

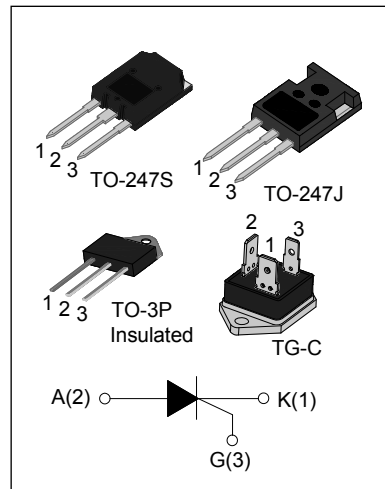


JCT655/855 Series 55A SCRs

Rev.6.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT655/855 SCRs 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, JCTx55Z provides a rated insulation voltage of 2500 V_{RMS}, complying with UL standards (File ref: E252906).



MAIN FEATURES

Symbol	JCT655	JCT855
V _{DRM} / V _{RPM}	600V	800V
I _{T(RMS)}	55A	
I _{GT}	10 - 50 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	V _{DRM}	600/800	V
Repetitive peak reverse voltage	V _{RPM}	600/800	V
RMS on-state current	TO-3P Ins (T _C =80°C)	55	A
	TO-247S/TO-247J (T _C =83°C)		
	TG-C (T _C =82°C)		
Non repetitive surge peak on-state current (tp=10ms)	I _{TSM}	520	A
I ² t value for fusing (tp=10ms)	I ² t	1350	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT})	di/dt	150	A/μs

Peak gate current	I_{GM}	5	A
Peak gate power	P_{GM}	10	W
Average gate power dissipation ($T_j=125^\circ\text{C}$)	$P_{G(AV)}$	1	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	10	15	50	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	$I_G=1.2I_{GT}$	-	-	100	mA
I_H	$I_T=500\text{mA}$	-	-	80	mA
dV/dt	$V_D=2/3V_{DRM} T_j=125^\circ\text{C}$ Gate Open	700	-	-	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter	Value(MAX)	Unit
V_{TM}	$I_{TM}=80\text{A } t_p=380\mu\text{s}$	$T_C=25^\circ\text{C}$	1.6 V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_C=25^\circ\text{C}$	10 μA
I_{RRM}		$T_C=125^\circ\text{C}$	6 mA

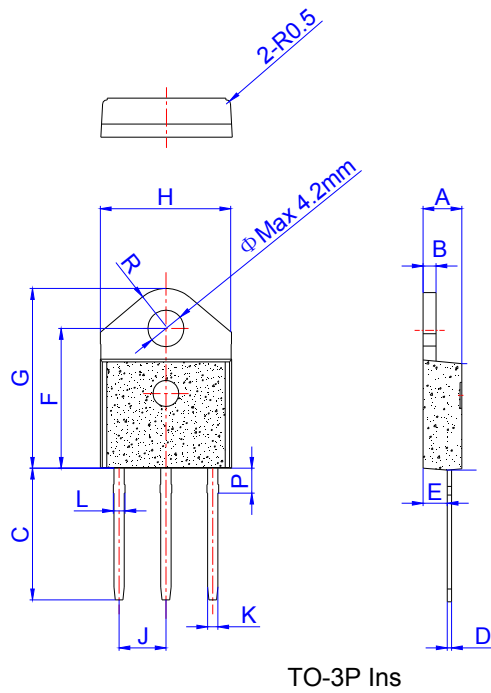
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-3P Ins	0.65
		TO-247S/ TO-247J	0.60
		TG-C	0.62

