

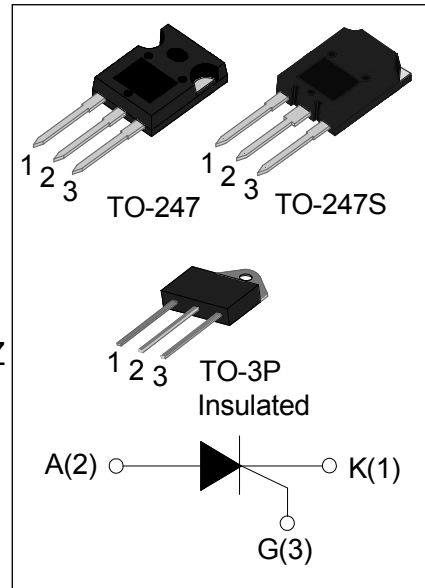


JCT6055/8055 Series 55A SCRs

Rev.3.0

DESCRIPTION:

with high ability to withstand the shock loading of large current, JCT6055/8055 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, JCTxx55Z provides a rated insulation voltage of 2500 V_{RMS}, complying with UL standards (File ref: E252906).



MAIN FEATURES

Symbol	JCT6055	JCT8055
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-247/ TO-247S (T _C =83°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

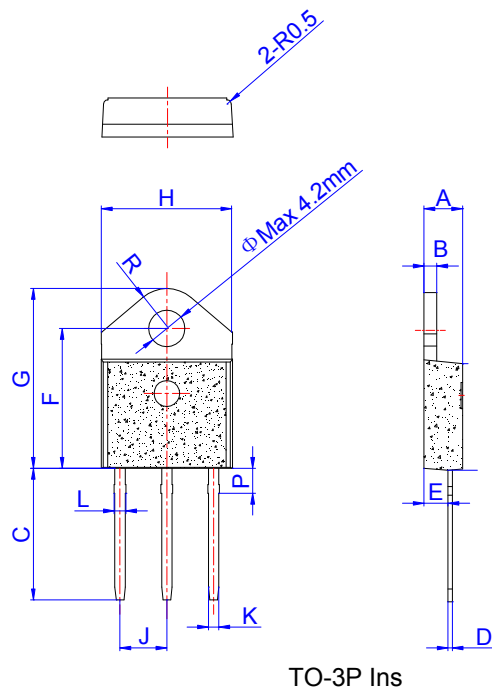
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit	
$R_{th(j-c)}$	junction to case(AC)	TO-3P Ins	0.65	$^\circ\text{C/W}$
		TO-247/ TO-247S	0.60	

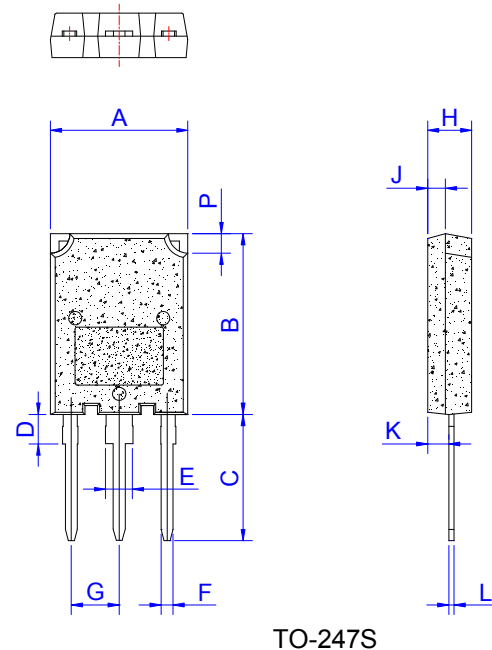
ORDERING INFORMATION

JieJie Microelectronics Co.,Ltd	J	CT	60	55	Z
		SCRs	60: $V_{DRM}/V_{RRM} \geq 600V$ 80: $V_{DRM}/V_{RRM} \geq 800V$		S:TO-247 Z:TO-3P Ins CS:TO-247S
				$I_{T(RMS)}:55A$	

PACKAGE MECHANICAL DATA

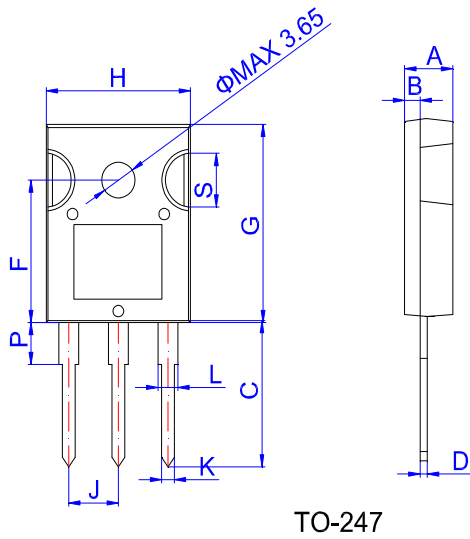


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	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	4.9		5.4	0.193		0.213
B	1.6		2.0	0.063		0.079
C	14.35		15.4	0.565		0.606
D	0.5		0.8	0.020		0.031
F	14.4		15.1	0.567		0.594
G	19.7		20.6	0.775		0.811
H	15.4		16.2	0.606		0.638
J	5.3		5.6	0.209		0.220
K	1.3		1.5	0.051		0.059
L	2.8		3.3	0.110		0.130
P	3.7		4.2	0.146		0.165
S	5.35		5.65	0.211		0.222

