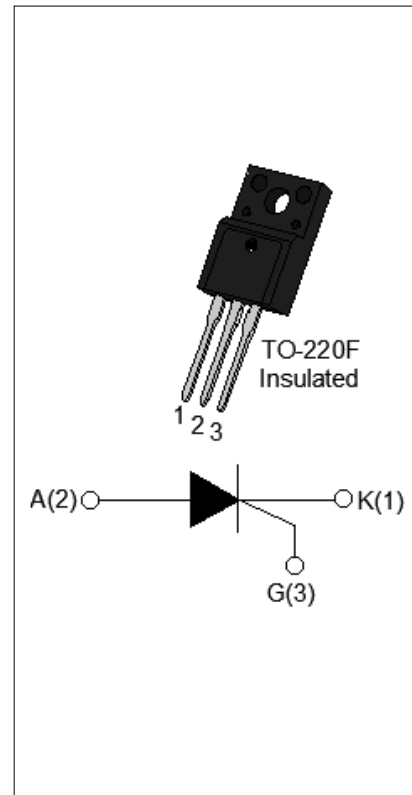




With high ability to withstand the shock loading of large current, JCT825F SCR provides high  $dV/dt$  rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. From all three terminals to external heatsink, JCT825F 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
$I_{T(RMS)}$	25	A
$V_{DRM}/V_{RRM}$	800	V
$I_{GT}$	20	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 ( $T_j=25^\circ C$ )	$V_{DRM}$	800	V
Repetitive peak reverse voltage ( $T_j=25^\circ C$ )	$V_{RRM}$	800	V
Average on-state current ( $T_c = 60^\circ C$ )	$I_{T(AV)}$	16	A
RMS on-state current ( $T_c = 60^\circ C$ )	$I_{T(RMS)}$	25	A
Non repetitive surge peak on-state current ( $t_p=10ms, T_j=25^\circ C$ )	$I_{TSM}$	320	A
Non repetitive surge peak on-state current ( $t_p=8.3ms, T_j=25^\circ C$ )		352	
$I^2t$ value for fusing ( $t_p=10ms, T_j=25^\circ C$ )	$I^2t$	512	$A^2s$
Critical rate of rise of on-state current ( $I_G=2 I_{GT}, f=100Hz, T_j=125^\circ C$ )	$di/dt$	200	$A/\mu s$

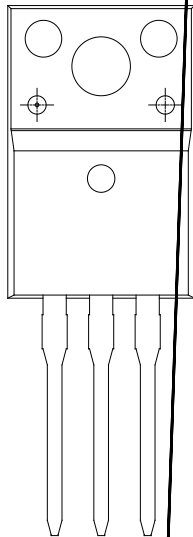
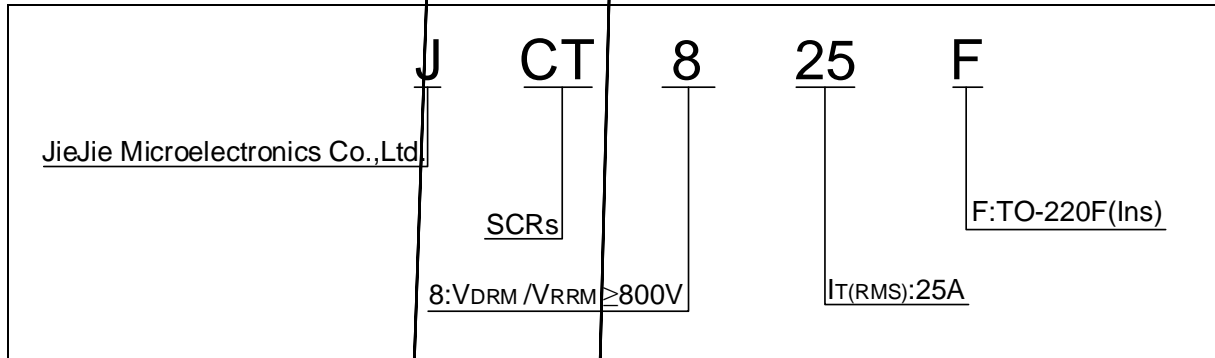
Peak gate current ( $t_p=20\mu s$ , $T_j=125$ )	$I_{GM}$	5	A
Average gate power dissipation ( $T_j=125$ )	$P_{G(AV)}$	1	W
Peak gate power	$P_{GM}$	20	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive,off-state;FIG.7)	$V_{pp}$	0.5	kV

