

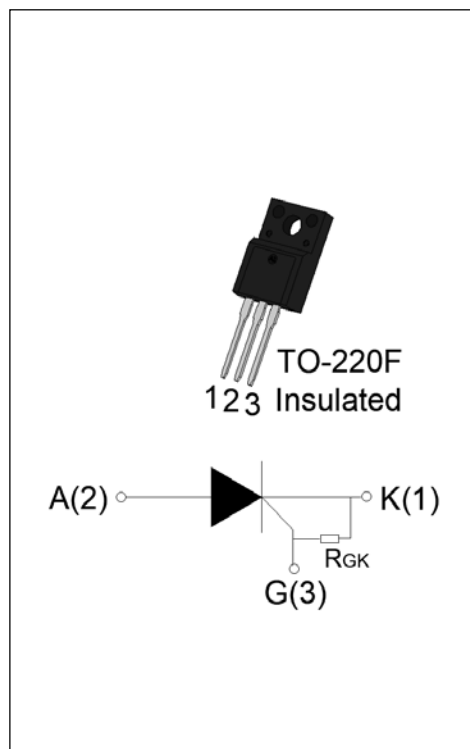


DESCRIPTION:

The JR0805F SCR with the parallel resistor between Gate and Cathode, $R_{GK}=10\sim 80k\Omega$, is especially recommended for use on straight hair, igniter, anion generator, etc. From all three terminals to external heatsink, JR0805F 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
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	≤ 200	μA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range	T_j	-40-125 ^①	$^{\circ}C$
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	600	V
Average on-state current ($T_c \leq 92^{\circ}C$)	$I_{T(AV)}$	5	A
RMS on-state current ($T_c \leq 92^{\circ}C$)	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current ($t_p=10ms, T_j=25^{\circ}C$)	I_{TSM}	80	A
Non repetitive surge peak on-state current ($t_p=8.3ms, T_j=25^{\circ}C$)		88	
I^2t value for fusing ($t_p=10ms, T_j=25^{\circ}C$)	I^2t	32	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	50	$A/\mu s$
Peak gate current ($t_p=20\mu s, T_j=125^{\circ}C$)	I_{GM}	4	A

Average gate power dissipation ($T_j=125^\circ\text{C}$)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	5	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	0.5	kV

NOTE 1: When we parallel connect a $\leq 1\text{K}\Omega$ resistor between Gate and Cathode, the T_j can reach 125°C ; if without this resistor, the T_j only can reach 110°C .

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	-	-	200	μA
V_{GT}		-	-	0.8	V
V_{GD}	$V_D=V_{DRM } T_j=125^\circ\text{C}$	0.2	-	-	V
I_L	$I_G=1.2 I_{GT}$	-	-	6	mA
I_H	$I_T=0.1\text{A}$	-	-	5	mA
dV/dt	$V_D=400\text{V } T_j=125^\circ\text{C } R_{GK}=1\text{K}\Omega$	50	-	-	V/ μs
	$V_D=400\text{V } T_j=125^\circ\text{C } R_{GK}=220\Omega$	250	-	-	
t_{on}	$I_G=10\text{mA } I_A=20\text{mA } I_R=2\text{mA}$	-	2	-	μs
t_{off}	$T_j=25^\circ\text{C}$	-	50	-	μs

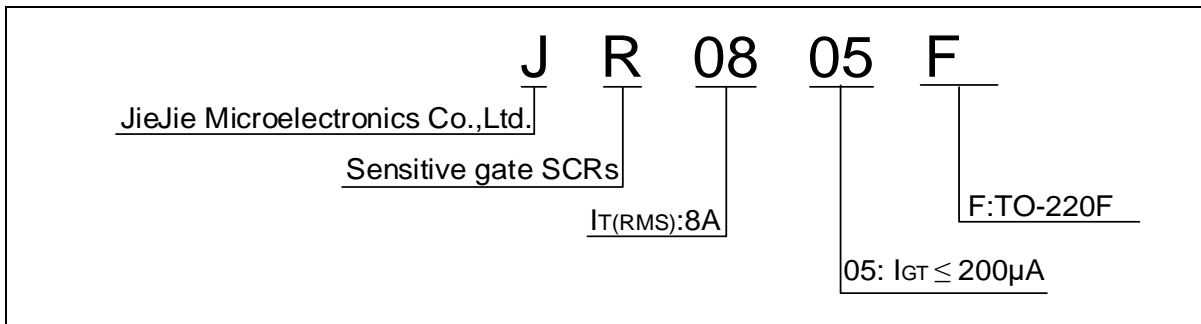
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=16\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.55	V
V_{TO}	Threshold voltage	$T_j=125^\circ\text{C}$	0.79	V
R_D	Dynamic resistance	$T_j=125^\circ\text{C}$	0.02	Ω
I_{DRM}	$V_D=V_{DRM } V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=125^\circ\text{C}$	0.5	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	3	$^\circ\text{C/W}$
$R_{th(j-a)}$	junction to ambient (DC)	60	$^\circ\text{C/W}$

