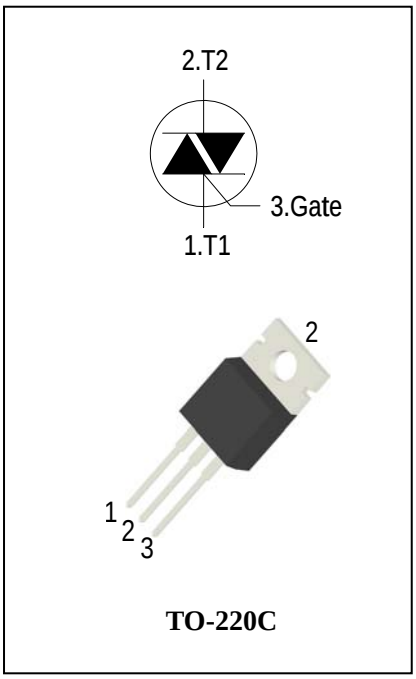
4Quadrants Triacs

General Description

High current density due to mesa technology .the BT136 triac series is suitable for general purpose AC switching. They can be used as an ON/OFF function in applications such as static relays, heating regulation, Rectifier-fed DC inductive loads e.g.DC motors and solenoids , motor speed controllers.



Features

- Repetitive Peak Off-State Voltage: 600Vand800V
- R.M.S On-State Current ($I_{T(RMS)}$= 4A)
- These Devices are Pb-Free and are RoHS Compliant

Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	Tj = 25°C	BT136-600	600	V
V_{RRM}			BT136-800	800	V
$I_{T(RMS)}$	R.M.S On-State Current	T_C = 110°C		4	A
I_{TSM}	Surge On-State Current	tp=20ms(50Hz)/tp=16.7ms(60Hz)		25/27	A
I^2t	I^2t for fusing	tp=10ms		3.1	A^2s
dI/dt	Critical rate of rise of on-state current	F = 120 Hz Tj = 125°C	Q1-Q2-Q3	50	A/μs
		I_G = 2 x I_{GT} , tr ≤ 100 ns	Q4	10	
I_{GM}	Peak Gate Current	tp = 20 μs Tj = 125°C		2	A
$P_{G(AV)}$	Average Gate Power Dissipation(Tj=125°C)			0.5	W
P_{GM}	Peak Gate Power Dissipation(tp=20us,Tj=125°C)			5	W
T_j	Operating Junction Temperature			- 40 ~ 125	°C
T_{STG}	Storage Temperature			- 40 ~ 150	°C

ADV
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Electrical Characteristics (T_j = 25°C unless otherwise specified)

Symbol	Items		Conditions		BT136-600/800				Unit
					D	E	F	G	
I_{DRM}	Peak Forward Reverse Blocking Current		V_{DRM} = V_{RRM}, Tj = 25°C	Max.	5				uA
I_{RRM}			V_{DRM} = V_{RRM}, Tj = 125°C		1				mA
V_{TM}	Peak On-State Voltage		I_{TM} = 5A, t_p = 380 μs	Max.	1.7				V
V_{GD}	Q1-Q2-Q3-Q4	Non – Trigger Gate Voltage	V_D = V_{DRM} R_L = 3.3 kΩ Tj = 125°C	Min.	0.2				V
V_{GT}	Q1-Q2-Q3-Q4	GateTrigger Voltage	V_D = 12V , R_L = 33Ω	Max.	1.3				V
I_{GT}	Q1-Q2-Q3	GateTrigger Current		Max.	5	10	25	50	mA
	Q4				10	25	70	100	
I_H	Q1-Q2-Q3-Q4	Holding Current	I_T = 0.1A	Max.	10	25	30	60	mA
I_L	Q1-Q3-Q4	Latching Current	I_G = 1.2 I_{GT}	Max.	15	30	40	60	mA
	Q2				20	40	60	90	
dV/dt	Critical Rate of Rise of Off-State Voltage		V_D = 2/3V_{DRM} gate open Tj = 125°C	Min.	5	10	50	200	V/μs
(dV/dt)c	Rate of Change of Commutating Current,		(dI/dt)c=-1.8A/ms Tj = 125°C	Min.	1	2	5	10	V/μs
$R_{th(j-c)}$	Junction to case (AC)			Max.	3.0				°C/W
$R_{th(j-a)}$	Junction to ambient			Max.	60				°C/W

