



JCT6055/1255/1655 Series 55A SCRs

DESCRIPTION:

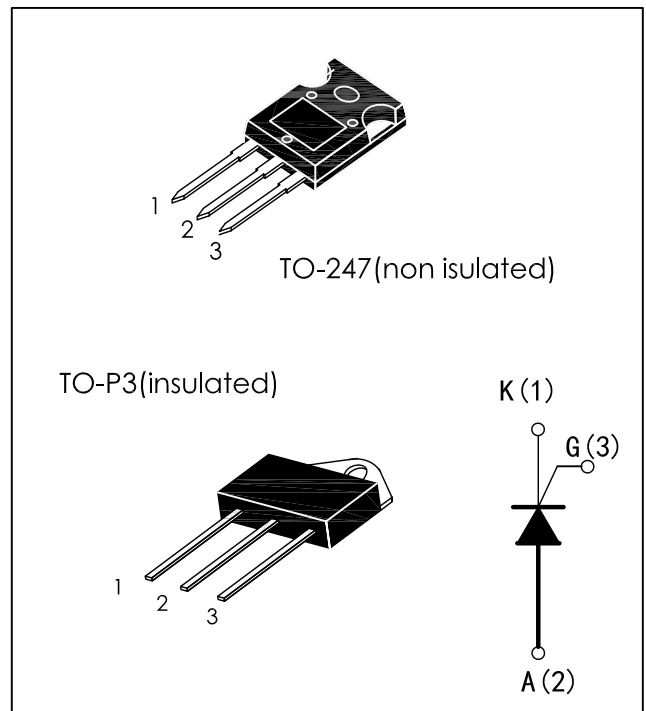
High current density due to double mesa technology. JCT6055/1255/1655 series of silicon controlled rectifiers are specifically designed for high power switching and phase control applications.

JCT6055/1255/1655 series are suitable for general purpose applications, a high gate sensitivity is required.

JCT6055/1255i/1655i provides a 2500V RMS isolation voltage from all three terminals to external heatsink.

MAIN FEATURES

Symbol	Value	Unit
$I_T(\text{RMS})$	55	A
IGT	≤60	mA
V_{TM}	≤1.8	V



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	°C
Operating junction temperature range		Tj	-40 to +125	°C
Repetitive Peak Off-state Voltage $T_j=25^\circ\text{C}$ Repetitive Peak Reverse Voltage $T_j=25^\circ\text{C}$	JCT6055	VDRM VRRM	600	V
	JCT1255		1200	
	JCT1655		1600	
RMS on-state current (all conduction angles)	TO-P3 $T_c=80^\circ\text{C}$	$I_T(\text{RMS})$	55	A
	TO-247 $T_c=83^\circ\text{C}$			
Average on-state current (half sine wave)	TO-P3 $T_c=80^\circ\text{C}$	$I_T(\text{AV})$	40	A
	TO-247 $T_c=83^\circ\text{C}$			
Non repetitive surge peak on-state current (half sine cycle, $T_j=25^\circ\text{C}$)	f = 50 Hz t=10ms	ITSM	520	A
	f = 60 Hz t=8.3ms		540	
I ² t Value for fusing	tp=10ms	I ² t	1350	A ² s
Repetitive rate of rise of on-state current after triggering $I_{TM}=20\text{A}$ $I_G=50\text{mA}$ dI_G/dt 50mA/ms		dI _T /dt	150	A/μs
Peak gate current	tp=20us, $T_j=125^\circ\text{C}$	IGM	1.5	A
Peak gate power	tp=20us, $T_j=125^\circ\text{C}$	PGM	10	W
Average gate power dissipation	$T_j=125^\circ\text{C}$	PG(AV)	2	W

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

Symbol	Test Condition	JCT6055	JCT1255	JCT1655	Unit
		MAX.	MAX.	MAX.	
I _{GT}	V _D =12V R _L =33Ω	25	35	60	mA
V _{GT}		1.5			V
V _{GD}	V _D =V _{DRM} R _L =3.3KΩ T _j =125°C	0.2			V
I _L	I _G =1.2I _{GT}	70	80	100	mA
I _H	I _T =500mA	50	60	80	mA
dV/dt	V _D =67%V _{DRM} gate open T _j =125°C	700	1000	1000	V/μs

