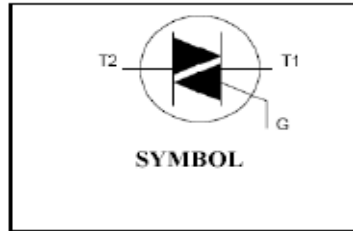
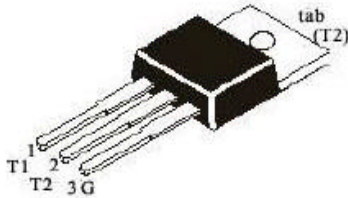


## TRIACS

**BT138-800**  
**TO-220**

**Plastic Package**



## MAIN FEATURES

- . High blocking voltage
- . Low on-state voltage and high  $I_{TSM}$
- . High heat dissipation and durability
- . ROHS product

## DESCRIPTION

The BT138 Triac series specifically designed for use in high temperature environment such as cookers, ovens, motor control, Industrial and Domestic lighting, heating and static switching, motor speed controllers.

## ABSOLUTE MAXIMUM RATINGS ( $T_j = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Repetitive Peak Off-State Voltage	$V_{DRM}$			800	V
Repetitive Peak Reverse Voltage	$V_{RRM}$			800	
On-State RMS Current	$I_{T(RMS)}$	All conduction angles, $TC=102^\circ\text{C}$		12	A
Non Repetitive Surge Peak On-State Current	$I_{TSM}$	full Sine wave, $T_j=25^\circ\text{C}$ , $t=20\text{ms}$		105	A
$I^2t$ Value for Fusing	$I^2t$	$t=10\text{ms}$		45	$\text{A}^2\text{s}$
Repetitive Rate of Rise of On-State Current after Triggering	$di/dt$	$I_G=2 \cdot I_{GT}$ , $t_r < 100\text{ns}$ $f=120\text{Hz}$ , $T_j=150^\circ\text{C}$		50	$\text{A}/\mu\text{s}$
Peak Gate Current	$I_{GM}$	$t_p=20\mu\text{s}$ , $T_j=150^\circ\text{C}$		4	A
Average Gate Power	$P_{G(AV)}$	Over any 20ms period		1	W
Storage Temperature	$T_{stg}$		-40	150	$^\circ\text{C}$
Operation Junction Temperature	$T_j$			125	$^\circ\text{C}$

