



JX075 Series Sensitive gate SCRs

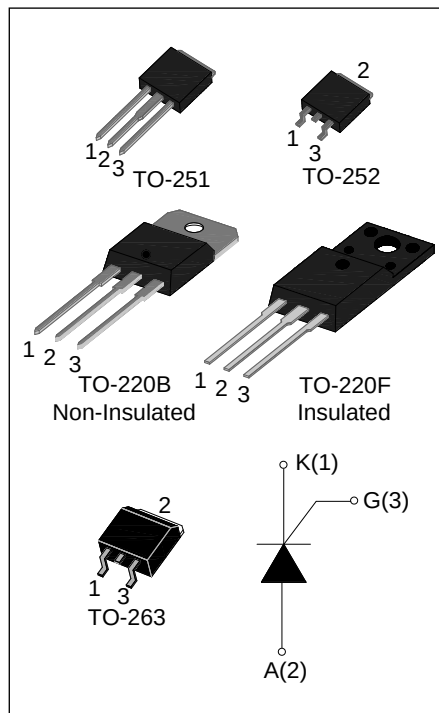
Rev.2.0

DESCRIPTION:

The JX075 SCR series provide high dv/dt rate with strong resistance to electromagnetic interface. They are especially recommended for use on residual current circuit breaker, straight hair, igniter etc. JX075F provides insulation voltage rated at 2000V RMS from all three terminals to external heatsink.

MAIN FEATURES

Symbol	Value	Unit
V_{DRM}/V_{RRM}	1000	V
$I_{T(RMS)}$	12	A
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	-40-110	$^{\circ}C$
Repetitive peak off-state voltage		V_{DRM}	1000	V
Repetitive peak reverse voltage		V_{RRM}	1000	V
RMS on-state current	TO-251/ TO-252/ TO-220B(Non-Ins) ($T_C=90^{\circ}C$)	$I_{T(RMS)}$	12	A
	TO-220F(Ins) ($T_C=85^{\circ}C$)			
	TO-263 ($T_C=95^{\circ}C$)			
Non repetitive surge peak on-state current (tp=10ms)		I_{TSM}	110	A
I^2t value for fusing (tp=10ms)		I^2t	45	A^2s
Critical rate of rise of on-state current		di/dt	50	$A/\mu s$
Peak gate current (tp=20 μs , $T_j=110^{\circ}C$)		I_{GM}	1.2	A

Peak gate power (tp=20μs, Tj=110°C)	P _{GM}	3	W
Average gate power dissipation(Tj=110°C)	P _{G(AV)}	0.2	W

ELECTRICAL CHARACTERISTICS (Tj=25°C unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I _{GT}	V _D =12V R _L =33Ω	-	60	200	μA
V _{GT}		-	-	0.8	V
V _{GD}	V _D =V _{DRM} Tj=110°C	0.1	-	-	V
I _L	I _G =1.2 I _{GT}	-	-	5	mA
I _H	I _T =0.05A	-	-	6	mA
dV/dt	V _D =2/3V _{DRM} Tj=110°C R _{GK} =1KΩ	5	-	-	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V _{TM}	I _{TM} =24A tp=380μs	Tj=25°C	1.6	V
I _{DRM}	V _D =V _{DRM} V _R =V _{RRM}	Tj=25°C	10	μA
I _{RRM}		Tj=110°C	2	mA

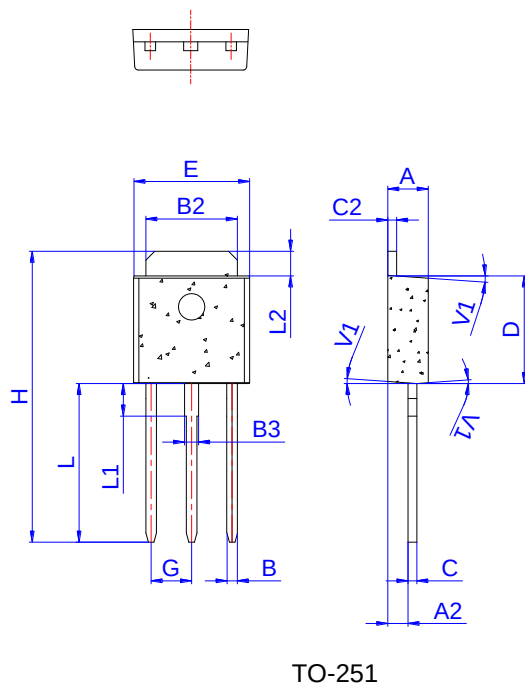
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	junction to case	TO-251/ TO-252/ TO-220F(Ins)	2.2	°C/W
		TO-220B(Non-Ins)	2.0	
		TO-263	1.9	