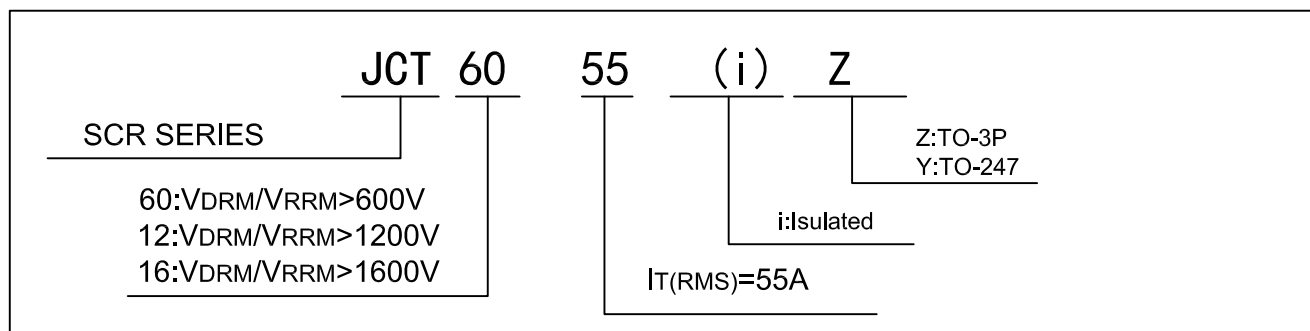
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V _{TM}	I _{TM} =80A, t _p =380μs	T _j =25°C	1.8	V
I _{DRM} I _{RRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25°C	10	μA
		T _j =125°C	8	mA

THERMAL RESISTANCES

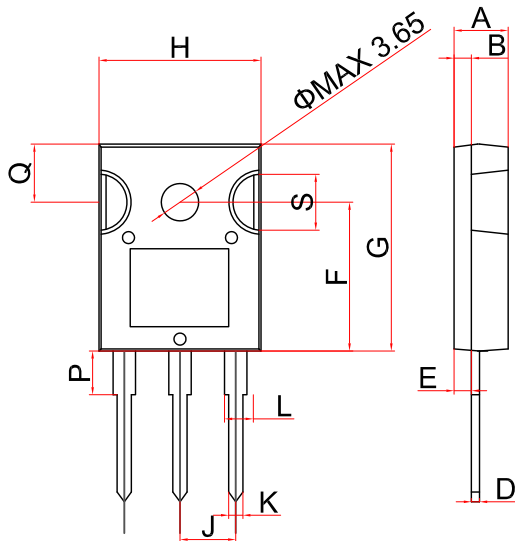
Symbol	Parameter		Value	Unit
R _{th(j-mb)}	thermal resistance from junction to mounting base	TO-247	0.60	°C/W
		TO-P3	0.65	
R _{th(j-hs)}	thermal resistance from junction to heatsink with heatsink compound	TO-247	0.85	
		TO-P3	0.9	

ORDERING INFORMATION



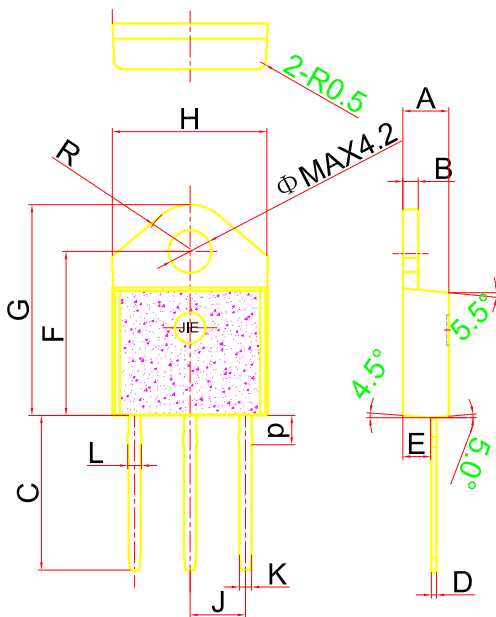
PACKAGE MECHANICAL DATA

TO-247



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.1	5.4	0.201	0.213
B	1.6	1.8	0.063	0.071
C	14.35	15.4	0.565	0.606
D	0.6	0.9	0.024	0.035
E	1.5	1.75	0.059	0.069
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	2.0	2.3	0.079	0.091
P	4.1	4.4	0.161	0.173
Q	5.6	5.8	0.220	0.228
S	5.35	5.65	0.211	0.222

TO-P3(TO-218)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.6	0.565		0.614
D	0.5		0.7	0.020		0.028
E	2.7		2.9	0.106		0.114
F	15.8		16.5	0.622		0.650
G	20.4		21.1	0.815		0.831
H	15.1		15.5	0.594		0.610
J	5.4		5.65	0.213		0.222
K	1.2		1.4	0.047		0.055
L	1.35		1.50	0.053		0.059
P	2.8		3.0	0.110		0.118
R		4.6			0.181	