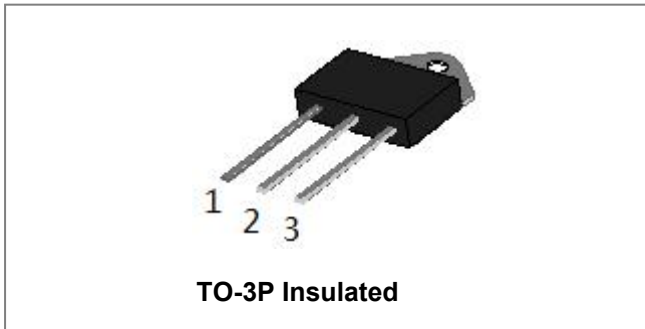
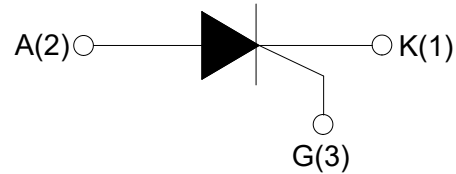


## SCT655Z/855Z 55A SCRs



### Circuit Diagram



### Description

With high ability to withstand the shock loading of large current, SCT655/855 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.

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	$T_J$	-	-40-150	°C
Operating junction temperature range	$T_{stg}$	-	-40-125	°C
Repetitive peak off-state voltage( $T_J=25^{\circ}C$ )	$V_{DRM}$	-	600/800	V
Repetitive peak reverse voltage( $T_J=25^{\circ}C$ )	$V_{RRM}$	-	600/800	V
RMS on-state current	$I_{(TRMS)}$	TO-3P Ins ( $T_C=80^{\circ}C$ )	55	A
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 <sup>2</sup> s
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 ( $T_J=125^{\circ}C$ )	$P_{G(AV)}$	-	1	W

**Electrical Characteristics**(T<sub>j</sub>=25°C unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =33Ω	10	15	50	mA
V <sub>GT</sub>		-	-	1.5	V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125°C R <sub>L</sub> =3.3KΩ	0.2	-	-	V
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	-	-	100	mA
I <sub>H</sub>	I <sub>T</sub> =500mA	-	-	80	mA
dV/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> T <sub>j</sub> =125°C Gate Open	700	-	-	V/μs

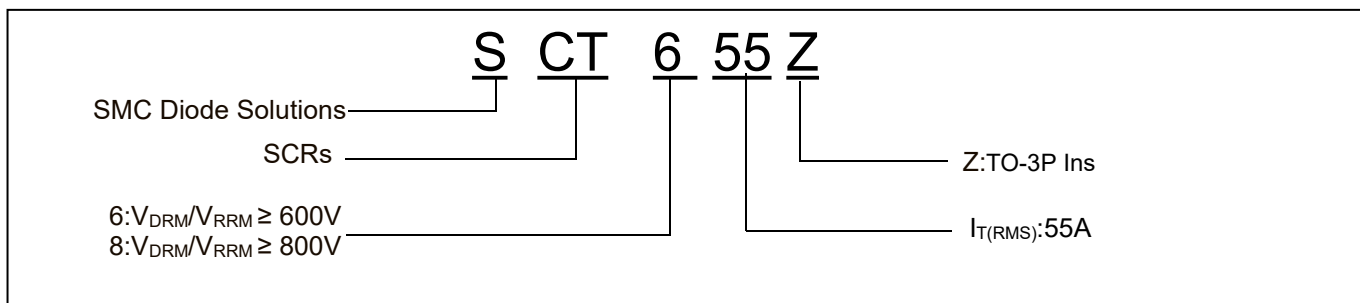
**Static Characteristics**

Symbol	Condition	Max.	Units
V <sub>TM</sub>	I <sub>TM</sub> =80A tp=380μs, T <sub>j</sub> =25°C	1.6	V
I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RRM</sub> , T <sub>j</sub> =25°C	10	μA
I <sub>RRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RRM</sub> , T <sub>j</sub> =125°C	6	mA

**Thermal Resistances**

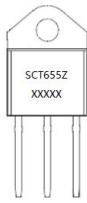
Symbol	Condition		Value	Units
R <sub>th(j-c)</sub>	Junction to case(AC)	TO-3P Ins	0.65	°C/W