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### THERMAL CHARACTERISTICS

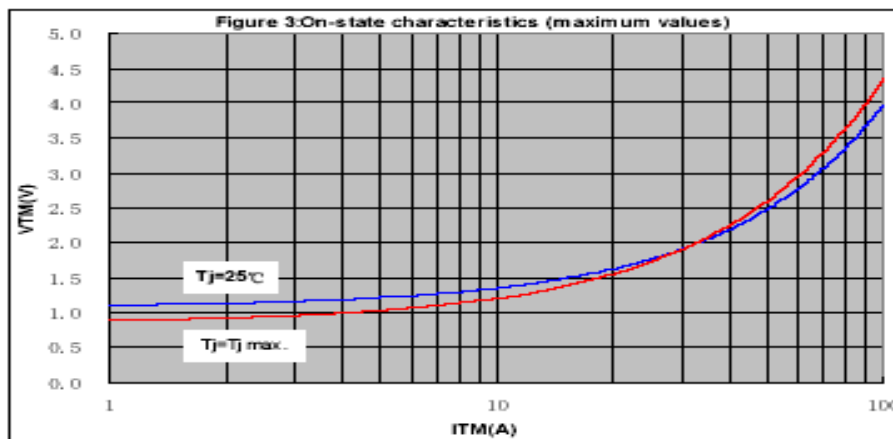
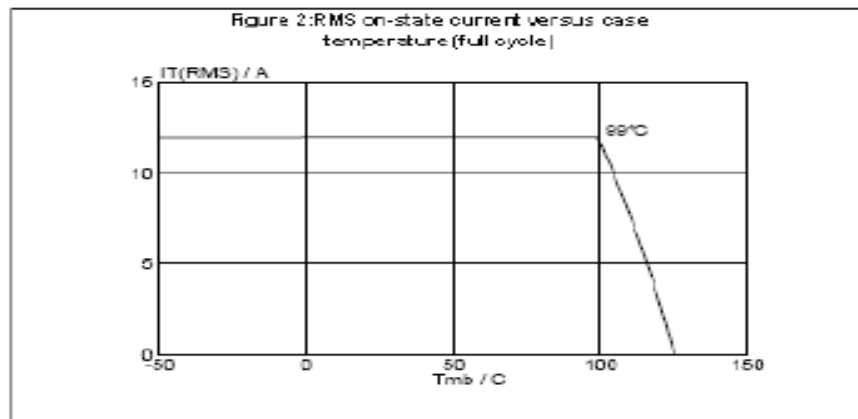
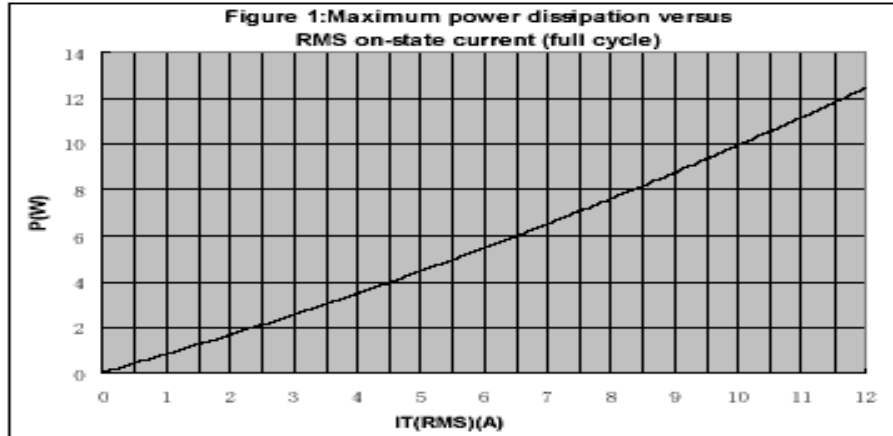
PARAMETER	SYMBOL	MAX	UNIT
Thermal Resistance, Junction to Case	$R_{thJ-C}$	2.0	$^{\circ}C/W$
Thermal Resistance, Junction to Ambient	$R_{thJ-A}$	60	$^{\circ}C/W$

