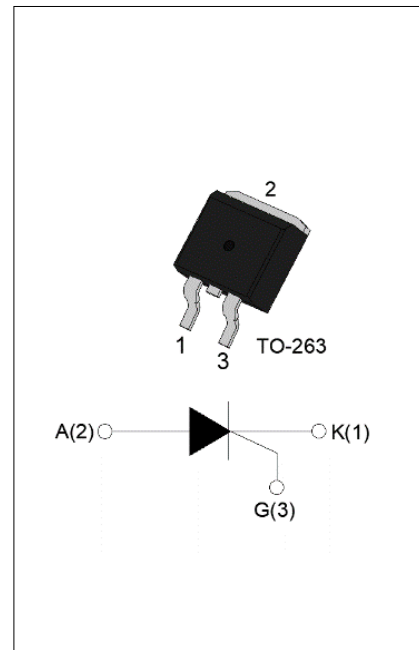




With high ability to withstand the shock loading of large current, JCT640E SCR provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. Package TO-263 is RoHS compliant.

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	35	mA



Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	°C
Operating junction temperature range	T_j	-40-125	°C
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	600	V
Average on-state current ($T_c \leq 82^\circ\text{C}$)	$I_{T(AV)}$	25	A
RMS on-state current ($T_c \leq 82^\circ\text{C}$)	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	500	A
Non repetitive surge peak on-state current ($t_p=8.3\text{ms}$, $T_j=25^\circ\text{C}$)		540	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	1250	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	150	A s
Peak gate current ($t_p=20 \text{ s}$, $T_j=125^\circ\text{C}$)	I_{GM}	10	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 ($T_j=25^{\circ}C$; non-repetitive, off-state; FIG.8)	V_{pp}	0.5	kV

($T_j=25^{\circ}C$ 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}	$V_D=V_{DRM} T_j=125^{\circ}C R_L=3.3K$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	80	mA
I_H	$I_T=500mA$	-	-	70	mA
dV/dt	$V_D=400V$ Gate Open $T_j=125^{\circ}C$	1200	-	-	V s
t_{on}	$I_G=40mA I_A=400mA I_R=40mA$ $T_j=25^{\circ}C$	-	2	-	s
t_{off}		-	60	-	

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=80A t_p=380 s$	$T_j=25^{\circ}C$	1.55	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}C$	0.69	V
R_D	Dynamic resistance	$T_j=125^{\circ}C$	16	
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}C$	5	A
I_{RRM}		$T_j=125^{\circ}C$	1	mA

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	0.8	$^{\circ}C/W$
$R_{th(j-a)}$	junction to ambient (DC, in free air, $S=1cm^2$)	45	$^{\circ}C/W$

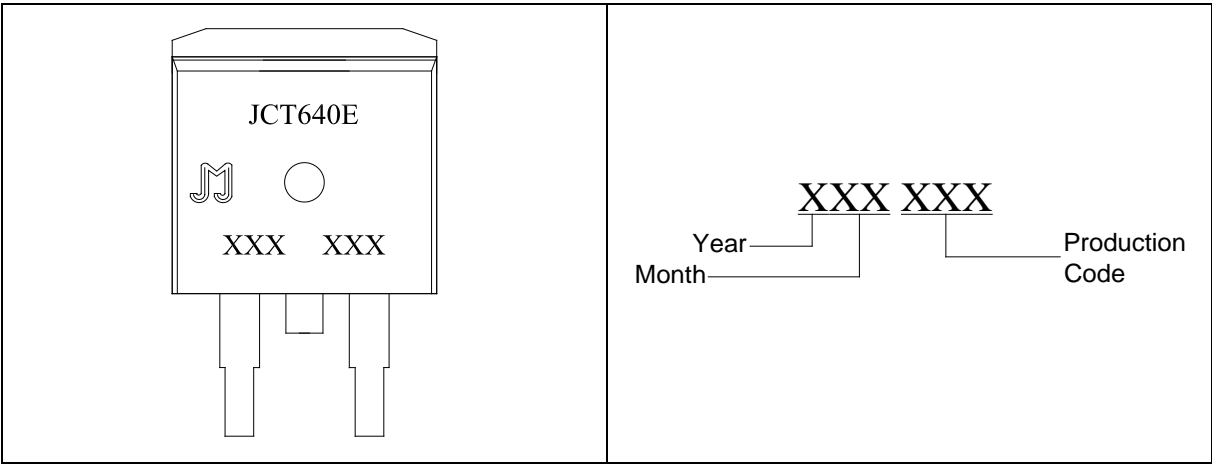
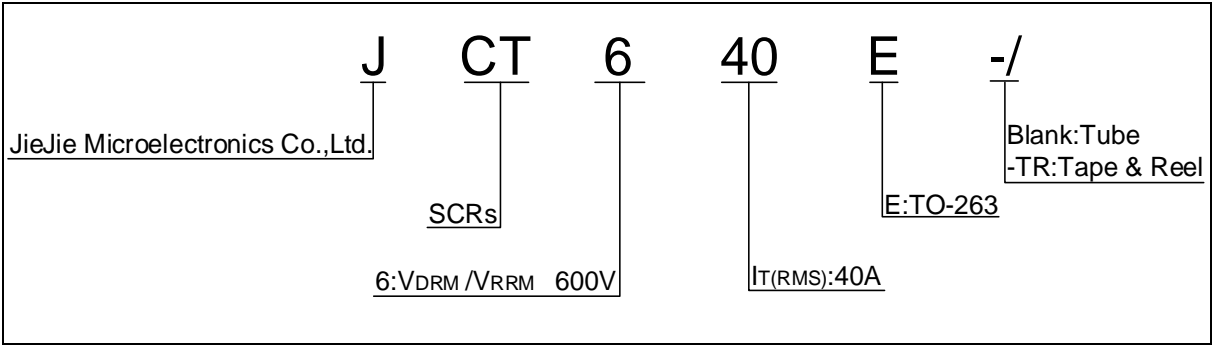