**Ordering Information**



Device	Package	Shipping
SCT655Z/SCT855Z	TO-3P Ins	30pcs/ Tube

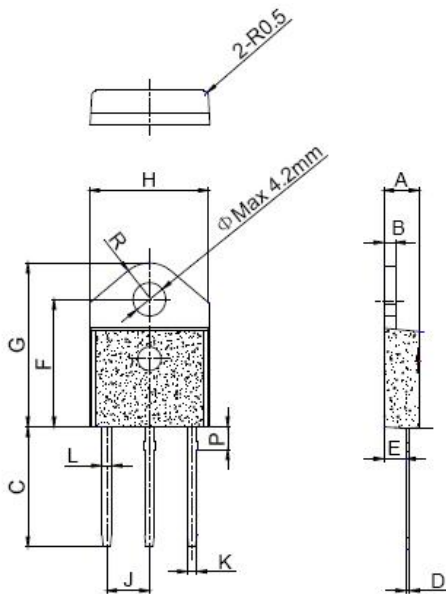
**Marking Diagram**



Where XXXXX is YYWWL

SCT655Z = Part name  
YY = Year  
WW = Week  
L = Lot Number

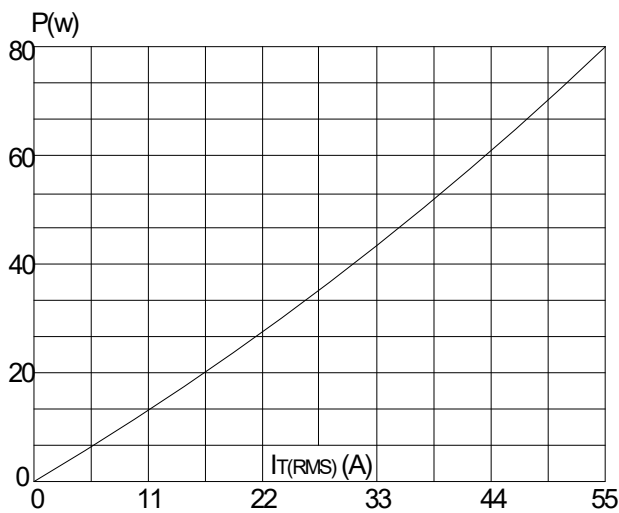
**Mechanical Dimensions TO-220B(Non-Ins)**



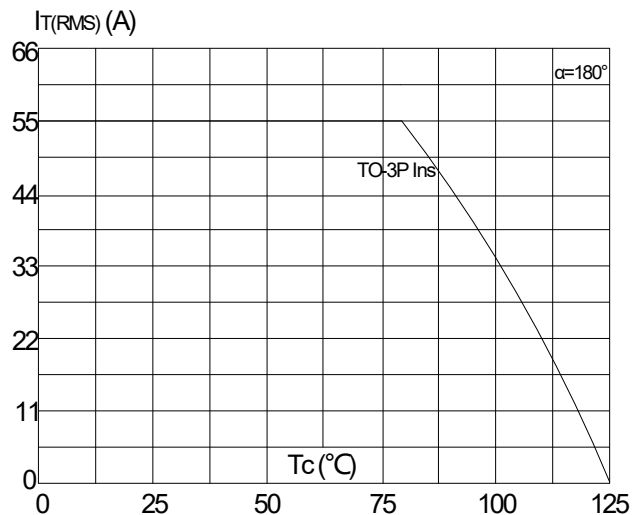
SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
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	

