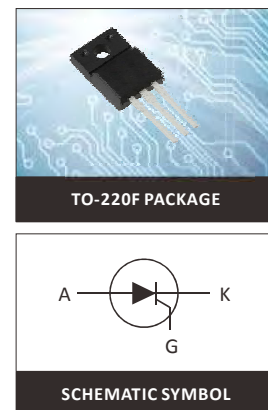


## DESCRIPTION

The BT151F-800R of silicon controlled rectifier, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc.

## MAIN FEATURES

Symbol	Value	Unit
$V_{DRM}/V_{RRM}$	$\geq 800$	V
$I_{T(RMS)}$	$\geq 12$	A
$I_{GT}$	$\leq 15$	mA



## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
$V_{DRM}$	Repe. tive peak off-state voltage	$T_J=25^\circ\text{C}$	800	V
$V_{RRM}$	Repetitive peak reverse voltage	$T_J=25^\circ\text{C}$	800	V
$I_{T(RMS)}$	RMS on-state current(360°conduction angle)	$T_C=85^\circ\text{C}$	12	A
$I_{TSM}$	Non repetitive surge peak on-state current	$T_P=10\text{ms}$	120	A
$I^2t$	$I^2t$ value for fusing	$T_P=10\text{ms}$	72	$\text{A}^2\text{s}$
$di_T/dt$	Repetitive rate of rise of on-state current	$I_G=2I_{GT}$	50	$\text{A}/\mu\text{s}$
$I_{GM}$	Peak gate current	$T_J=25^\circ\text{C}$	2	A
$P_{GM}$	Peak gate power	$T_J=25^\circ\text{C}$	5	W
$P_{G(AV)}$	Average gate power dissipation	$T_J=25^\circ\text{C}$	0.5	W
$T_{stg}$	Storage temperature range		$-40\sim+150$	$^\circ\text{C}$
$T_J$	Operating junction temperaturerange		$-40\sim+125$	$^\circ\text{C}$

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

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	-	4	15	V
$V_{GT}$	$V_D=12\text{V } R_L=33\Omega$	-	0.75	1.5	V
$V_{GD}$	$V_D=V_{DRM} R_L=33\text{K}\Omega T_J=125^\circ\text{C}$	0.2	-	-	V
$I_H$	$I_T=500\text{mA}$	-	12	30	mA
$I_L$	$I_G=1.2I_{GT}$	-	12	40	mA
	$V_D=2/3V_{DRM}$ Gate Open $T_J=125^\circ\text{C}$	200	400	-	$\text{V}/\mu\text{s}$