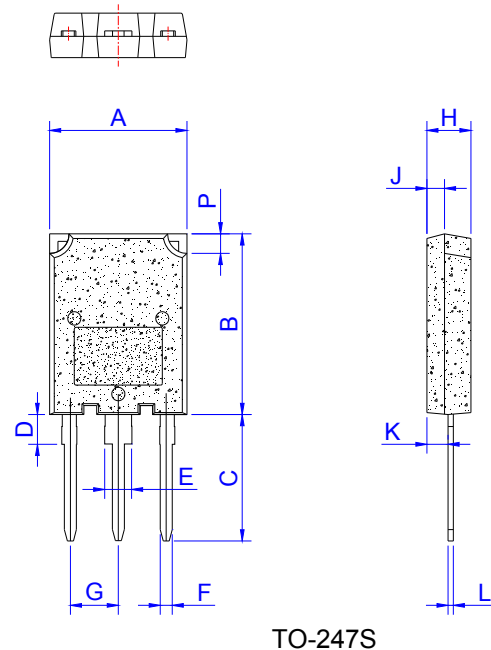
ORDERING INFORMATION

<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p>	<p>CT</p> <p>SCRs</p> <p>6:VDRM/VRRM≥600V 8:VDRM/VRRM≥800V</p>	<p>6</p>	<p>55</p> <p>I_{T(RMS)}:55A</p>	<p>Z</p> <p>T:TG-C Z:TO-3P Ins CS:TO-247S SJ:TO-247J</p>
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PACKAGE MECHANICAL DATA

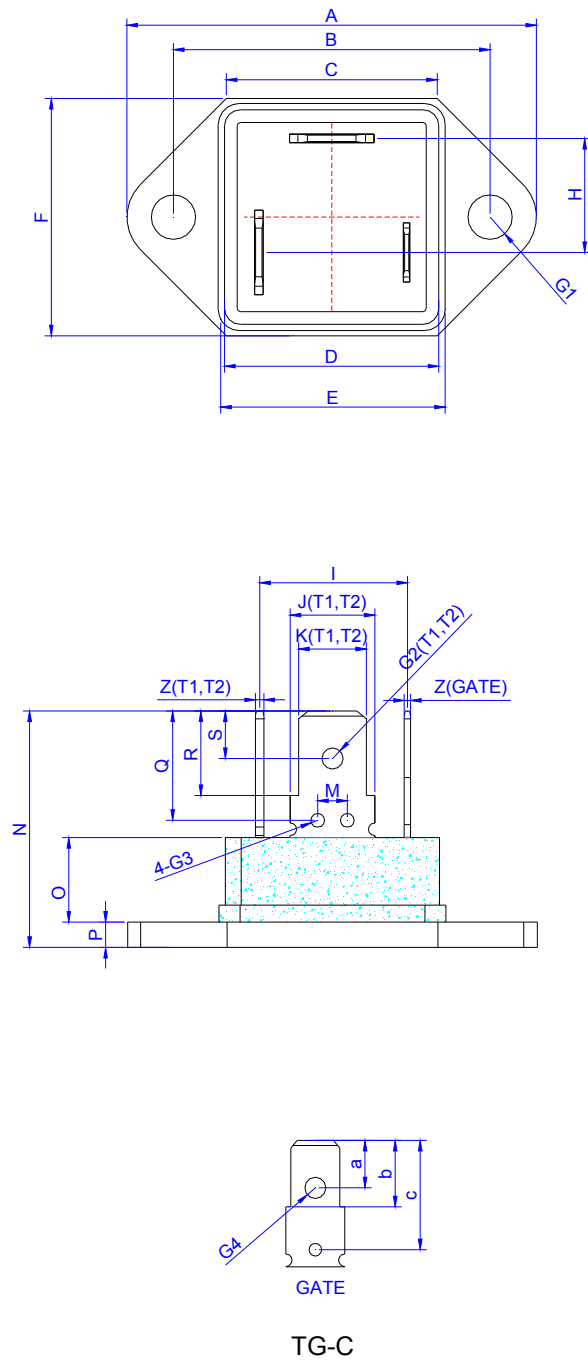


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.35		1.50	0.053		0.059
P	2.80		3.00	0.110		0.118
R		4.35			0.171	