### ELECTRICAL CHARACTERISTICS( $T_j=25^{\circ}C$ , unless otherwise specified)

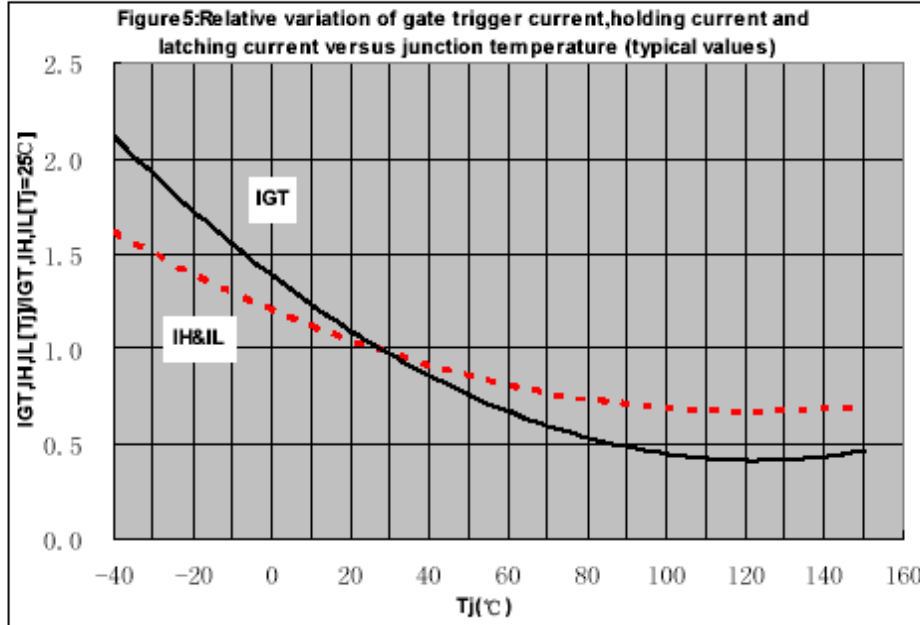
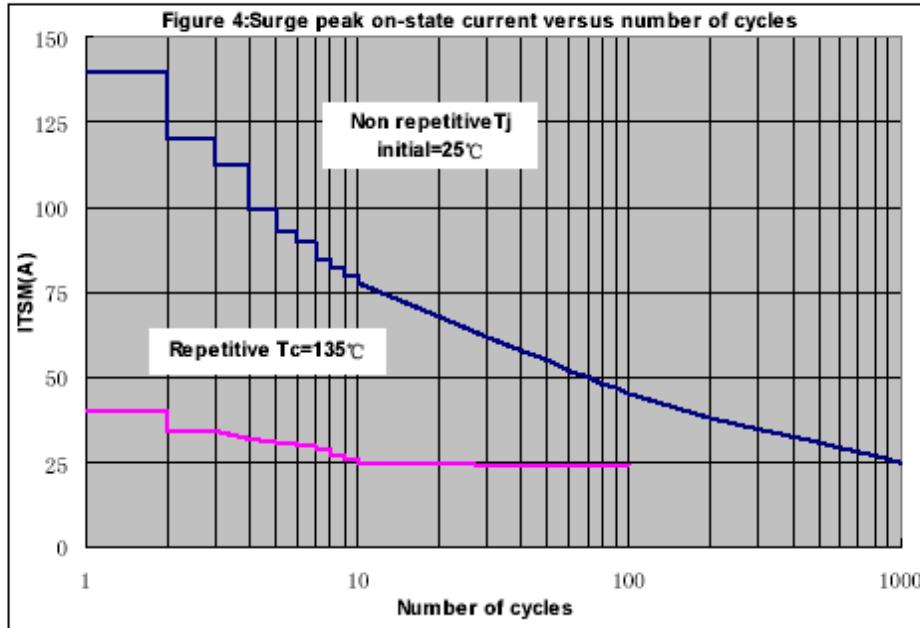
PARAMETER	SYMBOL	TEST CONDITION	MIN	MAX		UNIT
				E	D	
Peak Repetitive Forward Blocking Current	$I_{DRM}$	$V_{DM}=V_{DRM(MAX)}$ ; $T_j=25^{\circ}C$		5		$\mu A$
		$V_{DM}=V_{DRM(MAX)}$ ; $T_j=125^{\circ}C$		5.5		mA
Peak Repetitive Reverse Blocking Current	$I_{RRM}$	$V_{RM}=V_{RRM(MAX)}$ ; $T_j=25^{\circ}C$		5		$\mu A$
		$V_{RM}=V_{RRM(MAX)}$ ; $T_j=125^{\circ}C$		5.5		mA
Peak On-State Voltage	$V_{TM}$	$I_{TM}=17A, t_p=380\mu s$		1.55		V
Gate Trigger Current	$I_{GT}$	$V_{DM}=12V, I_T=0.1A$		10	5	mA
				25	10	
Gate Trigger Voltage	$V_{GT}$	$V_{DM}=12V, I_T=0.1A$		1.5		V
Holding Current	$I_H$	$V_{DM}=12V, I_{GT}=0.1A$		30	20	mA
Latching Current	$I_L$	$V_{DM}=12V, I_{GT}=1.2 I_{GT}$		40	30	mA
Rise of Off-State Voltage	dV/dt	$V_{DM}=67\% V_{DRM(MAX)}$ ; $T_j=150^{\circ}C$ Gate Open	20	-		V/ $\mu s$