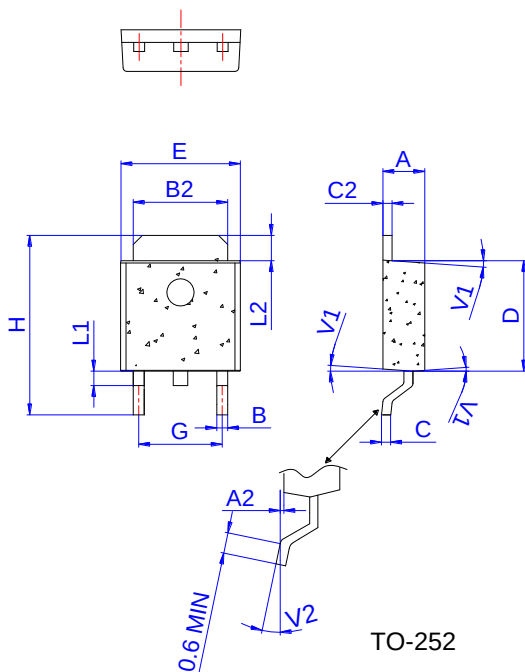
ORDERING INFORMATION

J	X	075	H
JieJie Microelectronics Co.,Ltd	Sensitive gate SCRs	I _{T(RMS)} :12A	E:TO-263 F:TO-220F(Ins) B:TO-220B(Non-Ins) H:TO-251 K:TO-252

PACKAGE MECHANICAL DATA

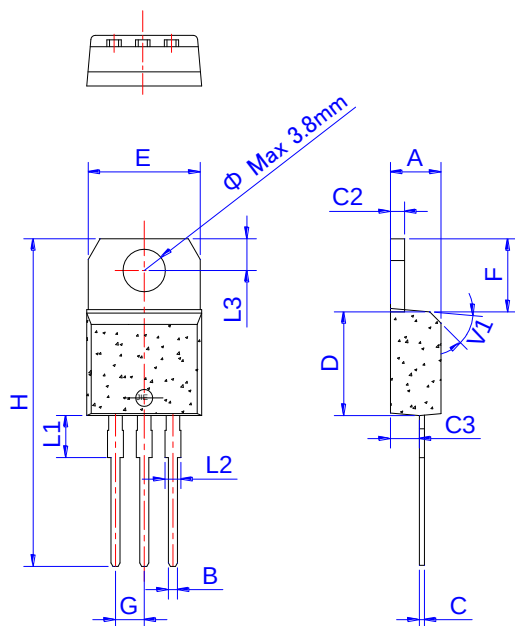


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	



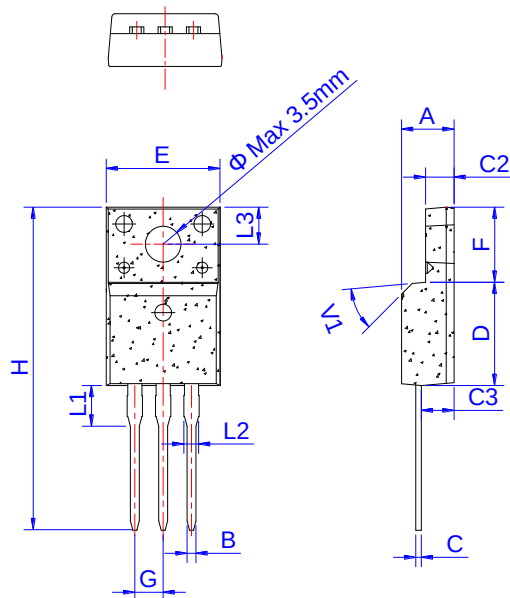
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.6	0.368		0.417
L1	1.30		1.70	0.051		0.067
L2	1.37		1.50	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°

PACKAGE MECHANICAL DATA



TO-220B Non-Ins

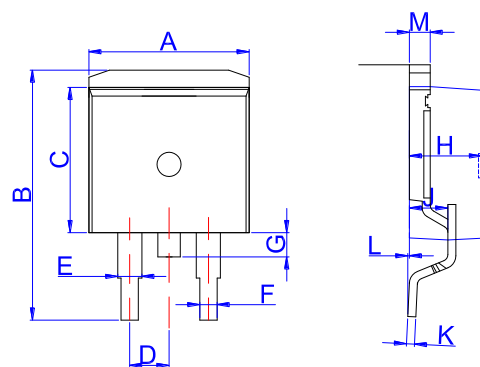
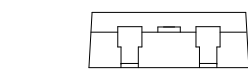
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
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°	



TO-220F Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.80	0.173		0.189
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.48		0.75	0.019		0.030
C2	2.40		2.70	0.094		0.106
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.70		10.3	0.382		0.406
F	6.40		7.00	0.252		0.276
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

PACKAGE MECHANICAL DATA



TO-263

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	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
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

