

BT138 800E**TRIACS***Blocking voltage -800 Volts On-state RMS current -12 Ampere***FEATURES**

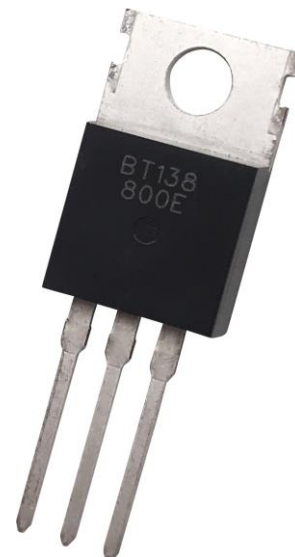
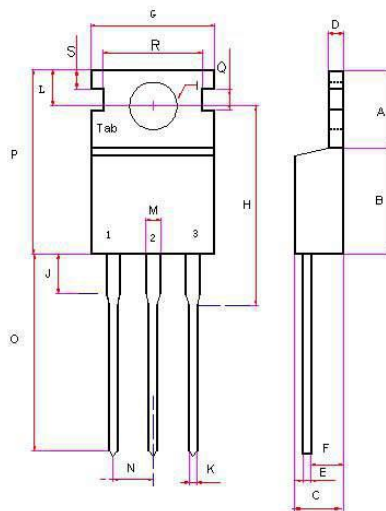
- Ultra low gate trigger current
- Low cost package.

APPLICATIONS

Typical applications include motor control, industrial and domestic lighting, heating and static switching.

- Heating regulation
- Motor control
- Phase control

(TO-220)




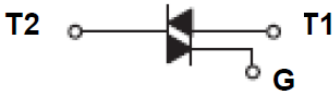
DIM	Inches			Millimeters		
	Min	Type	Max	Min	Type	Max
A	0.226	0.258	0.301	5.750	6.550	7.650
B	0.349	0.362	0.369	8.860	9.200	9.380
C	0.171	0.178	0.183	4.350	4.530	4.650
D	0.046	0.051	0.055	1.160	1.300	1.400
E	0.018	0.020	0.026	0.450	0.510	0.650
F	0.070	0.094	0.105	1.785	2.400	2.675
G	0.367	0.394	0.415	9.310	10.000	10.550
H	-	-	0.640	-	-	16.250
I	-	0.143	0.152	-	3.620	3.850
J	0.087	0.108	0.127	2.220	2.750	3.220
K	0.027	0.031	0.035	0.680	0.800	0.880
L	0.093	-	0.128	2.360	-	3.240
M	0.046	0.048	0.057	1.180	1.220	1.440
N	-	0.100	0.104	-	2.540	2.650
O	0.485	0.514	0.546	12.320	13.050	13.880
P	0.593	0.616	0.648	15.070	15.650	16.470
Q	0.057	0.067	0.073	1.460	1.700	1.860
R	0.320	0.344	0.360	8.140	8.750	9.140
S	0.046	0.051	0.058	1.170	1.300	1.470

BT138 800E

TRIACS

Blocking voltage -800 Volts On-state RMS current -12 Ampere

PINNING INFORMATION

PIN	Description	Simplified outline	Symbol
1	main terminal 1 (T1)	 TO-220	
2	main terminal 2 (T2)		
3	gate (G)		
tab	main terminal		

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX	UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state voltages	800	V
$I_{T(RMS)}$	RMS on-state current	12	A
I_{TSM}	Non-repetitive peak on-state current	90	A

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MA	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base	full cycle	-	-	1.50	K/W
		half cycle	-	-	2.00	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	in free air		60	-	K/W