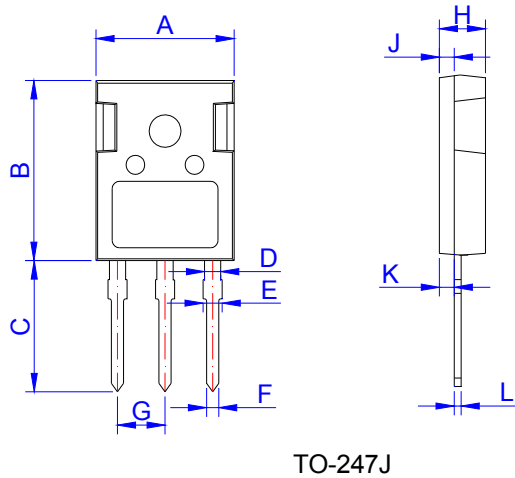
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.1		16.1	0.594		0.634
B	19.8		20.8	0.78		0.819
C	13.8		14.8	0.543		0.583
D	3.00		4.00	0.118		0.157
E	2.75		3.35	0.108		0.132
F	1.30		1.50	0.051		0.059
G	5.10		5.80	0.201		0.228
H	4.50		5.50	0.177		0.217
J	1.45		2.15	0.057		0.085
K	1.90		2.80	0.075		0.110
L	0.55		0.80	0.022		0.031
P	2.00		2.40	0.079		0.094

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			39.2			1.543
B	29.8	30.0	30.2	1.173	1.181	1.189
C			20.2			0.795
D			20.5			0.807
E			21.6			0.85
F			23			0.905
G1	Φ4.1	Φ4.2	Φ4.3	Φ0.161	Φ0.165	Φ0.169
H		10.3			0.406	
I		13.9			0.547	
J(T1,T2)		8			0.315	
K(T1,T2)		6.4			0.252	
M	2.7	3.0	3.3	0.106	0.118	0.130
N			22.8			0.898
O		8.2			0.323	
P		2.5			0.098	
Q	9.45	9.75	10.1	0.374	0.383	0.398
R	7.8	7.95	8.1	0.307	0.313	0.319
S	4.3	4.5	4.7	0.169	0.177	0.185
Z(T1,T2)	0.78	0.8	0.85	0.0307	0.0315	0.0335
G2(T1,T2)		Φ2	Φ2.2		Φ0.079	Φ0.087
G3	Φ1.1	Φ1.3	Φ1.5	Φ0.043	Φ0.051	Φ0.059
G4		Φ1.55	Φ1.75		Φ0.061	Φ0.069
a	2.95	3.15	3.35	0.116	0.124	0.132
b	6.2	6.35	6.5	0.244	0.25	0.256
c	9.35	9.75	10	0.368	0.384	0.393
Z(GATE)	0.58	0.6	0.65	0.0228	0.0236	0.0256
J(GATE)		5.6			0.221	
K(GATE)		4.65			0.183	

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	22.20	0.819	0.828	0.874
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G		5.44			0.214	
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031