ORDERING INFORMATION



MARKING

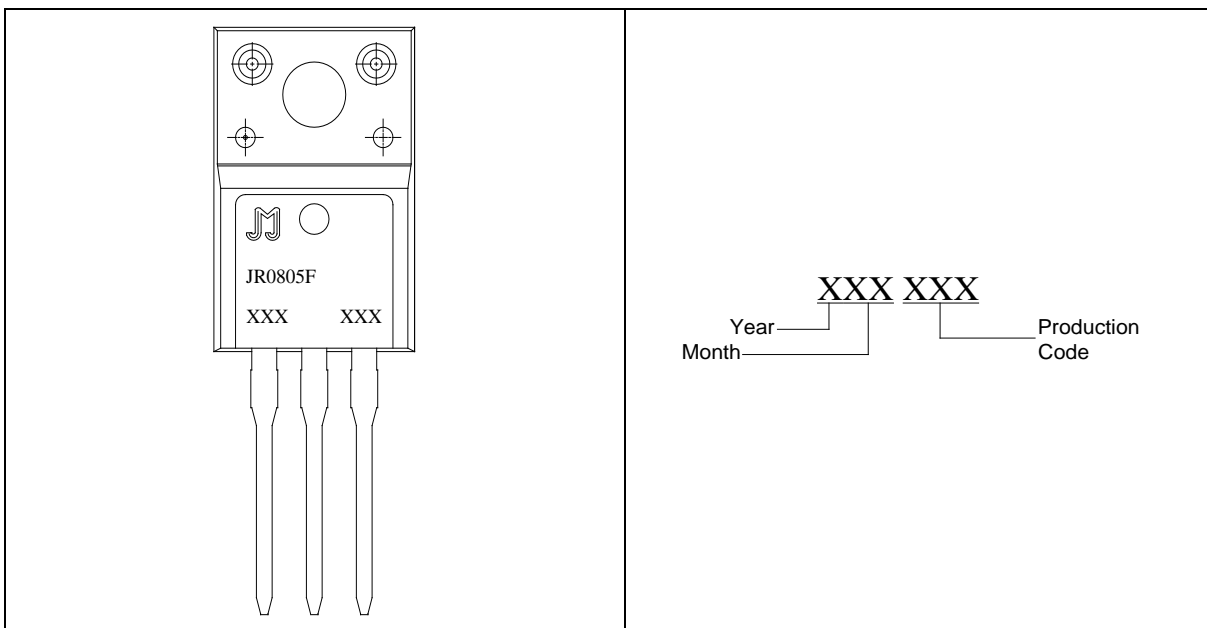


FIG.1 Maximum power dissipation versus RMS on-state current

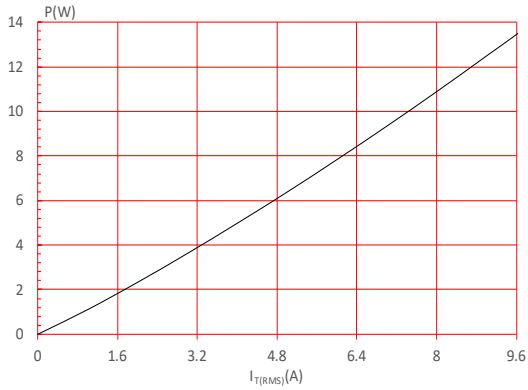


FIG.2: RMS on-state current versus case temperature

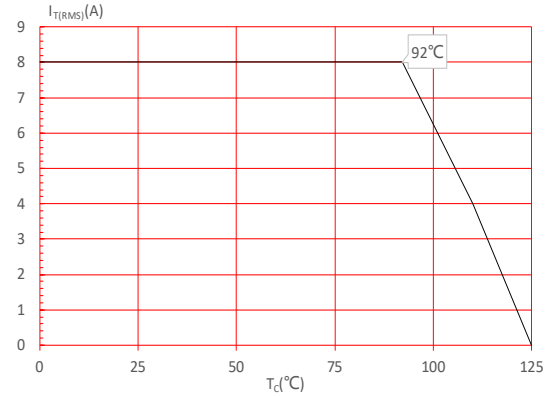


FIG.3: Surge peak on-state current versus number of cycles

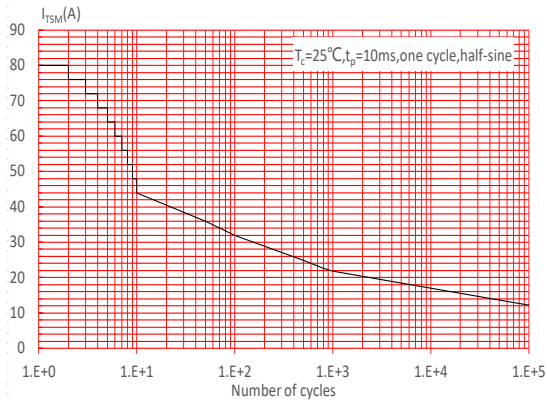


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