LIMITING VALUE

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

SYMBOL	PARAMETER	CONDITIONS	MI	MAX	UNIT	
V_{DRM} V_{RRM}	Repetitive peak off-state voltages		-	800	V	
$I_{T(RMS)}$	RMS on-state current	full sine wave; $T_{mb} \leq 102\ ^\circ\text{C}$	-	12	A	
	Non-repetitive peak on-state current	full sine wave; $T_j = 25\ ^\circ\text{C}$ prior to surge	$t = 20\ \text{ms}$	-	90	A
			$t = 16.7\ \text{ms}$	-	105	A
I^2t	I^2t for fusing	$t = 10\ \text{ms}$	-	45	A ² s	
dI_T/dt	Repetitive rate of rise of on-state current after triggering	$I_{TM} = 12\ \text{A}; I_G = 0.2\ \text{A};$ $dI_G/dt = 0.2\ \text{A/s}$	T2+ G+	-	100	A/ μs
			T2+ G-	-	100	A/ μs
			T2- G-	-	100	A/ μs
I_{GM}	Peak gate current		-	2	A	
V_{GM}	Peak gate voltage		-	8	V	
P_{GM}	Peak gate power		-	16	W	
$P_{G(AV)}$	Average gate power	over any 20 ms period	-	0.35	W	
T_{stg}	Storage temperature		-40	150	$^\circ\text{C}$	
T_j	Junction temperature		-40	125	$^\circ\text{C}$	