( $T_j=25$  unless otherwise specified)

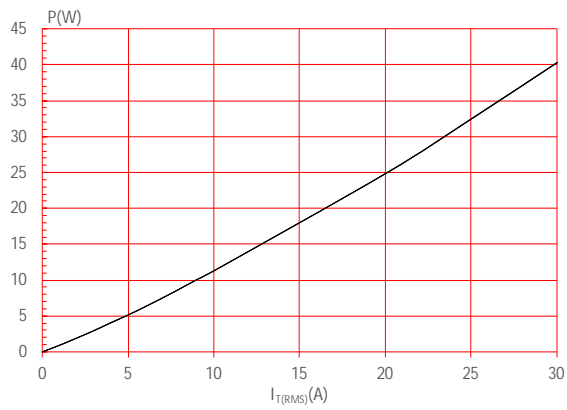
Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12V$ $R_L=33$	-	-	20	mA
$V_{GT}$		-	-	1	V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=125$ $R_L=3.3K$	0.2	-	-	V
$I_L$	$I_G=1.2I_{GT}$	-	-	70	mA
$I_H$	$I_T=500mA$	-	-	60	mA
dV/dt	$V_D=540V$ Gate Open $T_j=125$	1000	-	-	V/ $\mu s$
$t_{on}$	$I_G=20mA$ $I_A=200mA$ $I_R=20mA$ $T_j=25$	-	2	-	$\mu s$
$t_{off}$		-	50	-	

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=50A$ $t_p=380\mu s$	$T_j=25$	1.5	V
$V_{TO}$	Threshold voltage	$T_j=125$	0.72	V
$R_D$	Dynamic resistance	$T_j=125$	16	m
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25$	5	$\mu A$
$I_{RRM}$		$T_j=125$	0.7	mA

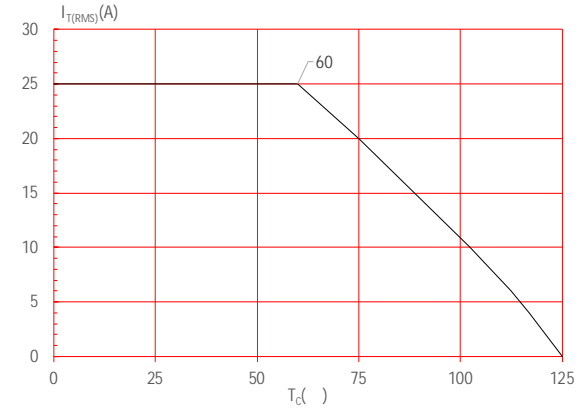
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	2.1	$\text{/W}$
$R_{th(j-a)}$	junction to ambient (DC)	62	$\text{/W}$



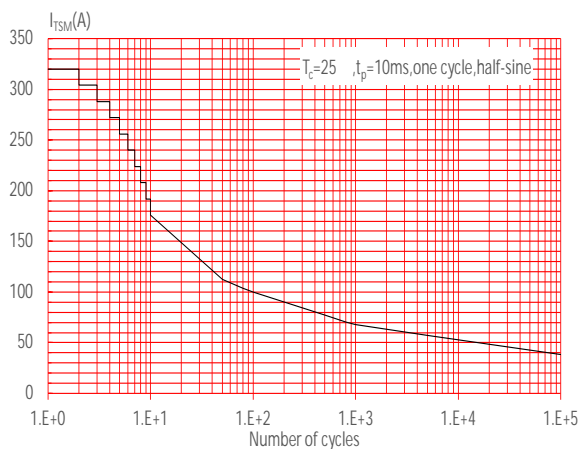
**FIG.1** Maximum power dissipation versus RMS on-state current