FIG.1:Triac quadrant are defined and the gate trigger test circuit

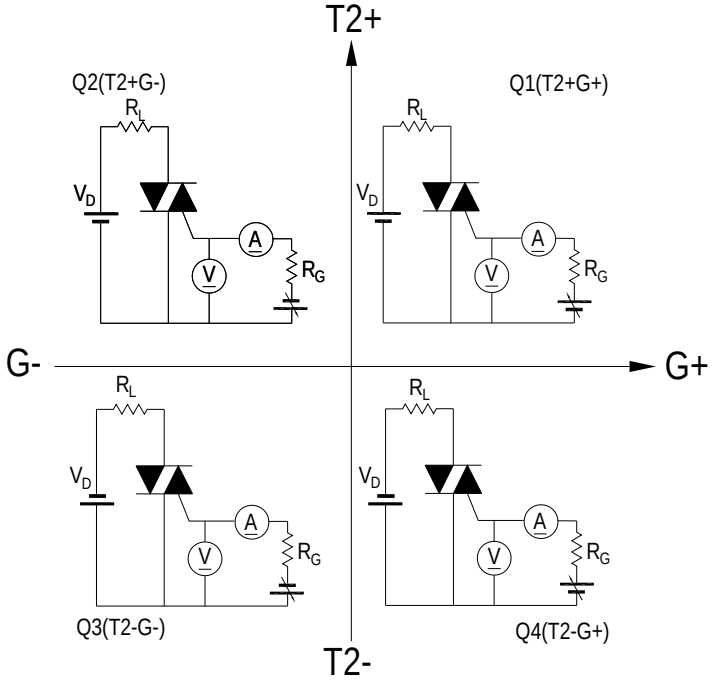


FIG.2: Maximum on-state power dissipation

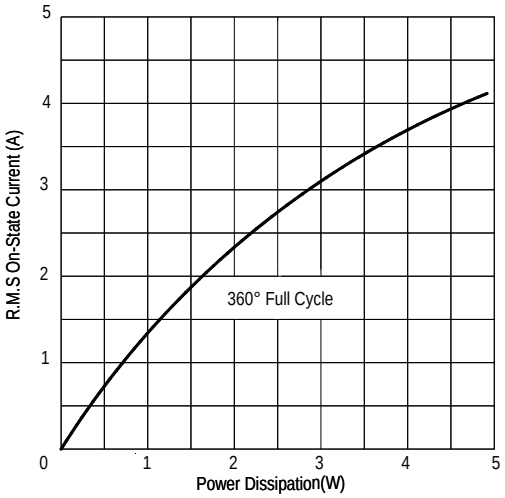


FIG.3: Typical RMS on-state current VS Allowable case Temperature

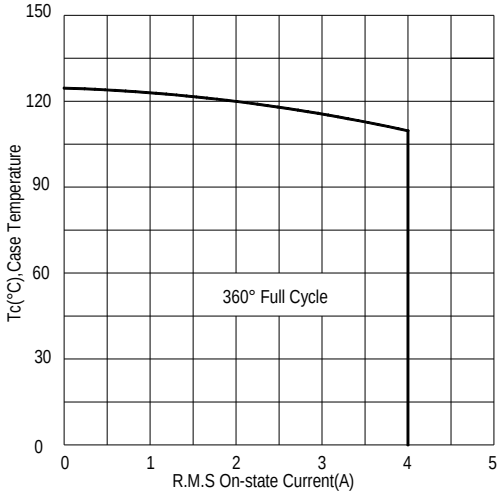


FIG.4: Maximum transient thermal impedance

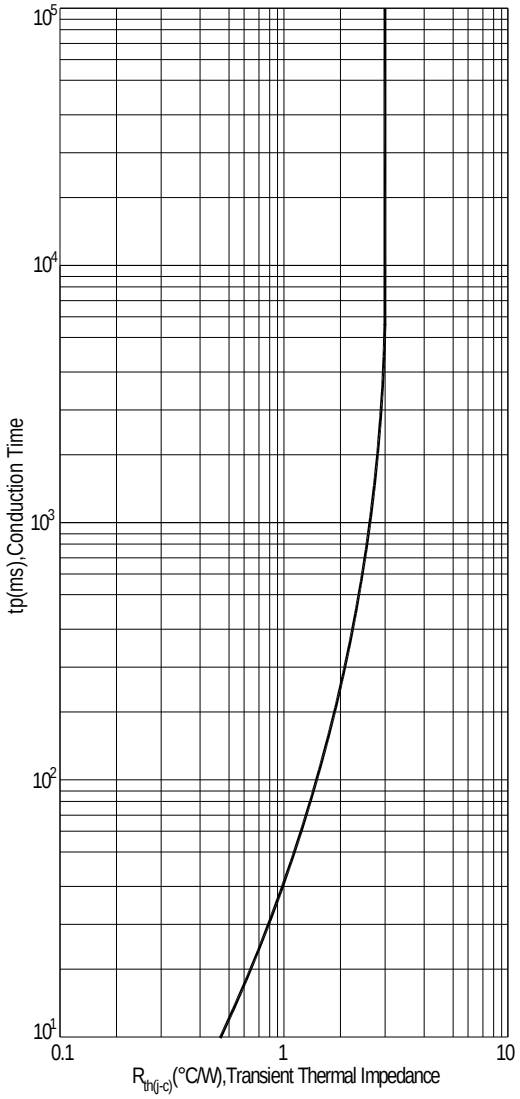


FIG.5: Rated surge on-state current (Non-Repetitive)