BT138 800E

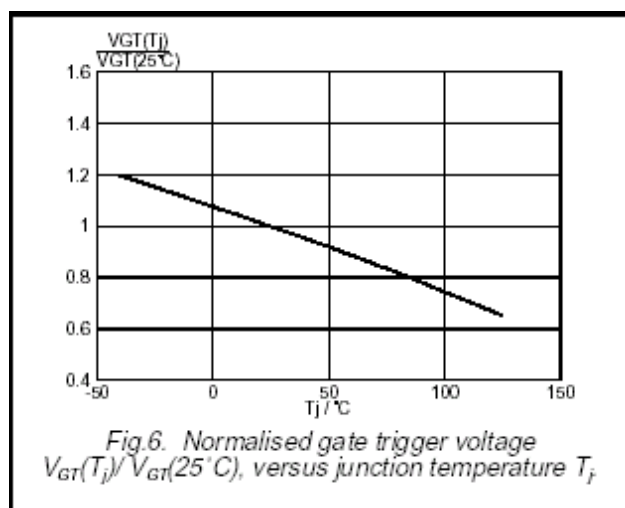
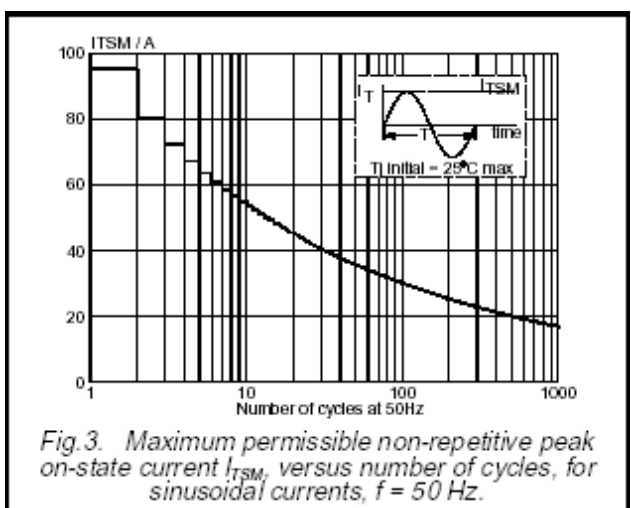
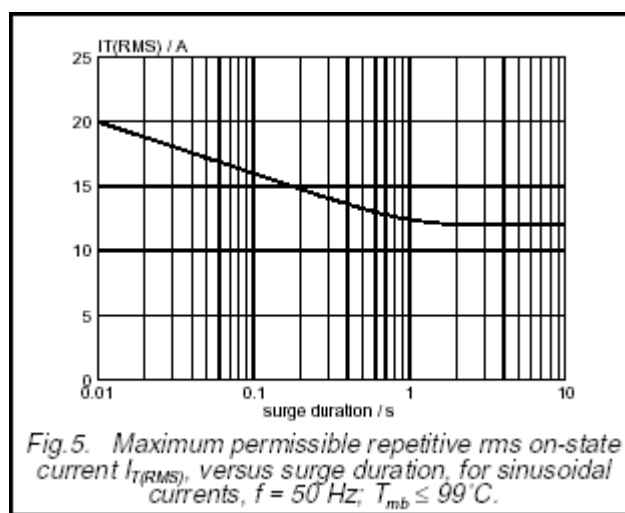
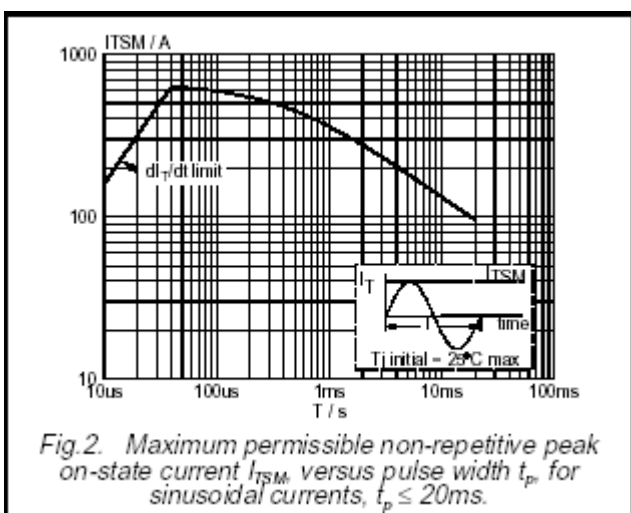
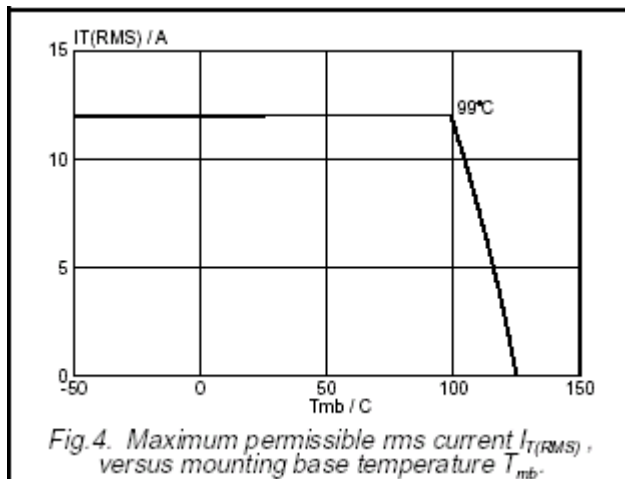
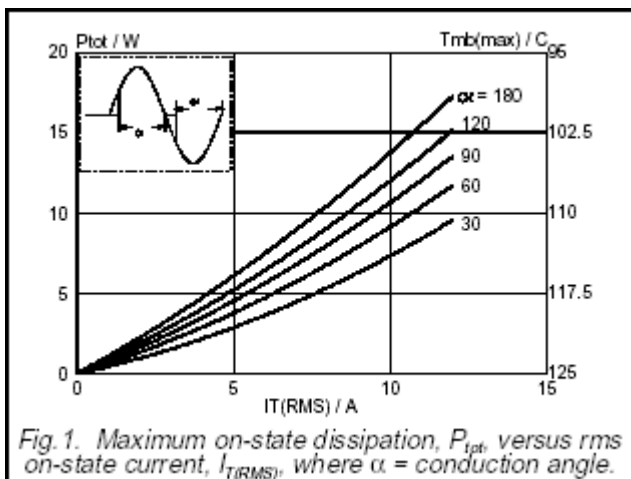
TRIACS

