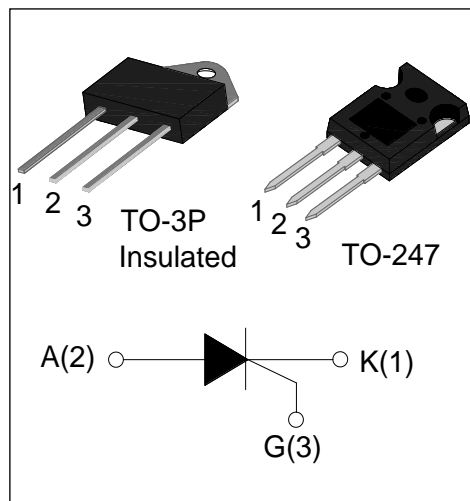




### DESCRIPTION:

JCT1655 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.

JCT1655Z provides insulation voltage rated at 2500V RMS from all three terminals to external heatsink complying with UL standards (File ref: E252906).



### MAIN FEATURES

Symbol	JCT1655
$V_{DRM}/V_{RRM}$	1600V
$I_{T(RMS)}$	55A
$I_{GT}$	20 - 70 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	$V_{DRM}$	1600	V	
Repetitive peak reverse voltage	$V_{RRM}$	1600	V	
Average on-state current	TO-3P Ins ( $T_C=80^\circ C$ )	$I_{T(AV)}$	35	A
	TO-247( $T_C=85^\circ C$ )			
RMS on-state current	TO-3P Ins ( $T_C=80^\circ C$ )	$I_{T(RMS)}$	55	A
	TO-247( $T_C=85^\circ C$ )			
Non repetitive surge peak on-state current (tp=10ms)	$I_{TSM}$	550	A	
$I^2t$ value for fusing (tp=10ms)	$I^2t$	1500	$A^2s$	

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
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.	
$I_{GT}$	$V_D=12\text{V } R_L=30\Omega$	20	-	70	mA
$V_{GT}$		-	-	1.5	V
$V_{GD}$	$V_D=V_{DRM} T_j=125^\circ\text{C}$	0.25	-	-	V
$I_L$	$I_G=1.2 I_{GT}$	-	-	250	mA
$I_H$	$I_T=1\text{A}$	-	-	200	mA
$dV/dt$	$V_D=2/3V_{DRM} T_j=125^\circ\text{C}$ Gate Open	1000	-	-	V/ $\mu$ s

**STATIC CHARACTERISTICS**

Symbol	Parameter	Value(MAX)	Unit	
$V_{TM}$	$I_{TM}=80\text{A } t_p=380\mu\text{s}$	$T_C=25^\circ\text{C}$	1.8	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_C=25^\circ\text{C}$	10	$\mu\text{A}$
$I_{RRM}$		$T_C=125^\circ\text{C}$	8	mA

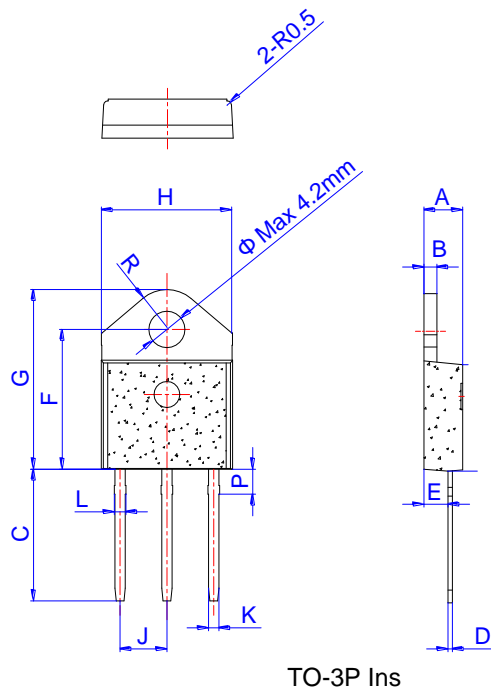
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit	
$R_{th(j-c)}$	junction to case(DC)	TO-3P Ins	0.62	$^\circ\text{C/W}$
		TO-247	0.60	

**ORDERING INFORMATION**

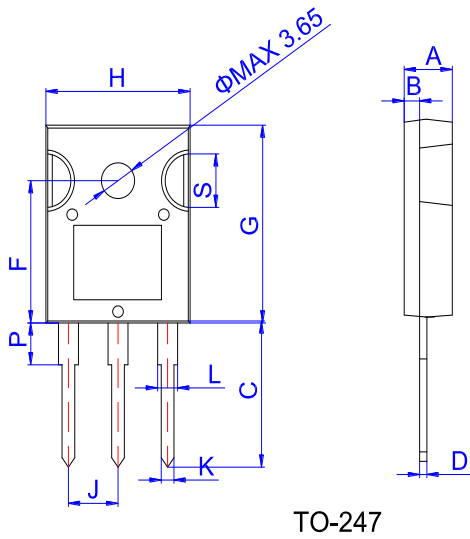
<p><b>J</b></p> <p>JieJie Microelectronics Co.,Ltd</p>	<p><b>CT</b></p> <p>SCRs</p>	<p><b>16</b></p> <p>16:V<sub>DRM</sub>/V<sub>RRM</sub> ≥ 1600V</p>	<p><b>55</b></p> <p>I<sub>T(RMS)</sub>:55A</p>	<p><b>Z</b></p> <p>S:TO-247 Z:TO-3P Ins</p>
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**PACKAGE 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	

