



JCT840F 40A SCR

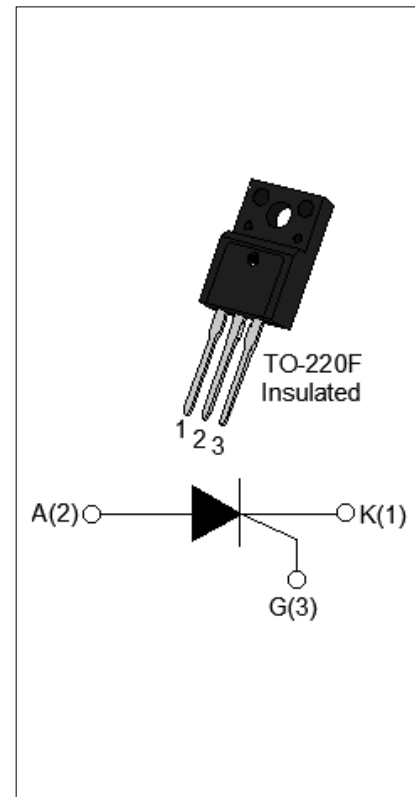
Rev.A.1.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT840F 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, JCT840F provides a rated insulation voltage of 2000 V_{RMS} , complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM}/V_{RRM}	800	V
I_{GT}	35	mA



ABSOLUTE MAXIMUM RATINGS

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 ($T_c = 56^\circ C$)	$I_{T(AV)}$	25	A
RMS on-state current ($T_c = 56^\circ C$)	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current ($t_p=10ms, T_j=25^\circ C$)	I_{TSM}	500	A
Non repetitive surge peak on-state current ($t_p=8.3ms, T_j=25^\circ C$)		540	
I^2t value for fusing ($t_p=10ms, T_j=25^\circ C$)	I^2t	1250	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}, f=100Hz, T_j=125^\circ C$)	di/dt	150	$A/\mu s$

TEL

Peak gate current ($t_p=20\mu s$, $T_j=125$)	I_{GM}	10	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

ELECTRICAL CHARACTERISTICS ($T_j=25$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V$ $R_L=33$	-	-	35	mA
V_{GT}		-	-	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125$ $R_L=3.3K$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	80	mA
I_H	$I_T=500mA$	-	-	70	mA
dV/dt	$V_D=540V$ Gate Open $T_j=125$	1000	-	-	V/ μs
t_{on}	$I_G=40mA$ $I_A=400mA$ $I_R=40mA$ $T_j=25$	-	2	-	μs
t_{off}		-	60	-	

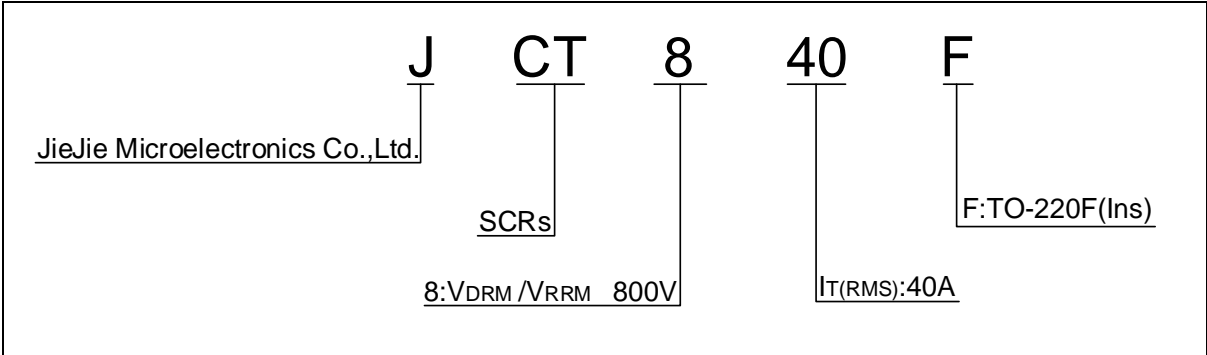
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=80A$ $t_p=380\mu s$	$T_j=25$	1.55	V
V_{TO}	Threshold voltage	$T_j=125$	0.69	V
R_D	Dynamic resistance	$T_j=125$	16	m
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25$	5	μA
I_{RRM}		$T_j=125$	2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	1.3	/W
$R_{th(j-a)}$	junction to ambient (DC)	60	/W

