

Triacs

BT136 series

GENERAL DESCRIPTION

Glass passivated triacs in a plastic envelope, 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.

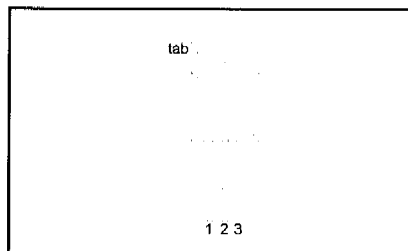
QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	MAX.	MAX.	UNIT
V_{DRM}	Repetitive peak off-state voltages	500	600	800	V
		500F	600F	800F	
		500G	600G	800G	
$I_{T(RMS)}$	RMS on-state current	4	4	4	A
I_{TSM}	Non-repetitive peak on-state current	25	25	25	A

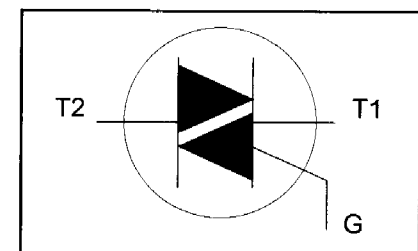
PINNING - TO220AB

PIN	DESCRIPTION
1	main terminal 1
2	main terminal 2
3	gate
tab	main terminal 2

PIN CONFIGURATION



SYMBOL



LIMITING VALUES

Limiting values in accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
				-500	-600	-800	
V_{DRM}	Repetitive peak off-state voltages		-	500 ¹	600 ¹	800	V
$I_{T(RMS)}$	RMS on-state current	full sine wave; $T_{mb} \leq 107^\circ C$	-	4			A
I_{TSM}	Non-repetitive peak on-state current	full sine wave; $T_j = 25^\circ C$ prior to surge $t = 20$ ms	-	25			A
I^2t	I^2t for fusing	$t = 16.7$ ms	-	27			A
di_T/dt	Repetitive rate of rise of on-state current after triggering	$t = 10$ ms $I_{TM} = 6$ A; $I_G = 0.2$ A; $di_G/dt = 0.2$ A/ μ s	-	3.1			A ² s
		T2+ G+	-	50			A/ μ s
		T2+ G-	-	50			A/ μ s
		T2- G-	-	50			A/ μ s
		T2- G+	-	10			A/ μ s
I_{GM}	Peak gate current		-	2			A
V_{GM}	Peak gate voltage		-	5			V
P_{GM}	Peak gate power		-	5			W
$P_{G(AV)}$	Average gate power	over any 20 ms period	-	0.5			W
T_{stg}	Storage temperature		-40	150			$^\circ C$
T_j	Operating junction temperature		-	125			$^\circ C$



THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base	full cycle	-	-	3.0	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	half cycle in free air	-	60	3.7	K/W

STATIC CHARACTERISTICS $T_j = 25\text{ }^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.			UNIT
I_{GT}	Gate trigger current	BT136- $V_D = 12\text{ V}; I_T = 0.1\text{ A}$F	...G		
		T2+ G+	-	5	35	25	50	mA
		T2+ G-	-	8	35	25	50	mA
		T2- G-	-	11	35	25	50	mA
		T2- G+	-	30	70	70	100	mA
I_L	Latching current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$						
		T2+ G+	-	7	20	20	30	mA
		T2+ G-	-	16	30	30	45	mA
		T2- G-	-	5	20	20	30	mA
		T2- G+	-	7	30	30	45	mA
I_H	Holding current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$	-	5	15	15	30	mA
V_T	On-state voltage	$I_T = 5\text{ A}$	-	1.4	1.70			V
V_{GT}	Gate trigger voltage	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$	-	0.7	1.5			V
		$V_D = 400\text{ V}; I_T = 0.1\text{ A};$ $T_j = 125\text{ }^\circ\text{C}$	0.25	0.4	-			V
I_D	Off-state leakage current	$V_D = V_{DRM(max)};$ $T_j = 125\text{ }^\circ\text{C}$	-	0.1	0.5			mA

DYNAMIC CHARACTERISTICS $T_j = 25\text{ }^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.			TYP.	MAX.	UNIT
dV_D/dt	Critical rate of rise of off-state voltage	BT136- $V_{DM} = 67\% V_{DRM(max)};$ $T_j = 125\text{ }^\circ\text{C};$ exponential waveform; gate open circuitF	...G	250	-	V/ μs
dV_{com}/dt	Critical rate of change of commutating voltage	$V_{DM} = 400\text{ V}; T_j = 95\text{ }^\circ\text{C};$ $I_{T(RMS)} = 4\text{ A};$ $di_{com}/dt = 1.8\text{ A/ms};$ gate open circuit	-	-	10	50	-	V/ μs
t_{gt}	Gate controlled turn-on time	$I_{TM} = 6\text{ A}; V_D = V_{DRM(max)};$ $I_G = 0.1\text{ A}; di_G/dt = 5\text{ A}/\mu\text{s}$	-	-	-	2	-	μs