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

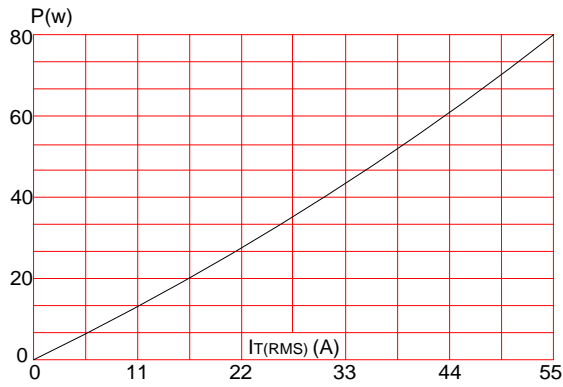


FIG.2: RMS on-state current versus case temperature

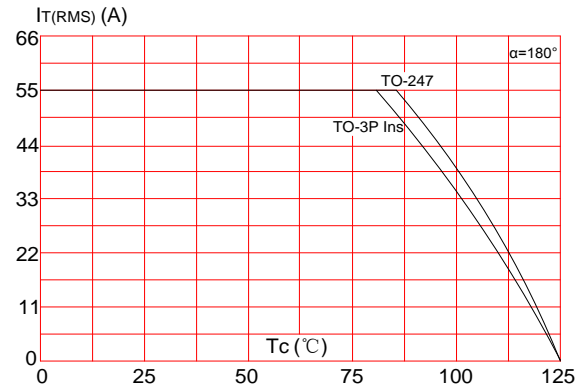


FIG.3: Surge peak on-state current versus number of cycles

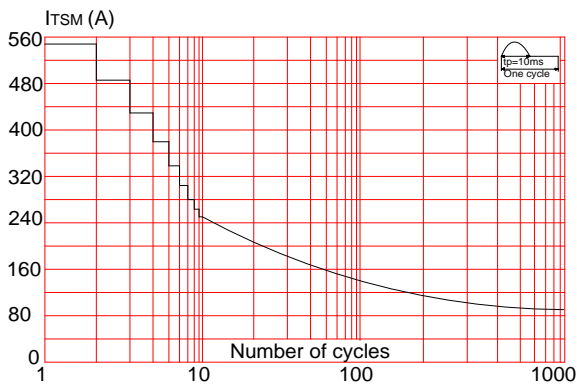
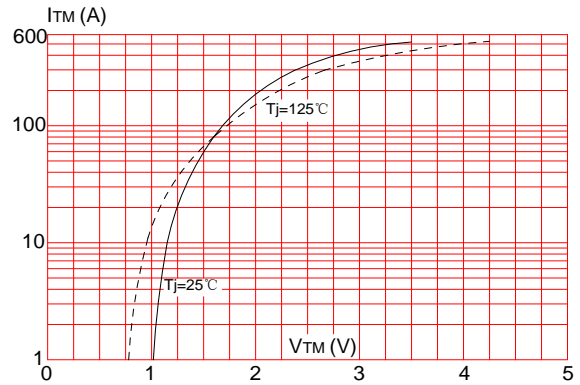
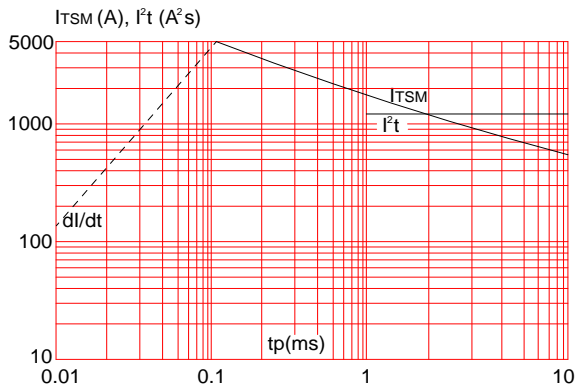


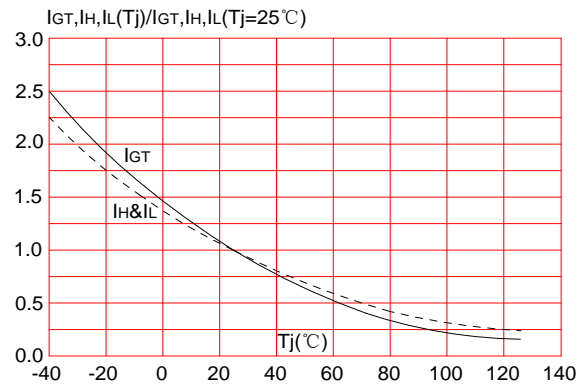
FIG.4: On-state characteristics (maximum values)




**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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