ORDERING INFORMATION



MARKING

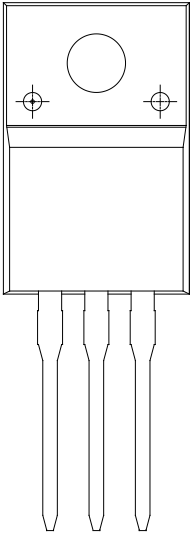
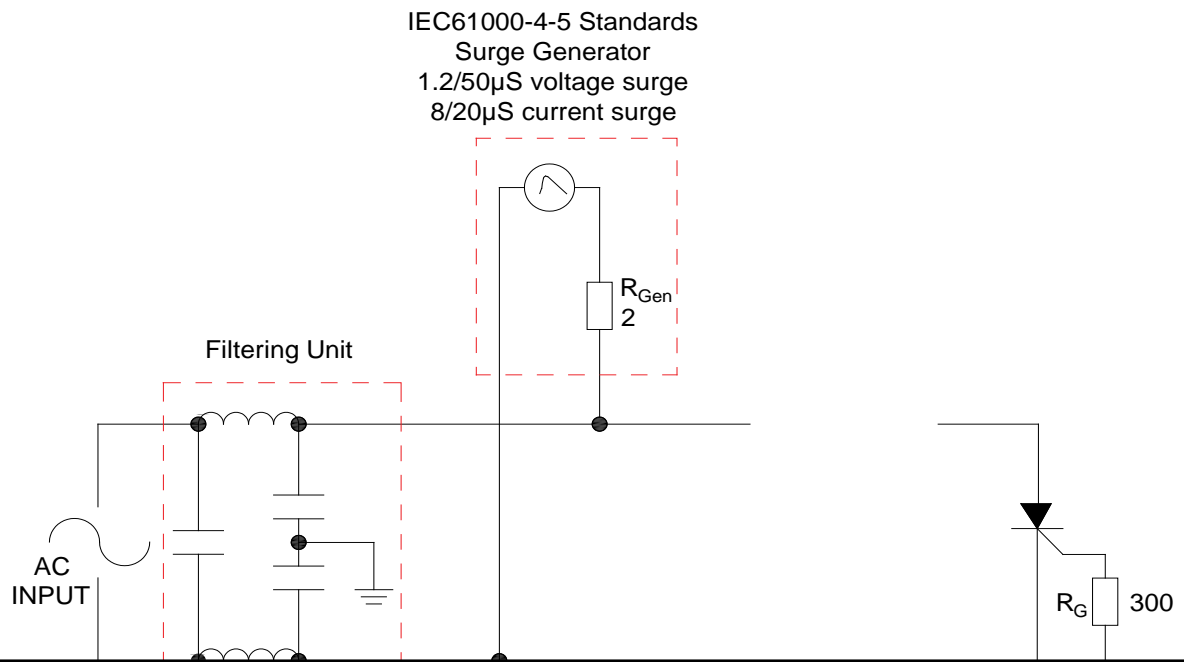


FIG.1 Maximum power dissipation versus RMS on-state current

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

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



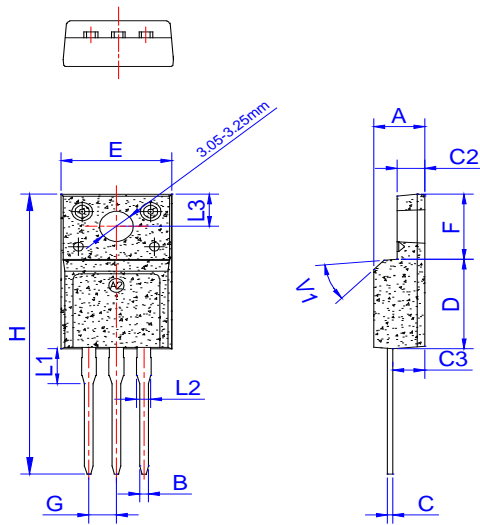
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT840F	800	35	TO-220F(Ins)	50	Tube

Document Revision History

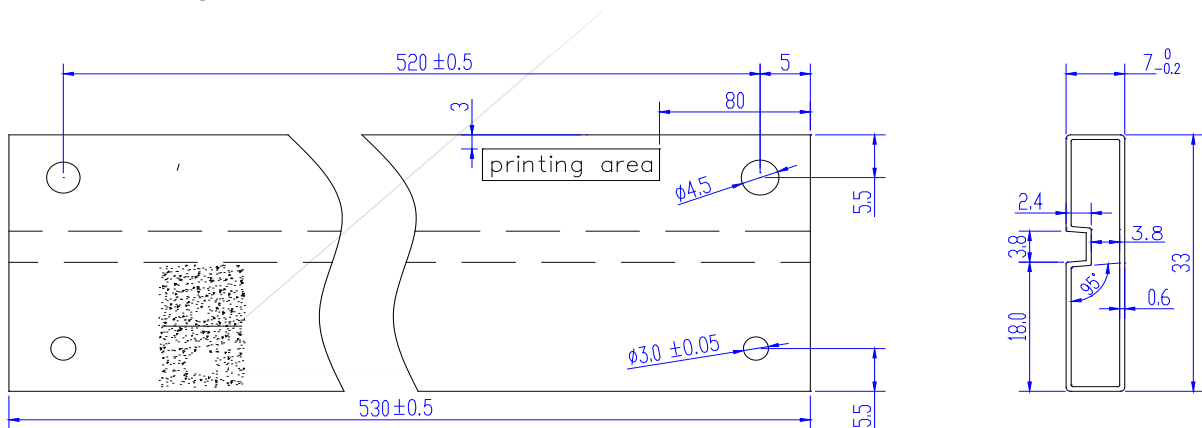
Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update

PACKAGE MECHANICAL DATA




Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	3.20		3.80	0.126		0.150
L2	1.14		1.70	0.045		0.067
L3	3.20		3.60	0.126		0.142
V1		45°			45°	

DELIVERY MODE



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