FIG.1 Maximum power dissipation versus RMS on-state current

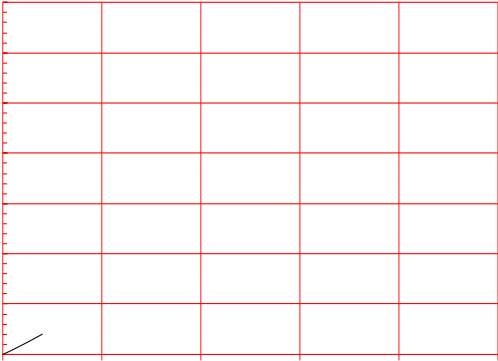


FIG.2: RMS on-state current versus case temperature

FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

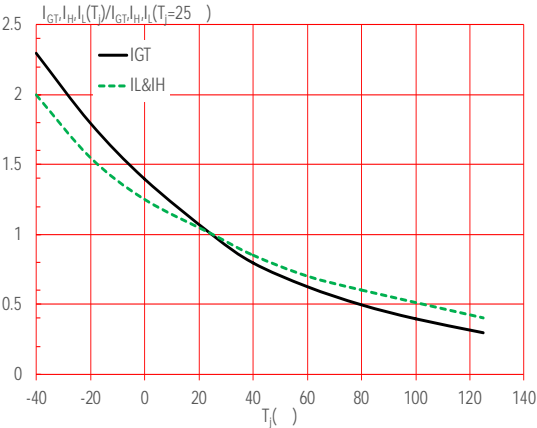
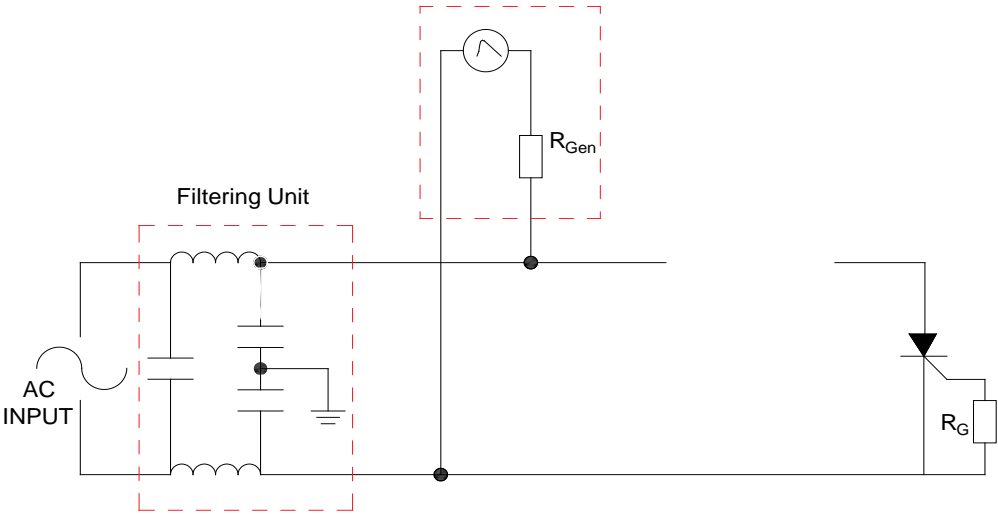


FIG.8: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.

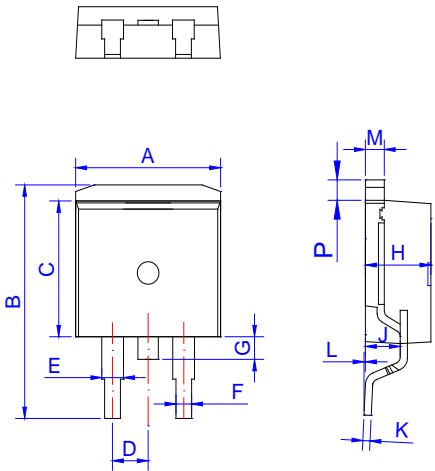
IEC61000-4-5 Standards
Surge Generator



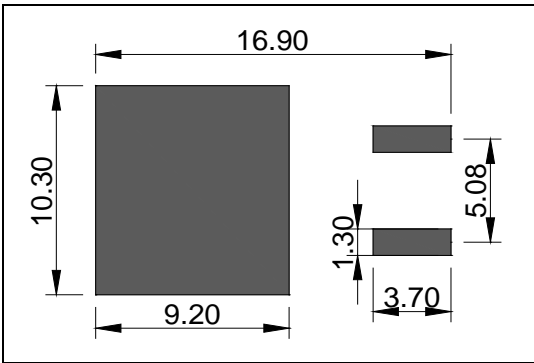
Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JCT640E	600	35	TO-263	50	Tube
JCT640E-TR				800	Tape & Reel


Document Revision History

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



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.37		0.378
D	2.40		2.70	0.094		0.106
E	1.20		1.50	0.047		0.059
F	0.75		0.85	0.029		0.033
G	1.00		1.50	0.039		0.059
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053
P	1.20		1.50	0.047		0.059



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