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## TYPICAL CHARACTERISTICS



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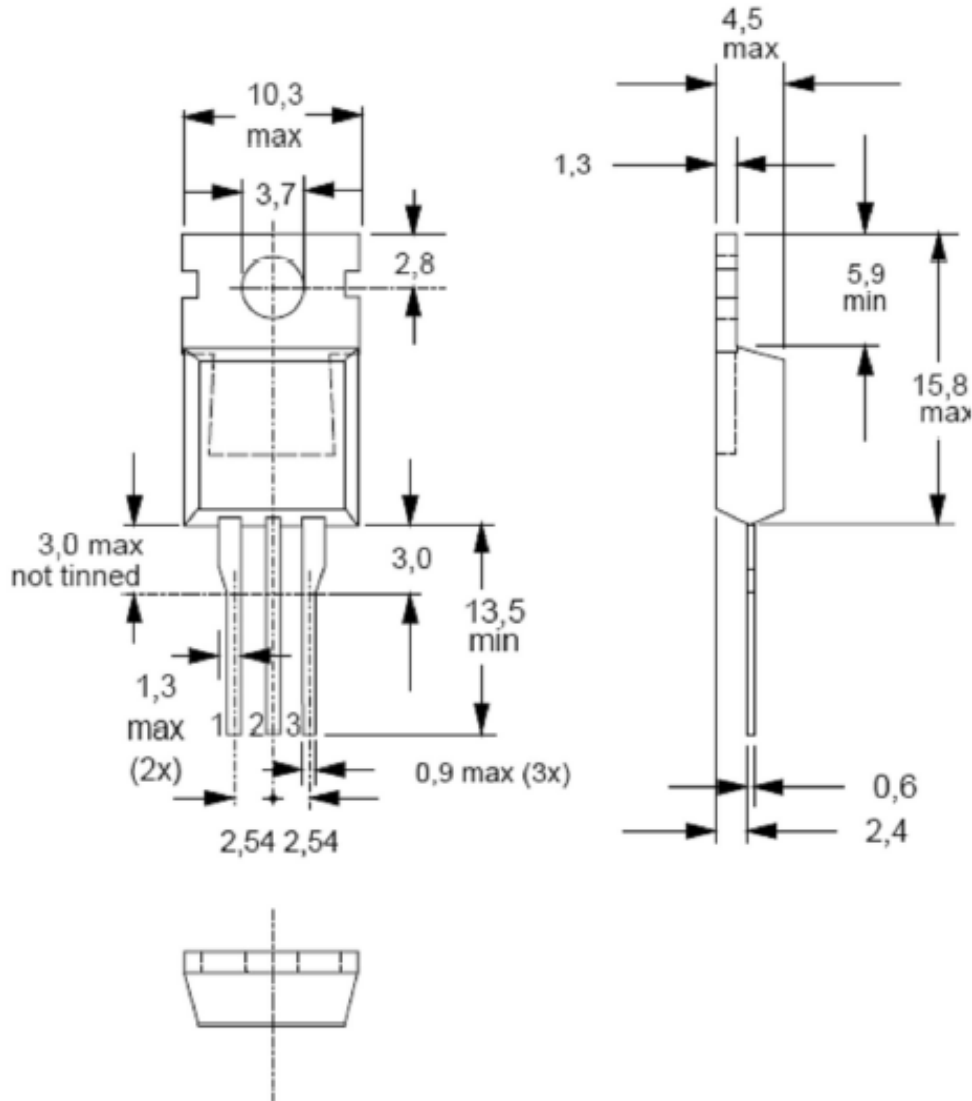




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### TO-220 Package Mechanical Data



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## Disclaimer

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CDIL is a registered Trademark of  
Continental Device India Limited  
C-120 Naraina Industrial Area, New Delhi 110 028, India.  
Telephone + 91-11-2579 6150, 4141 1112 Fax + 91-11-2579 5290, 4141 1119  
e-mail: sales@cdil.com www.cdil.com

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