**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

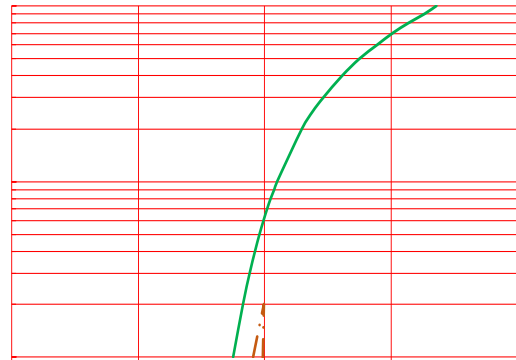
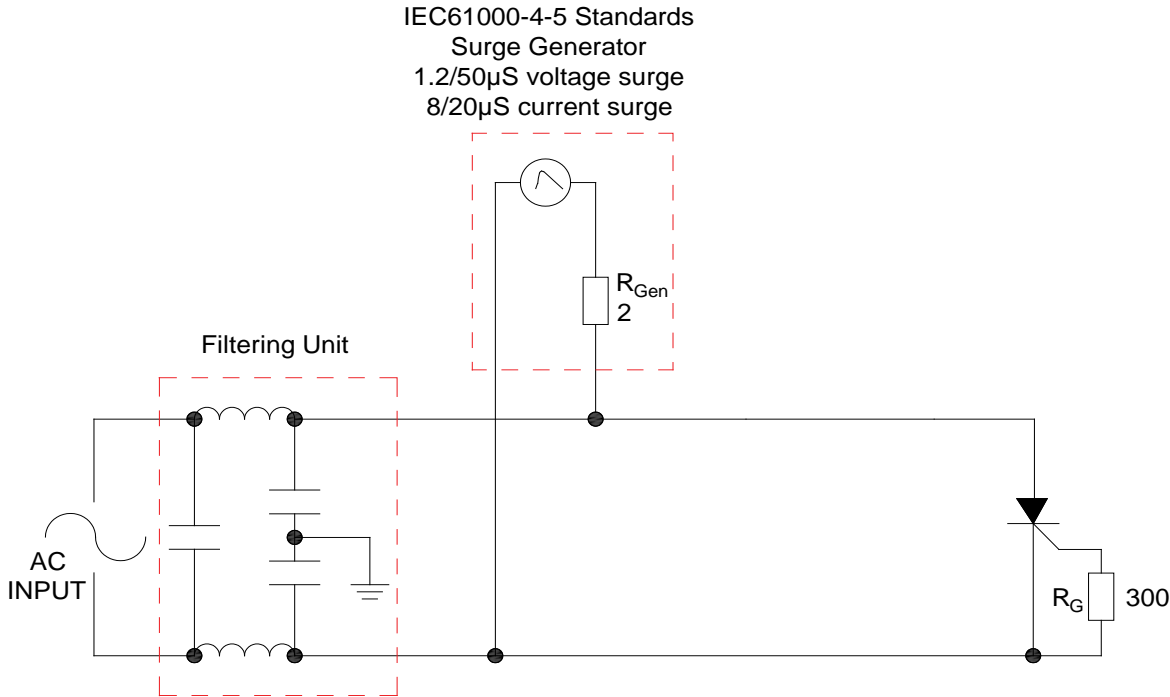


FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



Refer to Instructions for installation of plastic-sealed in-line power devices released by JieJie


Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT825F	800	20	TO-220F(Ins)	50	Tube

**Document Revision History**

Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update



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