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

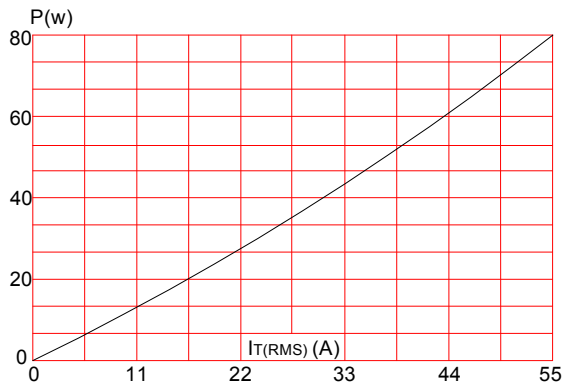


FIG.2: RMS on-state current versus case temperature

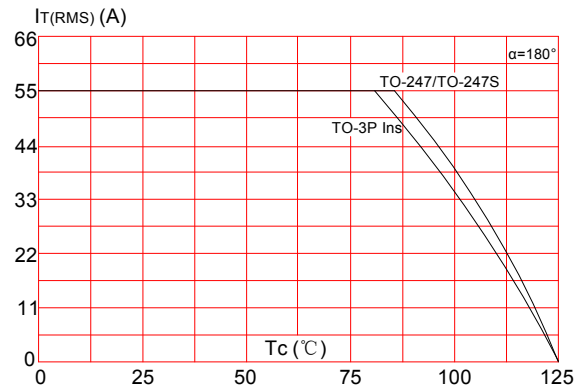


FIG.3: Surge peak on-state current versus number of cycles

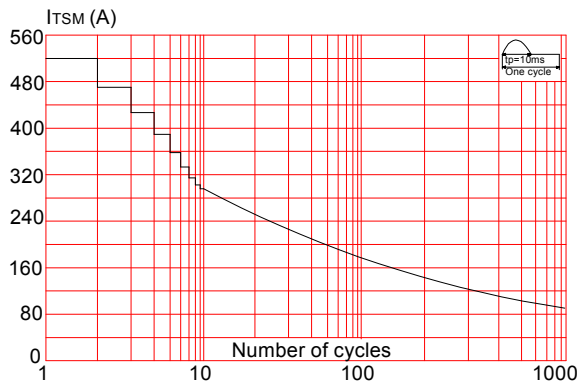


FIG.4: On-state characteristics (maximum values)

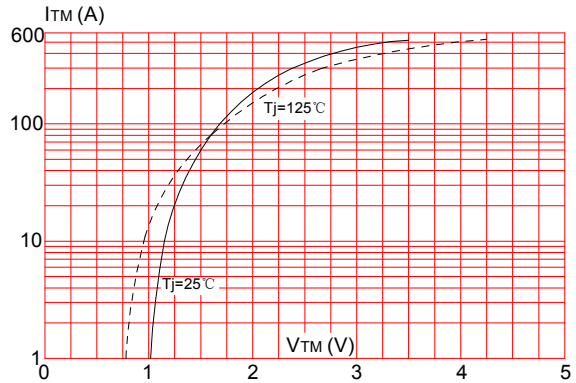


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 150\text{A}/\mu\text{s}$)

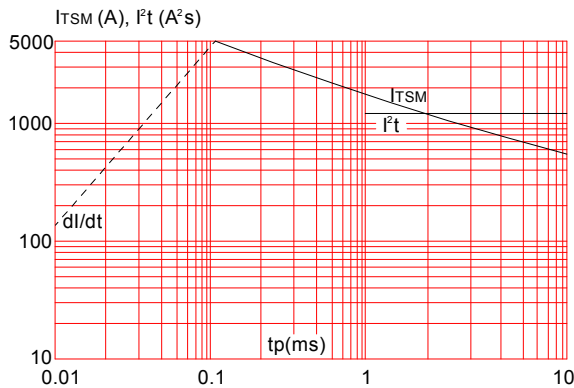
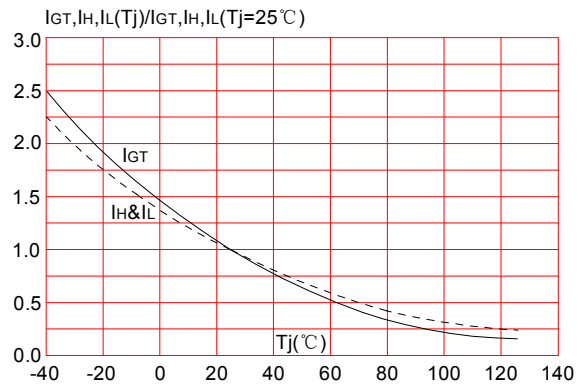



FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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