



JCT825C 25A SCR

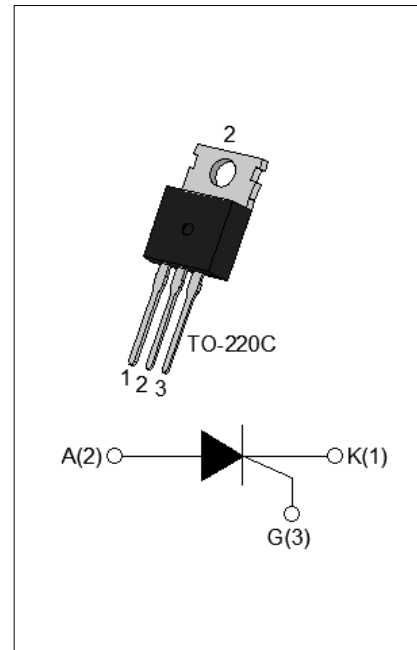
Rev.A.1.1

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT825C 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. Package TO-220C is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
V_{DRM}/V_{RRM}	800	V
I_{GT}	20	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 ($T_j=25^\circ\text{C}$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	800	V
Average on-state current ($T_c = 102^\circ\text{C}$)	$I_{T(AV)}$	16	A
RMS on-state current ($T_c = 102^\circ\text{C}$)	$I_{T(RMS)}$	25	A
Non repetitive surge peak on-state current ($t_p=10\text{ms}, T_j=25^\circ\text{C}$)	I_{TSM}	320	A
Non repetitive surge peak on-state current ($t_p=8.3\text{ms}, T_j=25^\circ\text{C}$)		352	
I^2t value for fusing ($t_p=10\text{ms}, T_j=25^\circ\text{C}$)	I^2t	512	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}, f=100\text{Hz}, T_j=125^\circ\text{C}$)	di/dt	200	A/s
Peak gate current ($t_p=20\text{ }\mu\text{s}, T_j=125^\circ\text{C}$)	I_{GM}	5	A
Average gate power dissipation ($T_j=125^\circ\text{C}$)	$P_{G(AV)}$	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}	$V_D=12V R_L=33$	-	-	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 s
t_{on}	$I_G=20mA I_A=200mA I_R=20mA$ $T_j=25$	-	2	-	s
t_{off}		-	50	-	

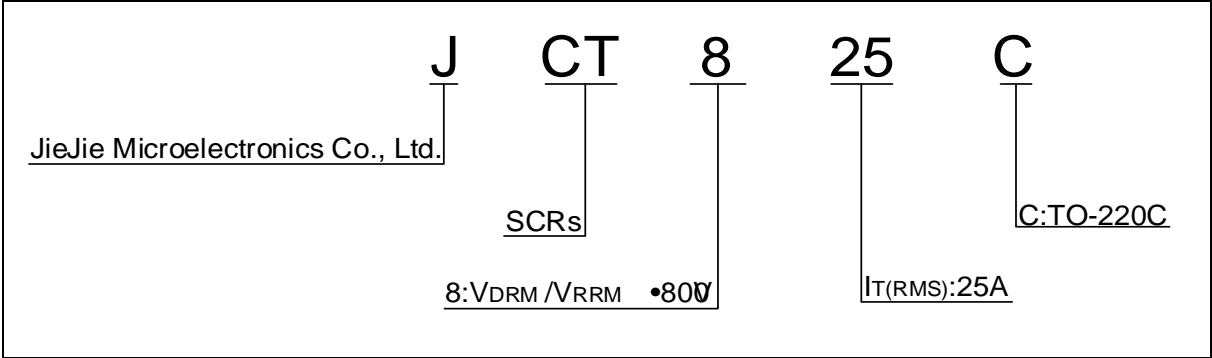
STATIC CHARACTERISTICS

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

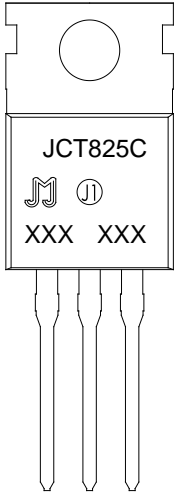
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	0.7	/W
$R_{th(j-a)}$	junction to ambient (DC)	43	/W

ORDERING INFORMATION



MARKING



JCT825C

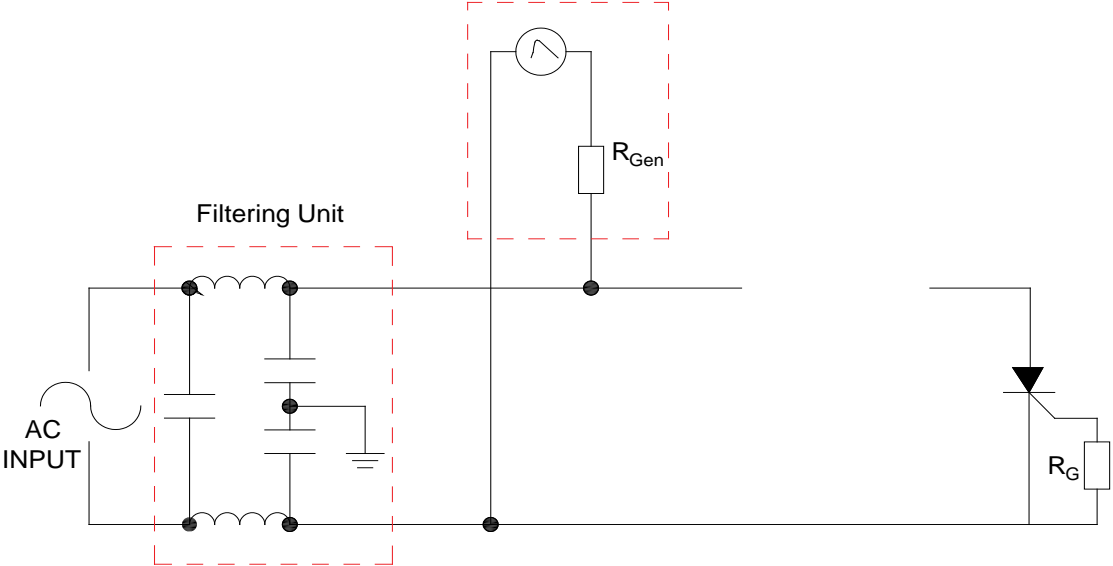
FIG.1: Maximum power dissipation versus RMS on-state current



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

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

IEC61000-4-5 Standards
Surge Generator



ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT825C	800	20	TO-220C	50	Tube

Document Revision History

Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update
Oct.14, 2025	A.1.1	Revise

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