT} = 100 mA		-	-	80	mA
I_H	Holding current	V_D = 12 V; I_{GT} = 100 mA		-	-	60	mA
I_D	Off-state current	$V_D = V_{DRM\ max}$; T_j = 125°C		-	-	1	mA
I_R	Reverse current	$V_R = V_{RRM\ max}$; T_j = 125°C		-	-	1	mA
V_T	On-state voltage	I_T = 40 A		-	-	1.75	V

DYNAMIC CHARACTERISTICS

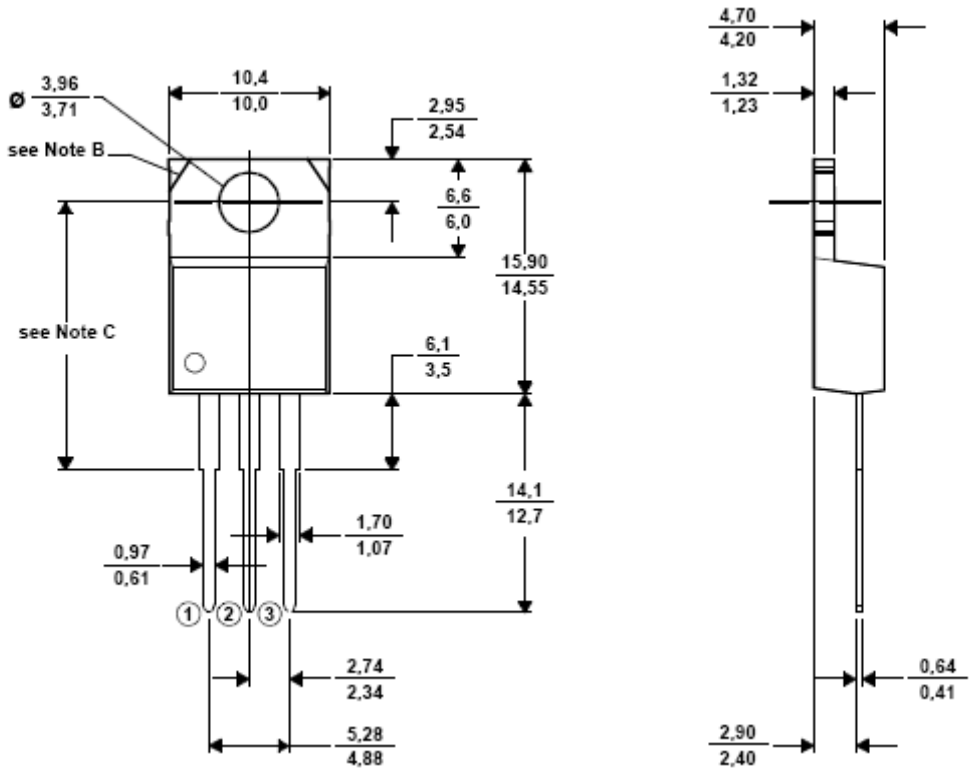
TC=25°C unless otherwise noted

Symbol	Rati	Test Condition(s)	Min	Typ	Max	Unit
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	200	3	-	V/µs
t_{gt}	Gate controlled turn-on time	I_{TM} = 40 A; $V_D = V_{DRMmax}$ I_G = 0.1 A; dI_G/dt = 5 A/µs	-	2	-	µs
t_q	Circuit commutated Turn-off time	V_{DM} = 67% V_{DRMmax} T_j = 125°C I_{TM} = 50 A; V_R = 25 V R_{GK} = 100 Ω dI_{TM}/dt = 30 A/µs dV_D/dt = 50 V/µS	-	70	-	µs

RoHS COMPLIANT

MECHANICAL DATA CASE TO-220AB

TO220



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