

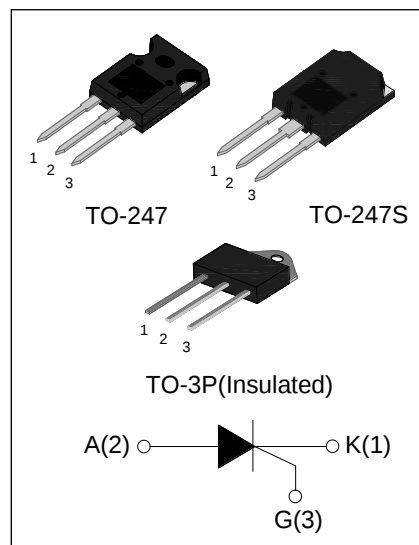


DESCRIPTION:

JCT1055/1255 series of silicon controlled rectifiers, with high ability to withstand the shock loading of large current, 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.

JCTxx55Z provides insulation voltage rated at 2500V RMS from all three terminals to external heatsink.

JCT1255Z series comply with UL standards (File ref: E252906).



MAIN FEATURES

Symbol	JCT1055	JCT1255
V_{DRM}/V_{RRM}	1000V	1200V
$I_{T(RMS)}$	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($T_j=25^{\circ}C$)		V_{DRM}	1000/1200	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)		V_{RRM}	1000/1200	V
Non repetitive surge peak Off-state voltage		V_{DSM}	$V_{DRM} +100$	V
Non repetitive peak reverse voltage		V_{RSM}	$V_{RRM} +100$	V
RMS on-state current	TO-3P Ins ($T_C=80^{\circ}C$)	$I_{T(RMS)}$	55	A
	TO-247S /TO-247 ($T_C=83^{\circ}C$)			
Non repetitive surge peak on-state current ($t_p=10ms$)		I_{TSM}	520	A

I^2t value for fusing ($t_p=10ms$)	I^2t	1350	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	150	$A/\mu s$
Peak gate current	I_{GM}	5	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V$ $R_L=33\Omega$			50	mA
V_{GT}		-	-	1.5	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ C$ $R_L=3.3K\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	150	mA
I_H	$I_T=500mA$	-	-	120	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$	700	-	-	$V/\mu s$

STATIC CHARACTERISTICS

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

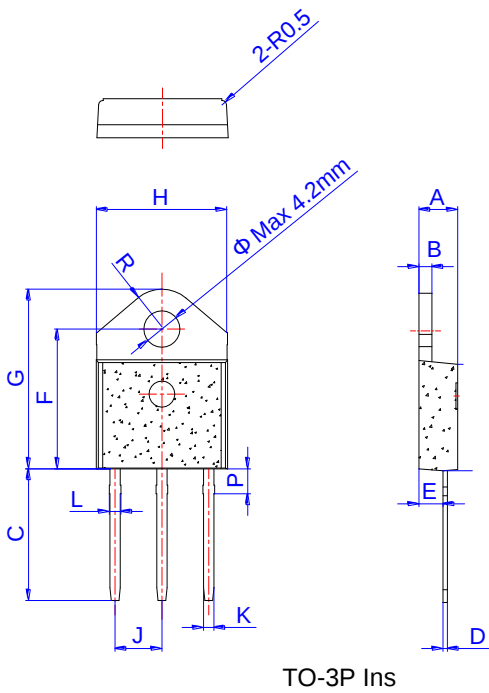
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-3P Ins	0.65	$^\circ C/W$
		TO-247S /TO-247	0.6	

ORDERING INFORMATION

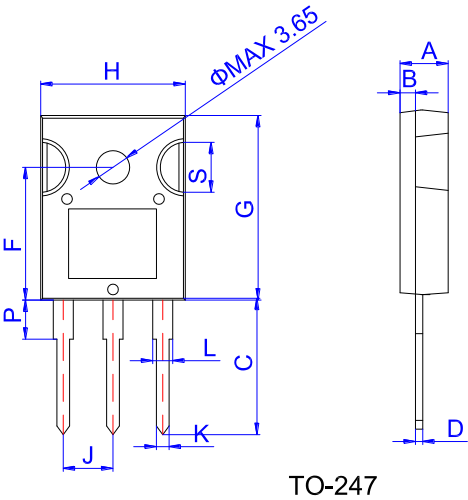
J	CT	12	55	Z
JieJie Microelectronics Co.,Ltd	SCRs			Z:TO-3P Ins CS:TO-247S S:TO-247
	10:VDRM /VRRM ≥1000V 12:VDRM /VRRM ≥1200V		IT(RMS):55A	

PACKAGE MECHANICAL DATA

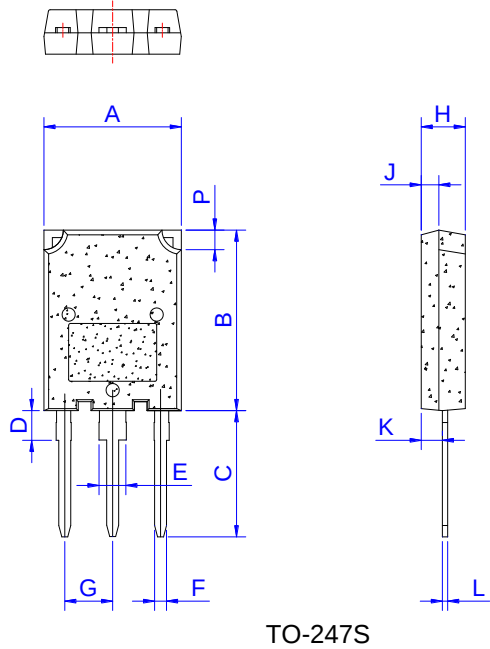


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	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	