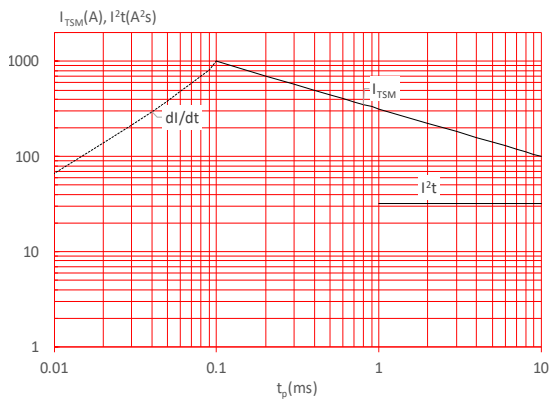


FIG.4: On-state characteristics

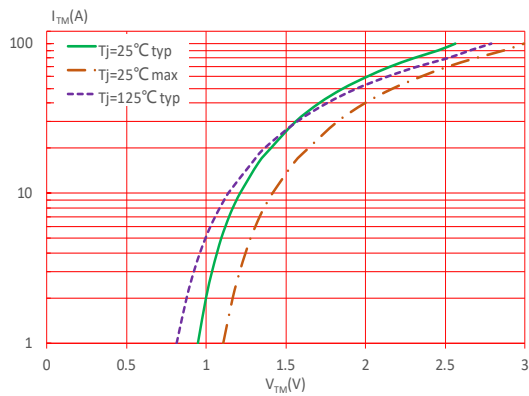


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

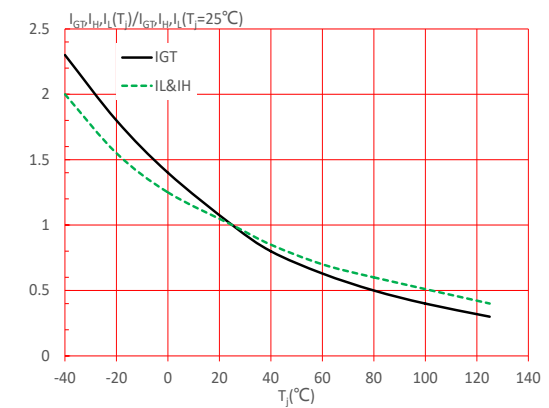
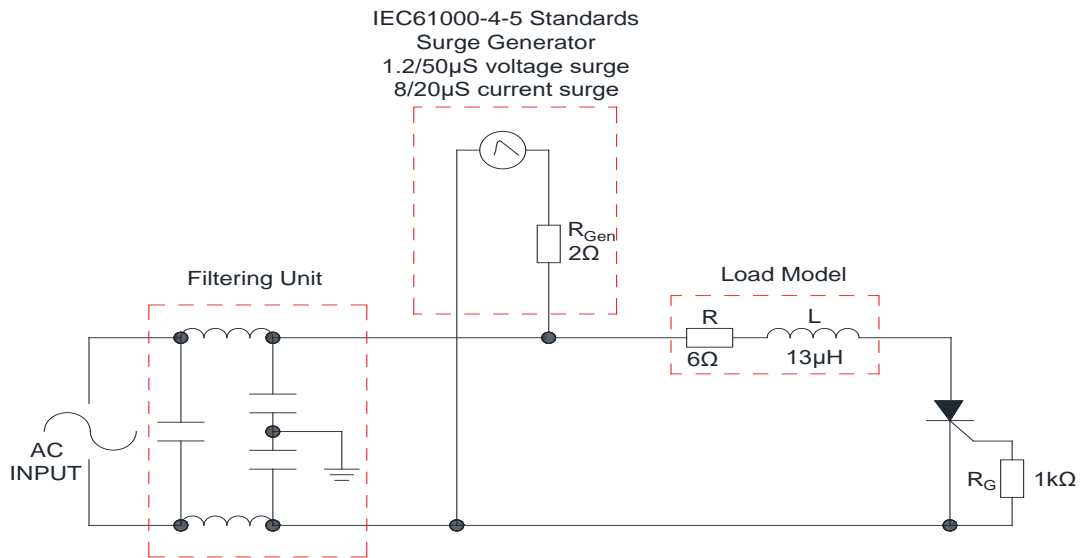


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



SHAPING AND SOLDERING PARAMETERS

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

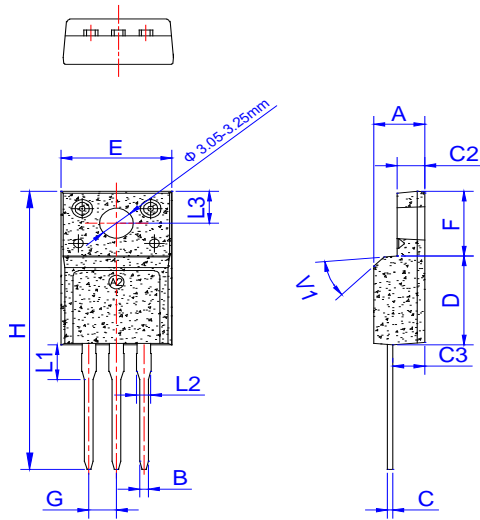
