

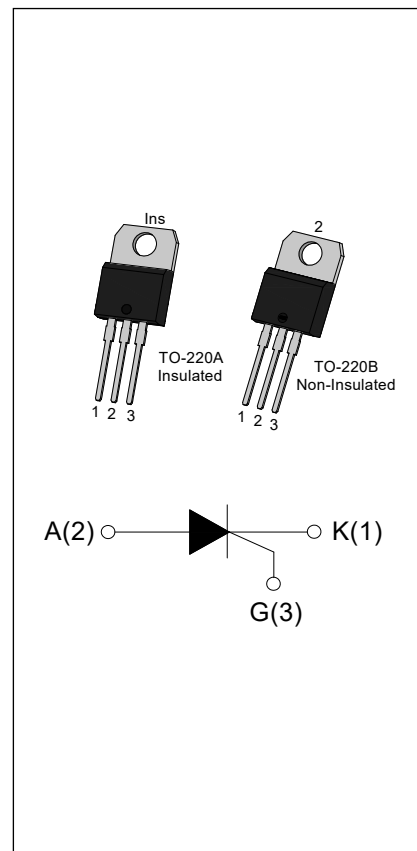


DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT1640 provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. From all three terminals to external heatsink, JCT1640Z and JCT1640A provide a rated insulation voltage of 2500 V_{RMS}, complying with UL standards (File ref: E252906). Package are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
V_{DRM}/V_{RRM}	1600	V
$I_{T(RMS)}$	40	A
I_{GT}	≤ 60	mA



ABSOLUTE MAXIMUM RATINGS

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}	1600	V
Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)		V_{RRM}	1600	V
RMS on-state current	TO-220A(Ins) ($T_C=80^\circ\text{C}$)	$I_{T(RMS)}$	40	A
	TO-220B(Non-Ins) ($T_C=85^\circ\text{C}$)			
Non repetitive surge peak on-state current ($t_p=10\text{ms}$)		I_{TSM}	460	A
I^2t value for fusing ($t_p=10\text{ms}$)		I^2t	1060	A ² s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)		di/dt	100	A/ μs

Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	5	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	-	40	60	mA
V_{GT}		-	-	1.5	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	150	mA
I_H	$I_T=500\text{mA}$	-	-	100	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$	1000	-	-	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=80\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.7	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	10	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	4	mA

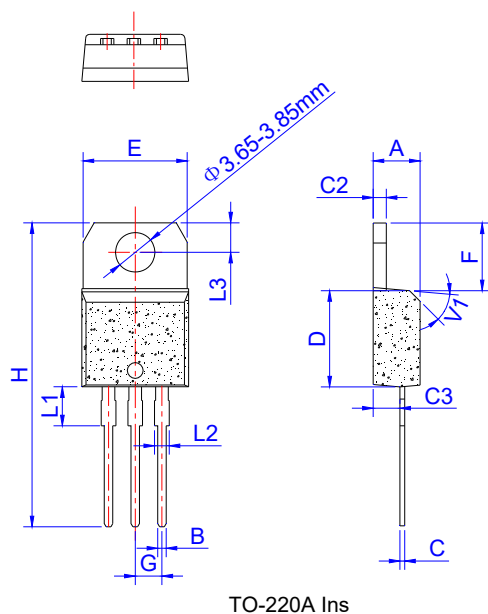
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	1.3	$^{\circ}\text{C}/\text{W}$
		TO-220B(Non-Ins)	1.2	

ORDERING INFORMATION

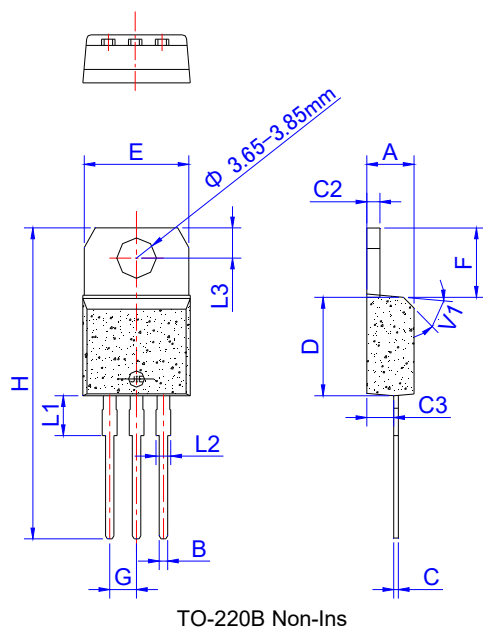
J	CT	16	40	A
JieJie Microelectronics Co.,Ltd	SCRs	16:VDRM/VRRM≥1600V	IT(RMS):40A	A:TO-220A(Ins) B:TO-220B(Non-Ins)

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

PACKAGE MECHANICAL DATA



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A	4.40		4.60	0.173		0.181
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C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.75			0.147	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