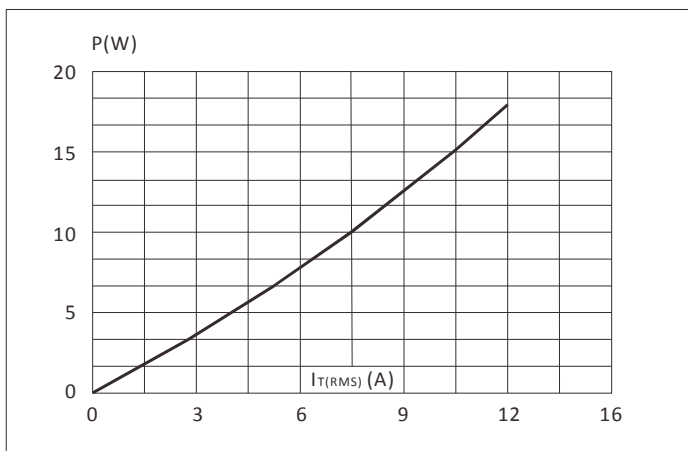
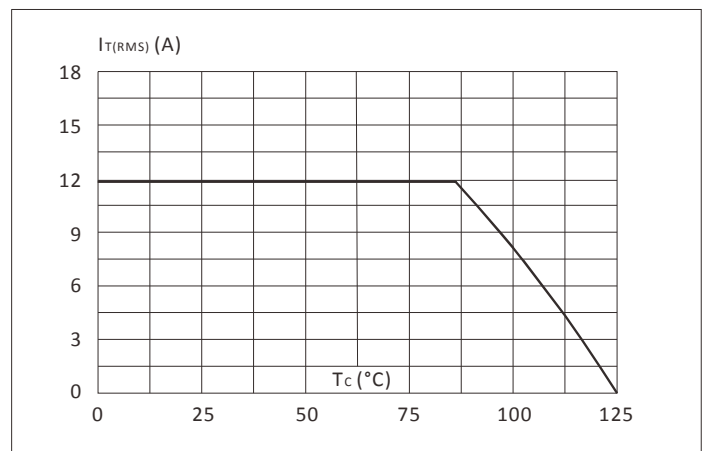
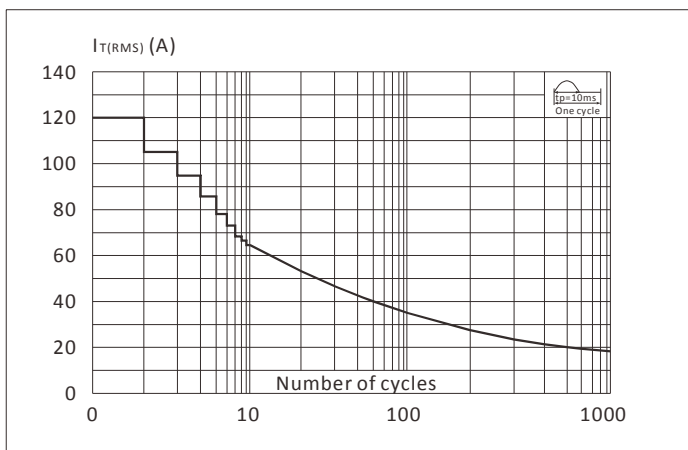
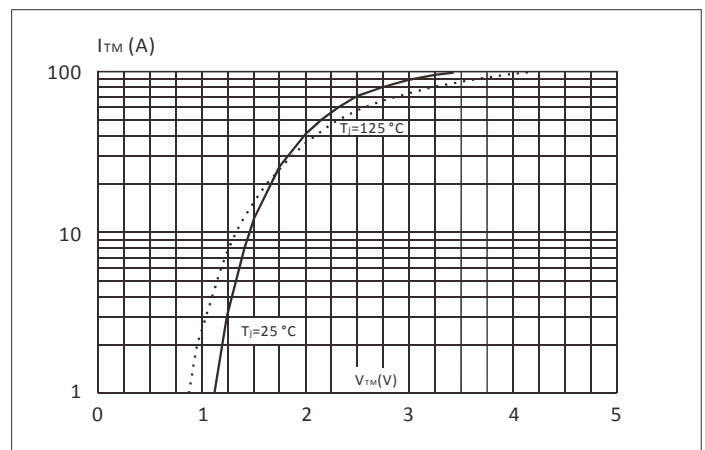


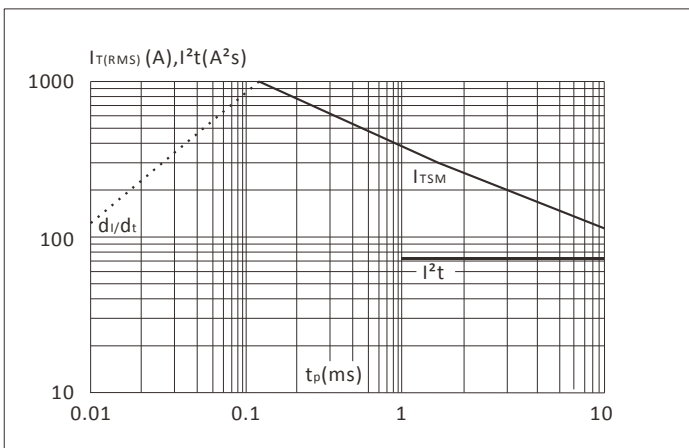
**STATIC CHARACTERISTICS**

Symbol	Parameter	Value	Unit
$V_{TM}$	$I_{TM}=23A$ $t_p=380\mu s$	$T_j=25^\circ C$	$\leq 1.7$ V
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	$\leq 10$ uA
$I_{RRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=125^\circ C$	$\leq 1.0$ mA