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

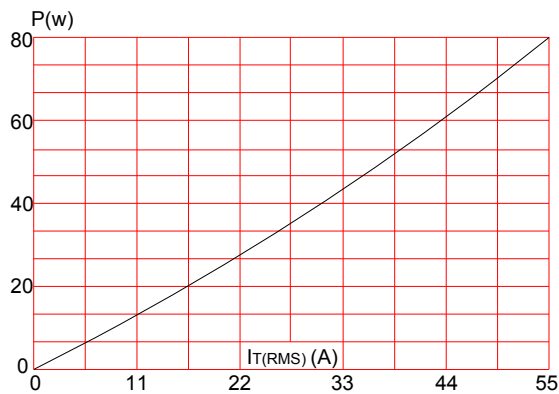


FIG.3: Surge peak on-state current versus number of cycles

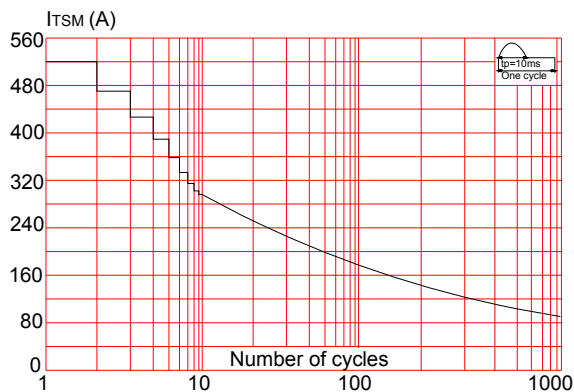


FIG.2: RMS on-state current versus case temperature

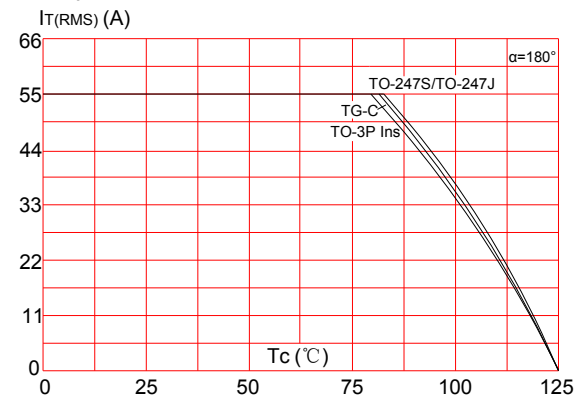


FIG.4: On-state characteristics (maximum values)

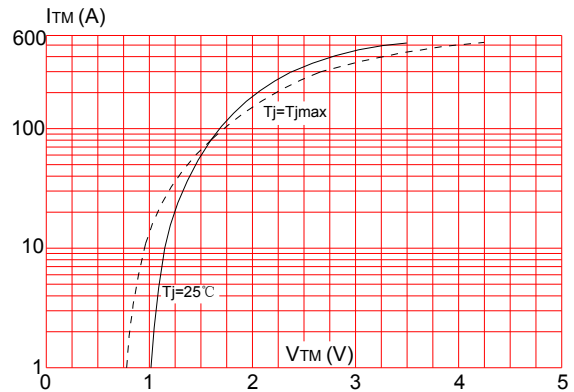


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 150\text{A}/\mu\text{s}$)

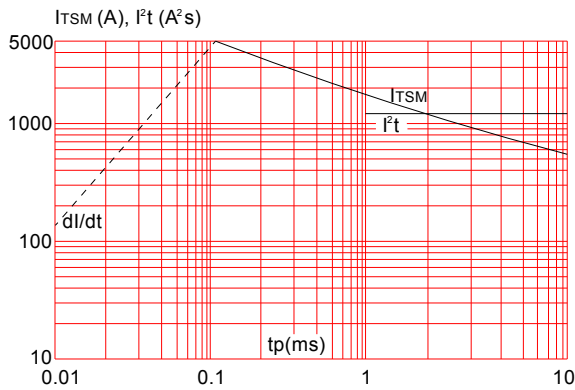
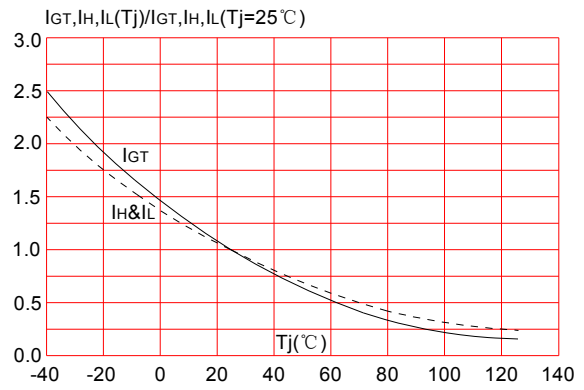



FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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