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(μ A)	Package	Base qty. (pcs)	Delivery mode
JR0805F	600	≤ 200	TO-220F	50	Tube

Document Revision History

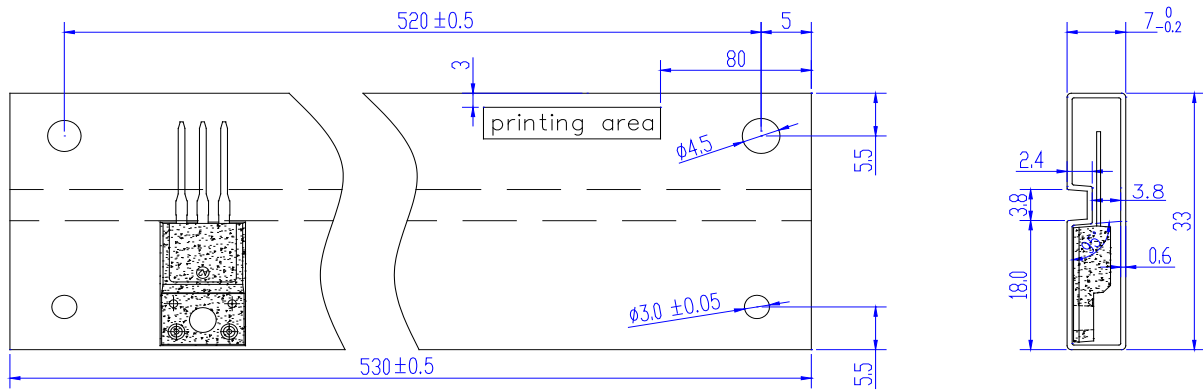
Date	Revision	Changes
Apr.10, 2023	A.1.0	Last update

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



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220F	TUBE	50	1,000	5,000

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