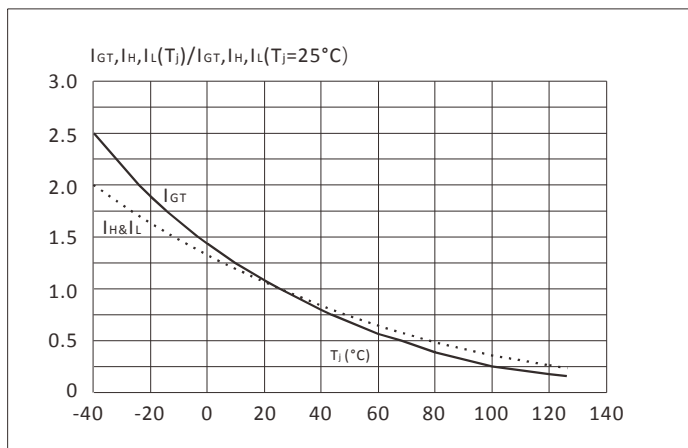
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-mb)}$	Junction to mounting base	4.5	$^\circ C/W$

**RATINGS AND CHARACTERISTIC CURVES ( $T_A=25^\circ C$  unless otherwise noted)**

**FIG. 1: Maximum power dissipation versus RMS on-state current**

**FIG. 2: RMS on-state current versus case temperature**

**FIG. 3: Surge peak on-state current versus number of cycles**

**FIG. 4: On-state characteristics (maximum values)**

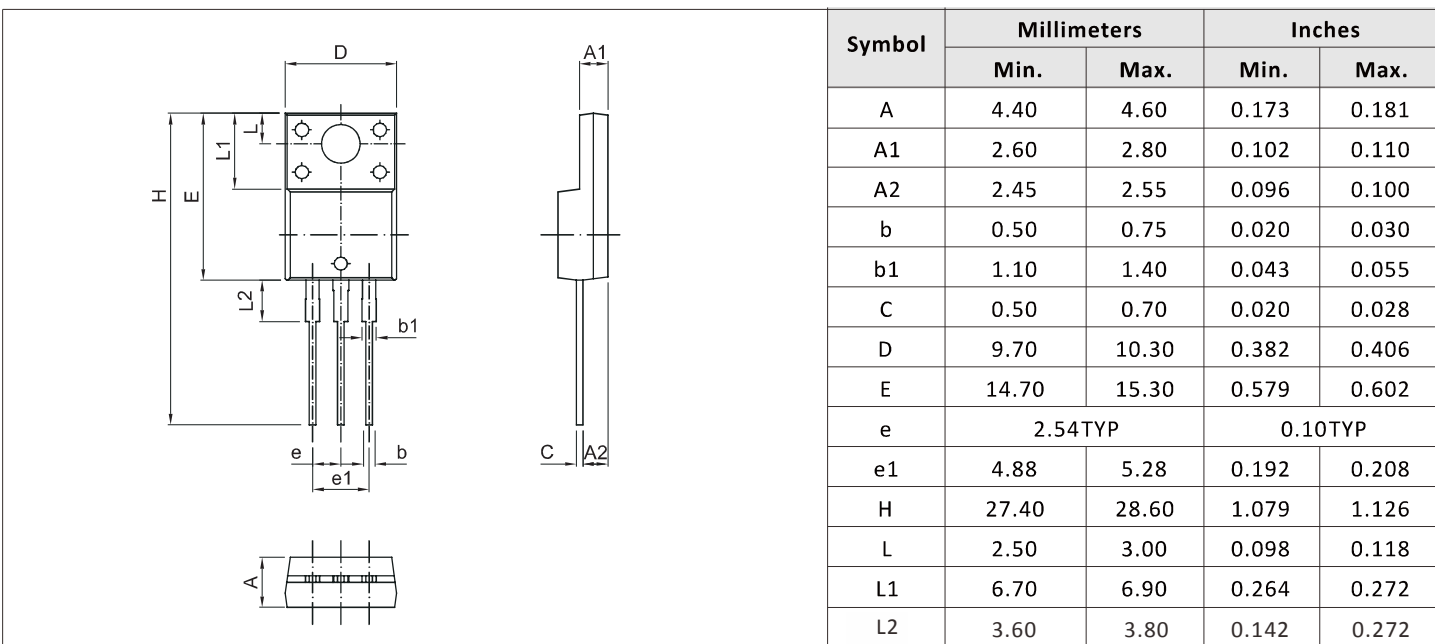



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I_t(d_i/d_t < 50\text{A}/\mu\text{s})$



**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

### TO-220F PACKAGE INFORMATION



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