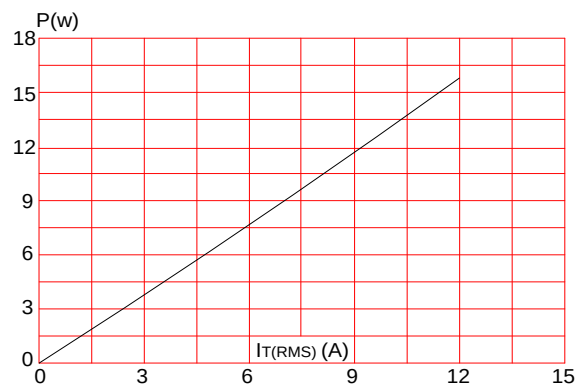
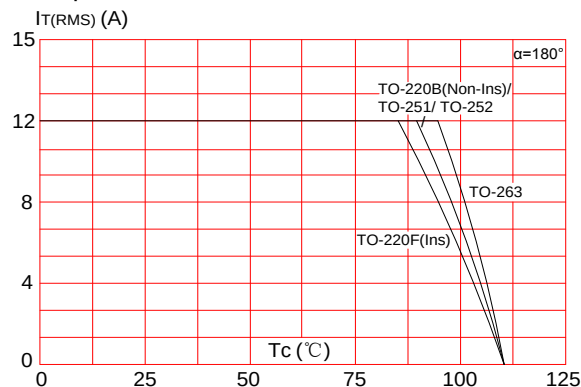
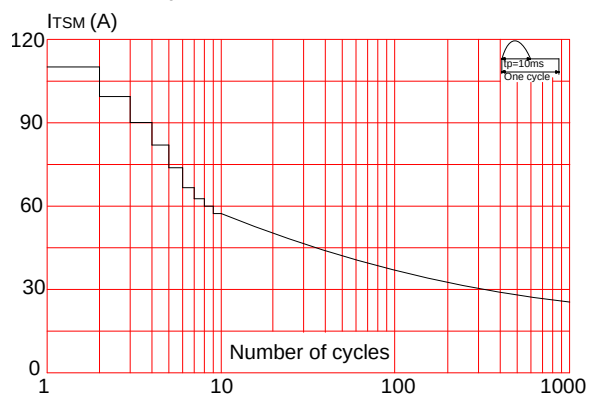
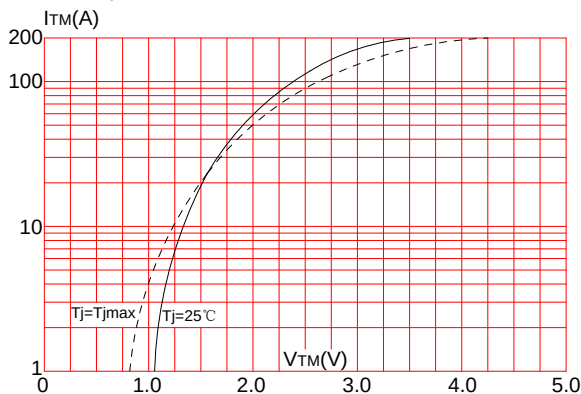
FIG.1 Maximum power dissipation versus RMS on-state current**FIG.2:** RMS on-state current versus case temperature**FIG.3:** Surge peak on-state current versus number of cycles**FIG.4:** On-state characteristics (maximum values)

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 ($di/dt < 50\text{A}/\mu\text{s}$)

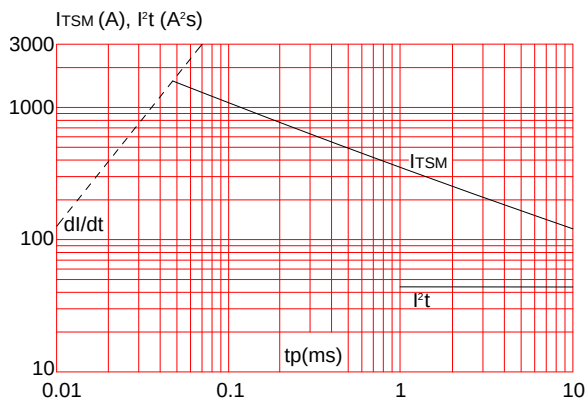
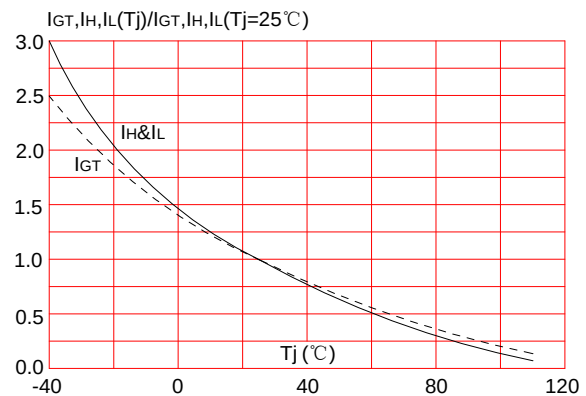


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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