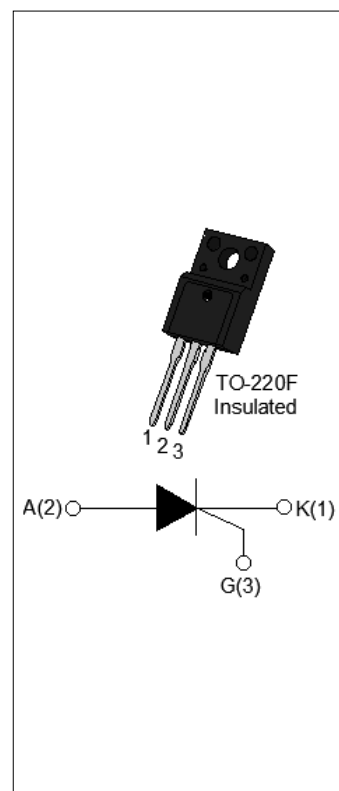




With high ability to withstand the shock loading of large current, JCT151F-650R of silicon controlled rectifiers provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. From all three terminals to external heatsink, JCT151F-650R provides a rated insulation voltage of 2000 V_{RMS}, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.



Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	650	V
I_{GT}	15	mA

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-125	
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	650	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	650	V
Average on-state current ($T_C = 91^\circ\text{C}$)	$I_{T(AV)}$	7.5	A
RMS on-state current ($T_C = 91^\circ\text{C}$)	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current ($t_p=10\text{ms}, T_j=25^\circ\text{C}$)	I_{TSM}	120	A
Non repetitive surge peak on-state current ($t_p=8.3\text{ms}, T_j=25^\circ\text{C}$)		132	
I^2t value for fusing ($t_p=10\text{ms}, T_j=25^\circ\text{C}$)	I^2t	72	A^2s
Critical rate of rise of on-state current ($I_G=2 I_{GT}, f=100\text{Hz}, T_j=125^\circ\text{C}$)	di/dt	100	A/s

Peak gate current ($t_p=20\text{ s}$, $T_j=125\text{ }^\circ\text{C}$)	I_{GM}	4	A
Average gate power dissipation ($T_j=125\text{ }^\circ\text{C}$)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25\text{ }^\circ\text{C}$; non-repetitive,off-state;FIG.7)	V_{pp}	0.7	kV

($T_j=25\text{ }^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V\ R_L=33$	-	-	15	mA
V_{GT}		-	-	1	V
V_{GD}	$V_D=V_{DRM}\ T_j=125\text{ }^\circ\text{C}\ R_L=3.3K$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	40	mA
I_H	$I_T=100mA$	-	-	30	mA
dV/dt	$V_D=436V$ Gate Open $T_j=125\text{ }^\circ\text{C}$	800	-	-	V/s
t_{on}	$I_G=20mA\ I_A=200mA\ I_R=20mA$ $T_j=25\text{ }^\circ\text{C}$	-	3	-	s
t_{off}		-	50	-	

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=23A\ t_p=380\text{ s}$	$T_j=25\text{ }^\circ\text{C}$	1.6	V
V_{TO}	Threshold voltage	$T_j=125\text{ }^\circ\text{C}$	0.77	V
R_D	Dynamic resistance	$T_j=125\text{ }^\circ\text{C}$	27	
I_{DRM}	$V_D=V_{DRM}\ V_R=V_{RRM}$	$T_j=25\text{ }^\circ\text{C}$	5	A
I_{RRM}		$T_j=125\text{ }^\circ\text{C}$	0.2	mA

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	2	$^\circ\text{C}/W$
$R_{th(j-a)}$	junction to ambient (DC)	55	$^\circ\text{C}/W$

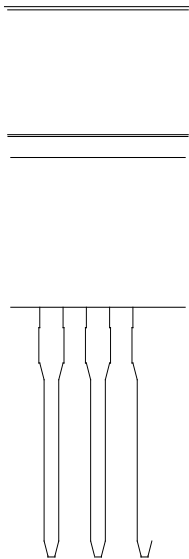
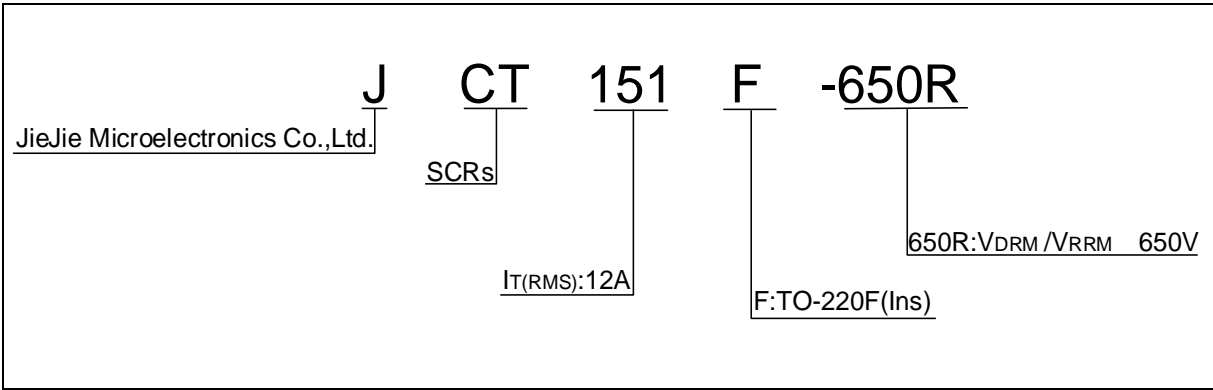
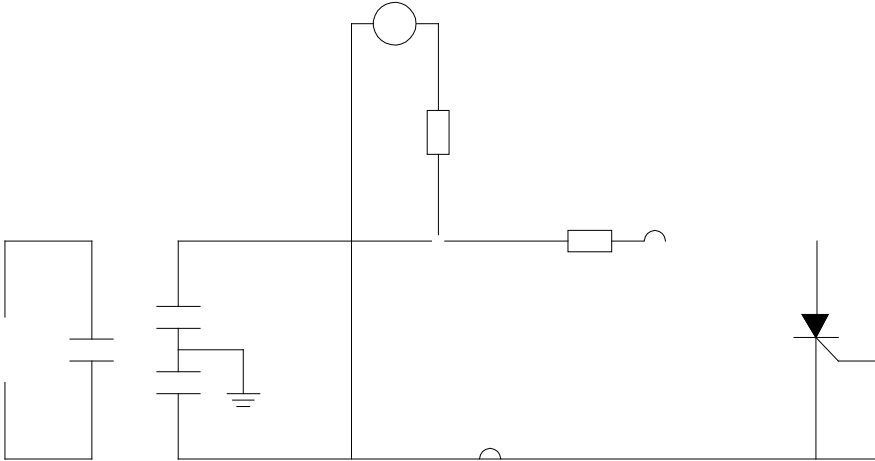


FIG.1 Maximum power dissipation versus
RMS on-state current

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

FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.




Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT151F-650R	650	15	TO-220F(Ins)	50	Tube

Document Revision History

Date	Revision	Changes
Apr.12, 2023	A.1.0	Last update



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