Blocking voltage -800 Volts On-state RMS current -12 Ampere

CHARACTERISTICST_j = 25°C unless otherwise stated

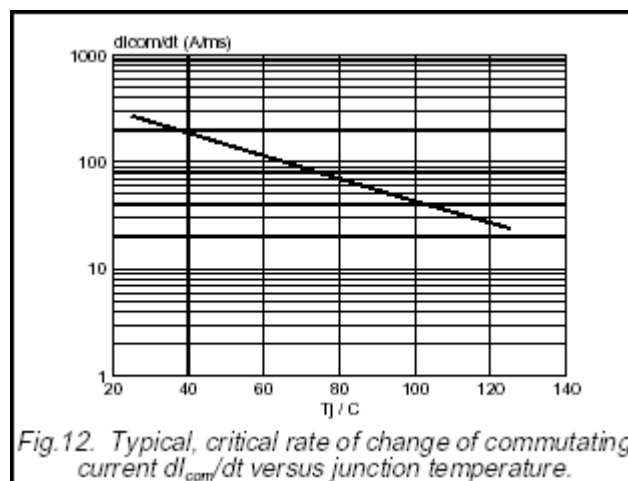
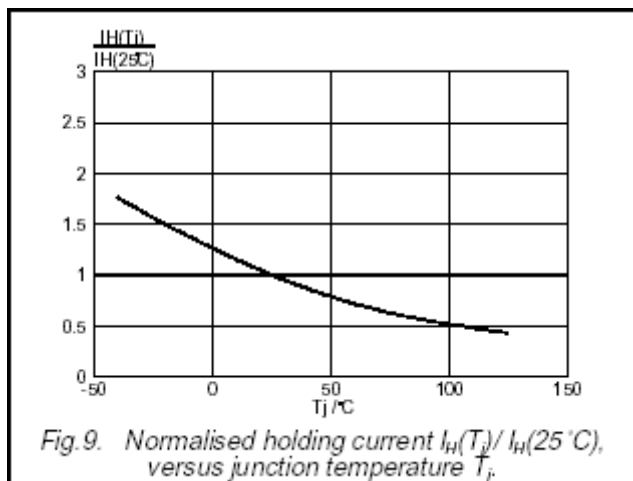
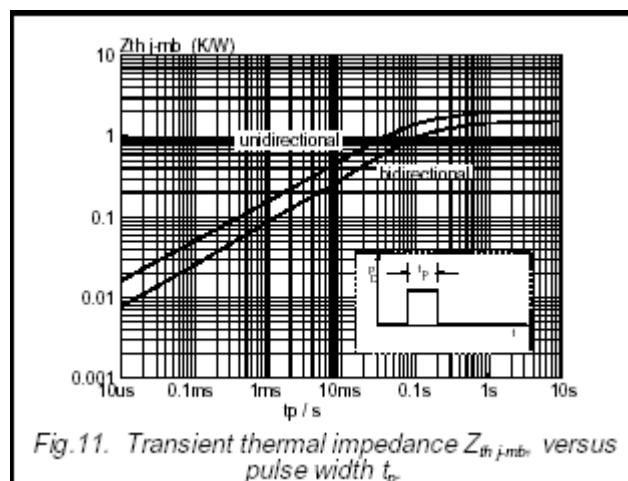
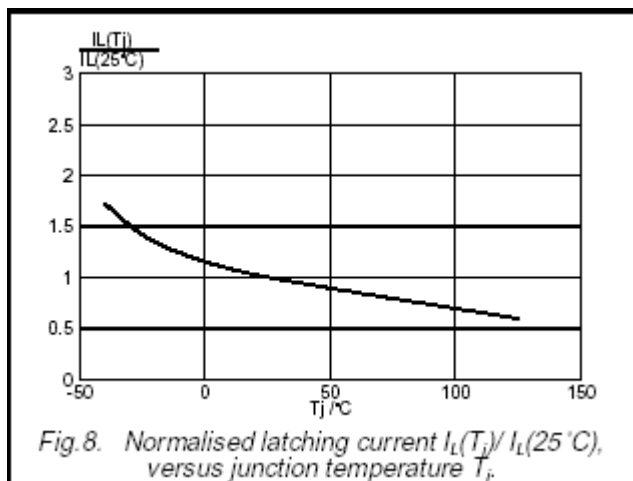
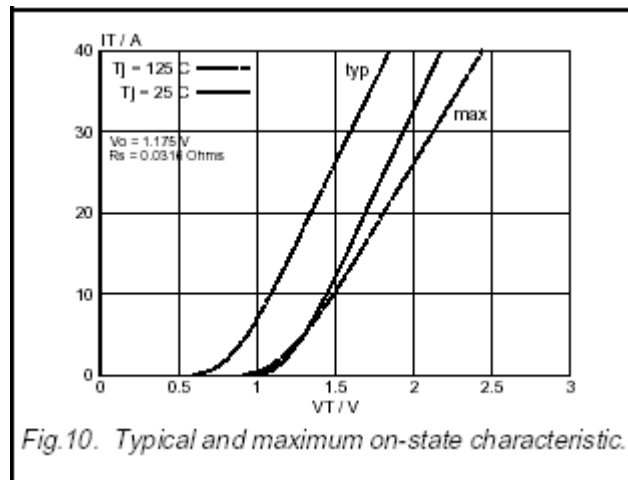
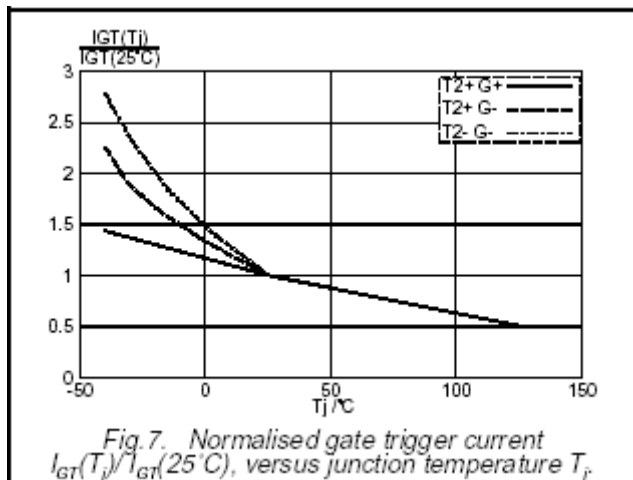
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT	
Static characteristics							
I _{GT}	Gate trigger current	V _D = 12 V; I _T = 0.1A	T2+ G+	-	-	10	mA
			T2+ G-	-	-	10	mA
			T2- G-	-	-	10	mA
			T2- G+	-	-	-	mA
I _L	Latching current	V _D = 12 V; I _{GT} = 0.1A	T2+ G+	-	-	20	mA
			T2+ G-	-	-	50	mA
			T2- G-	-	-	20	mA
			T2- G+	-	-	-	mA
I _H	Holding current	V _D = 12 V; I _{GT} = 0.15A	-	20	50	mA	
V _T	On-state voltage	I _T = 17A	-	-	1.85	V	
V _{GT}	Gate trigger voltage	V _D = 12 V; I _T = 0.1A	T2+ G+	0.50	0.80	1.50	V
			T2+ G-	0.50	0.78	1.50	V
			T2- G-	0.50	0.70	1.50	V
			T2- G+	-	-	-	V
Dynamic Characteristics							
dV _D /dt	Critical rate of rise of off-state voltage	V _{DM} = 67% V _{DRM(max)} ; T _j = 125 °C; Exponential wave form; gate open circuit	250	500	-	V/μs	
dI _{com} /dt	Critical rate of change of commutating current	V _D = 400 V; T _j = 125 °C I _{T(RMS)} = 4.4A; Commutating dv/dt = 18 V/ s, Without snubber; gate open circuit	6.5	-	-	A/ms	
dI/dt	Repetitive Critical Rate of Rise of On-State Current	I _{PK} = 50 A; PW = 40 sec; di _G /dt = 200 mA/ sec; f = 60 Hz	-	-	10	A/μs	

RATINGS AND CHARACTERISTIC CURVES BT138 800E



Note: Specification are subject to change without notice. For more detail and update, please visit our website.

RATINGS AND CHARACTERISTIC CURVES BT138 800E



Note: Specification are subject to change without notice. For more detail and update, please visit our website.