**Ratings and Characteristics Curves**

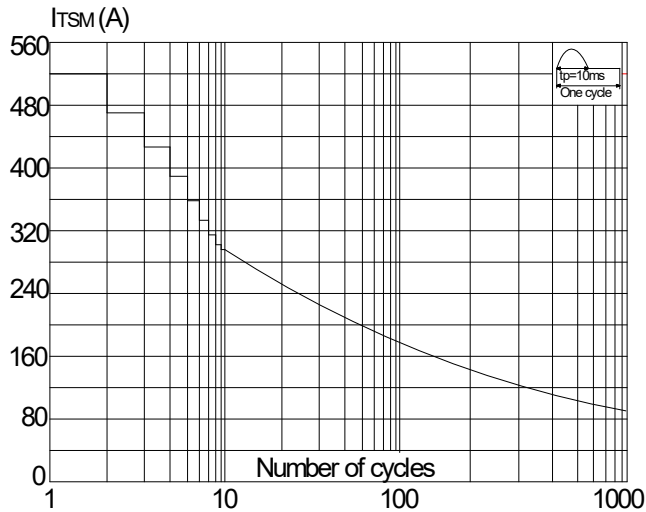
**FIG.1:** Maximum power dissipation versus RMS on-state current



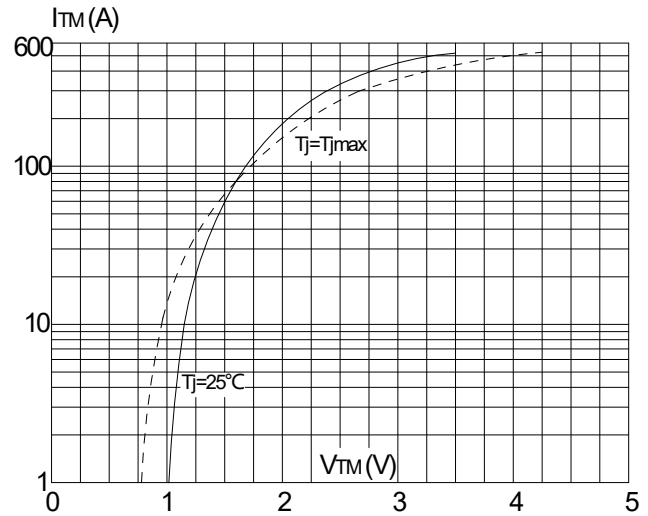
**FIG.2:** RMS on-state current versus case temperature



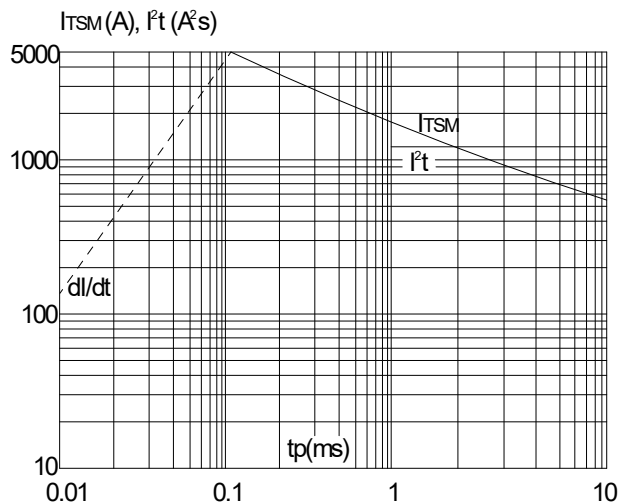
**FIG.3:** Surge peak on-state current versus number of cycles



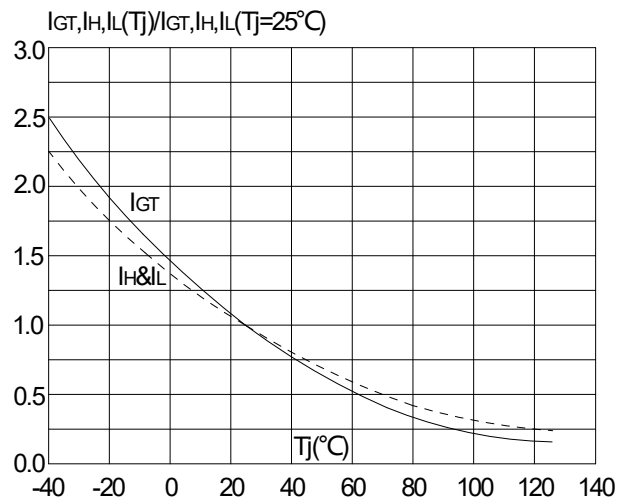
**FIG.4:** On-state characteristics (maximum values)



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



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



**Technical Data**  
**Data Sheet N2070, Rev.-**



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