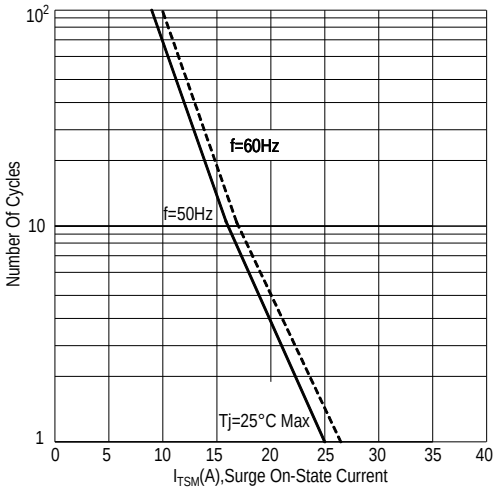


FIG.6: Gate trigger current VS Junction temperature

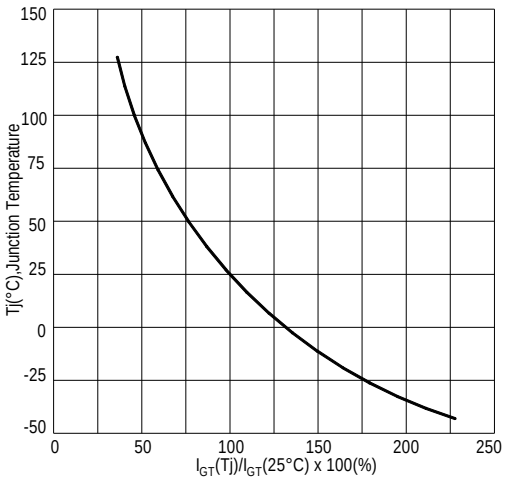


FIG.7:Holding current and Latching current VS Junction temperature

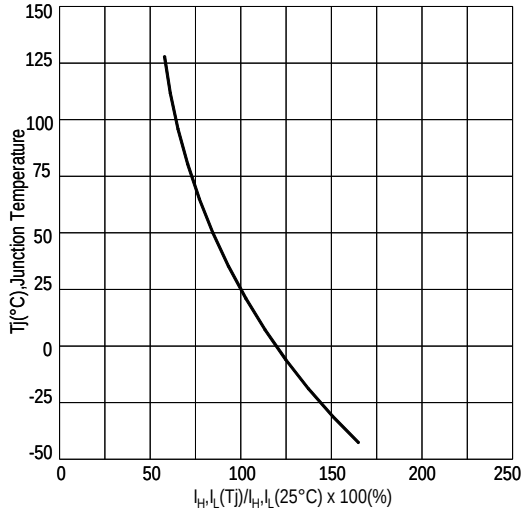


FIG.8: Gate trigger voltage VS Junction temperature

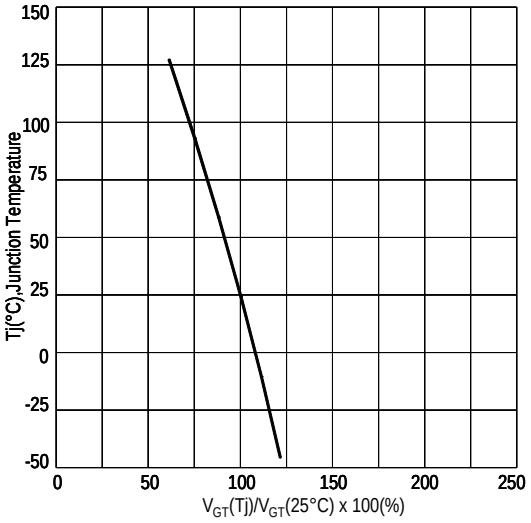
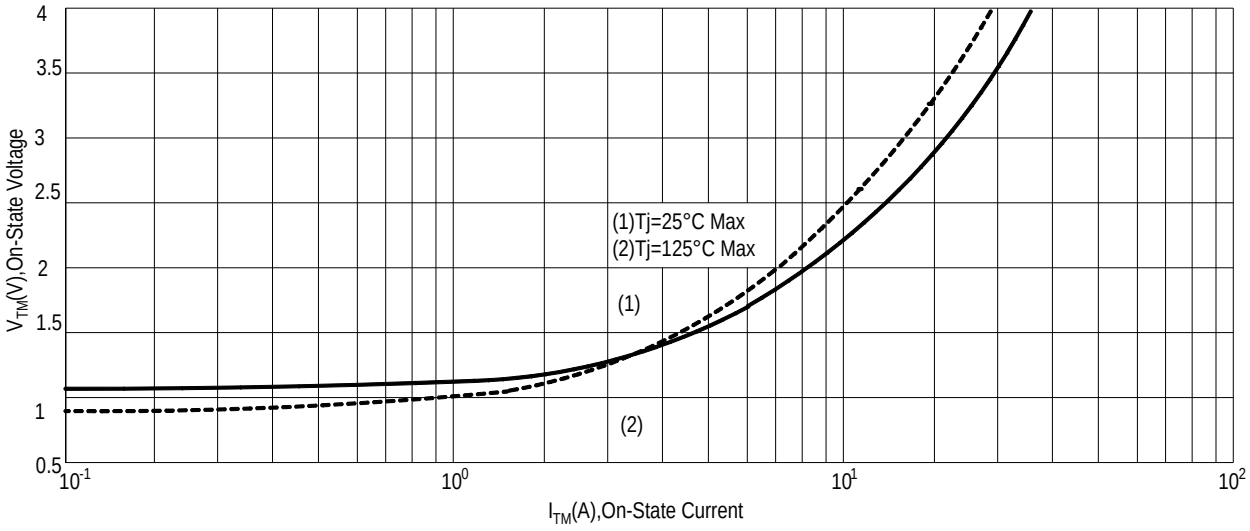
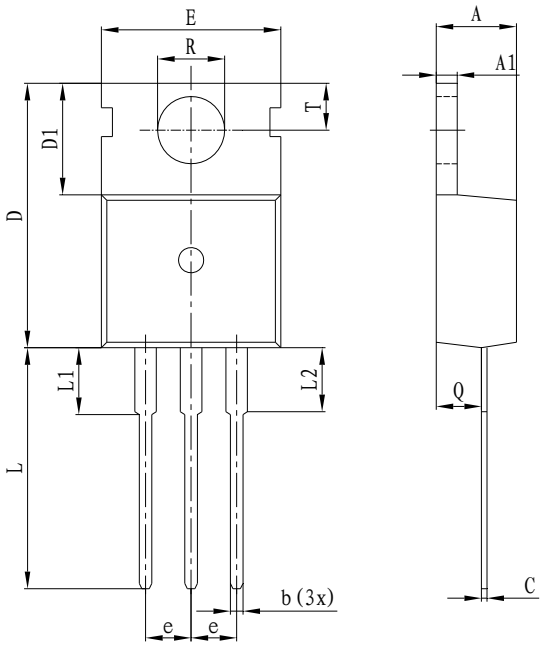


FIG.9: On-state characteristics(Max)



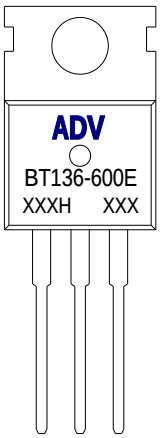
PACKAGE MECHANICAL DATA

TO-220C Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
e	2.54 TYP		0.099TYP	
A	4.10	4.70	0.161	0.185
A1	1.25	1.40	0.049	0.055
b	0.60	0.90	0.023	0.035
C	0.40	0.70	0.016	0.027
D	15.20	16.00	0.598	0.630
D1	5.90	6.60	0.232	0.259
E	9.70	10.30	0.382	0.405
L	12.80	15.00	0.504	0.590
L1	2.79	3.30	0.110	0.130
R	3.50	3.80	0.138	0.149
T	2.70	3.00	0.106	0.118
Q	2.20	2.60	0.086	0.102
L2		3.00		0.118

Making Diagram



ADV:Logo
BT136-600E:Part number
X:Internal control code
H:Halogen Free

Ordering information

Part number	Package	Marking	Packing	Quantity
BT136-600#	TO-220C	BT136-600#	Tube	50pcs
BT136-800#	TO-220C	BT136-800#	Tube	50pcs
Note:# = Gate Trigger Current Sensitivity and type				

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