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



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

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

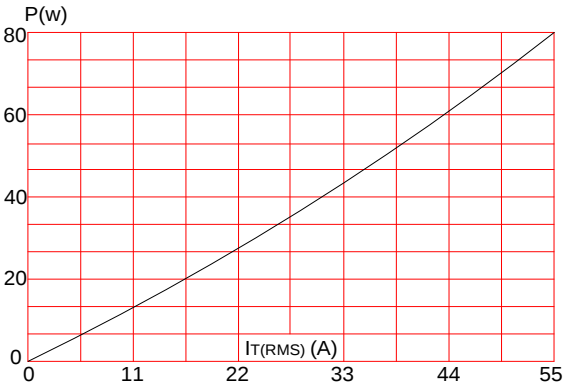


FIG.2: RMS on-state current versus case temperature

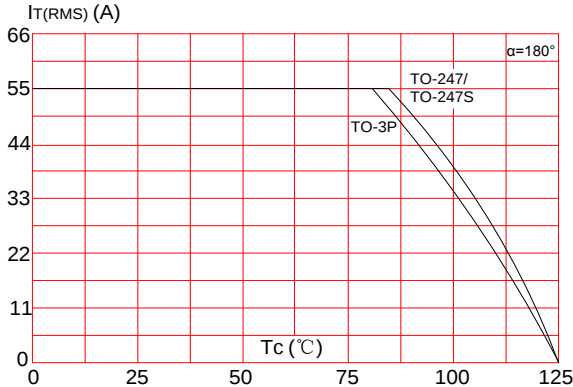
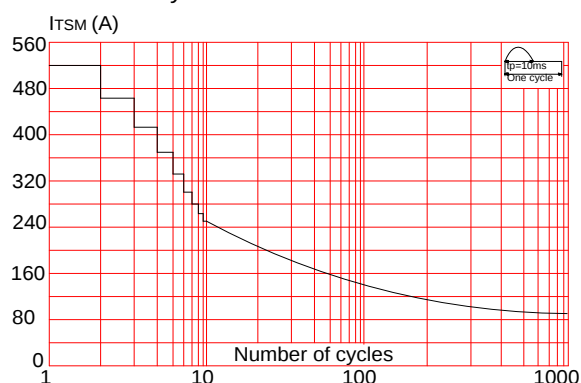
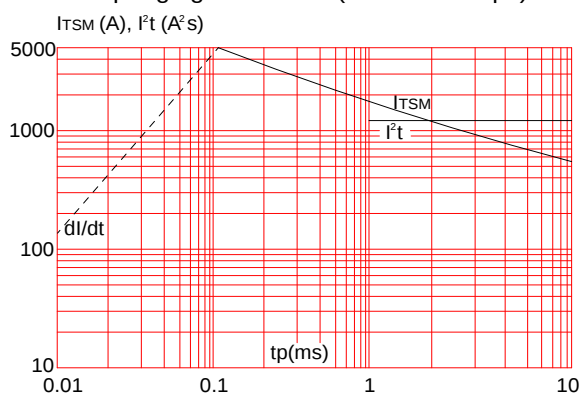
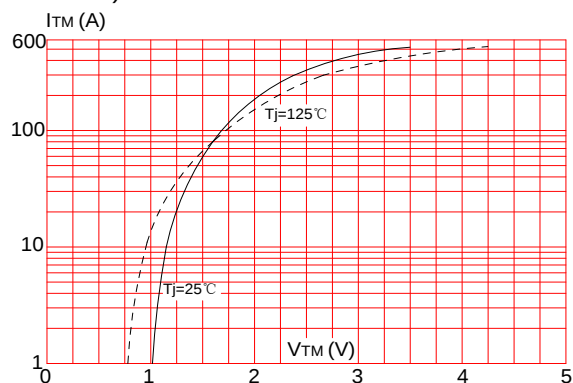
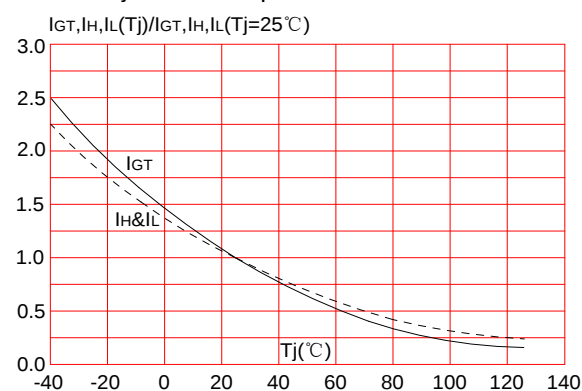


FIG.3: Surge peak on-state current versus number of cycles**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($dI/dt < 150\text{A}/\mu\text{s}$)**FIG.4:** On-state characteristics (maximum values)**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

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