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

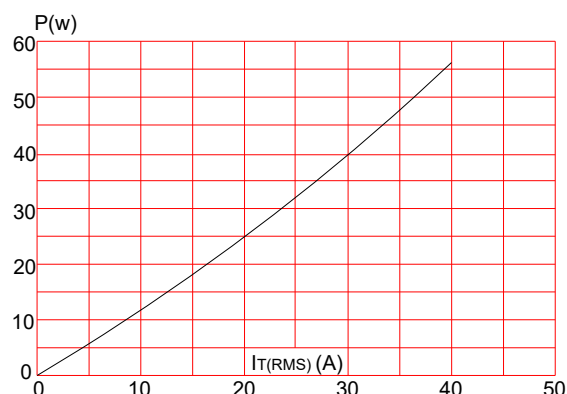


FIG.3: Surge peak on-state current versus number of cycles

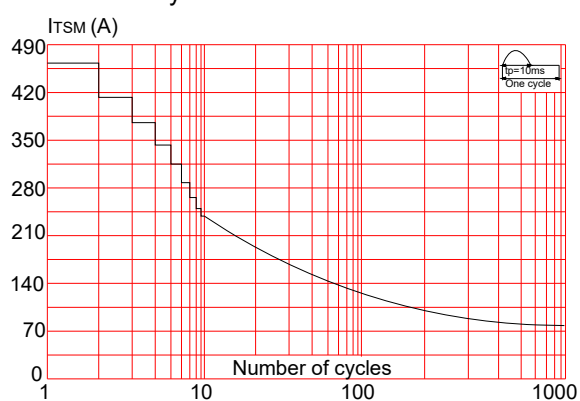


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

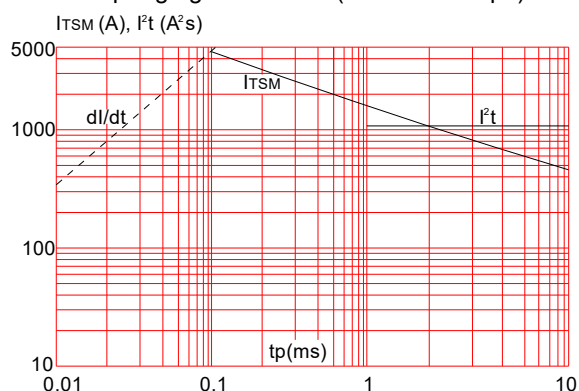


FIG.2: RMS on-state current versus case temperature

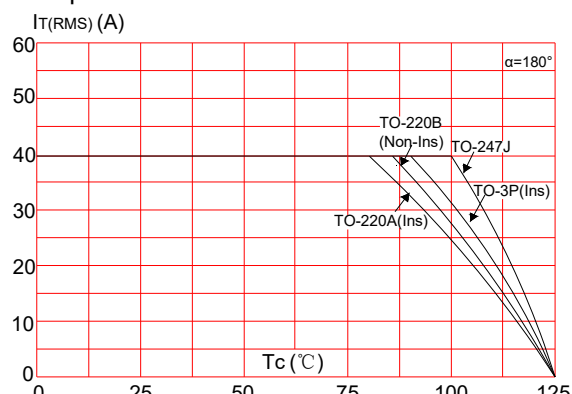


FIG.4: On-state characteristics (maximum values)

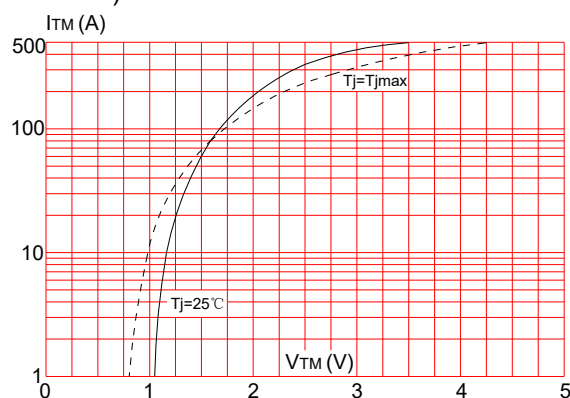
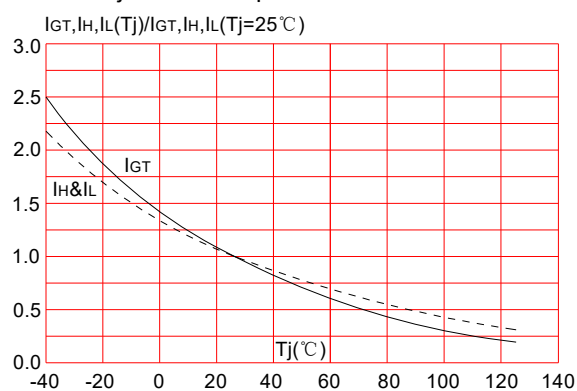


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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