

55A SCRs

Features

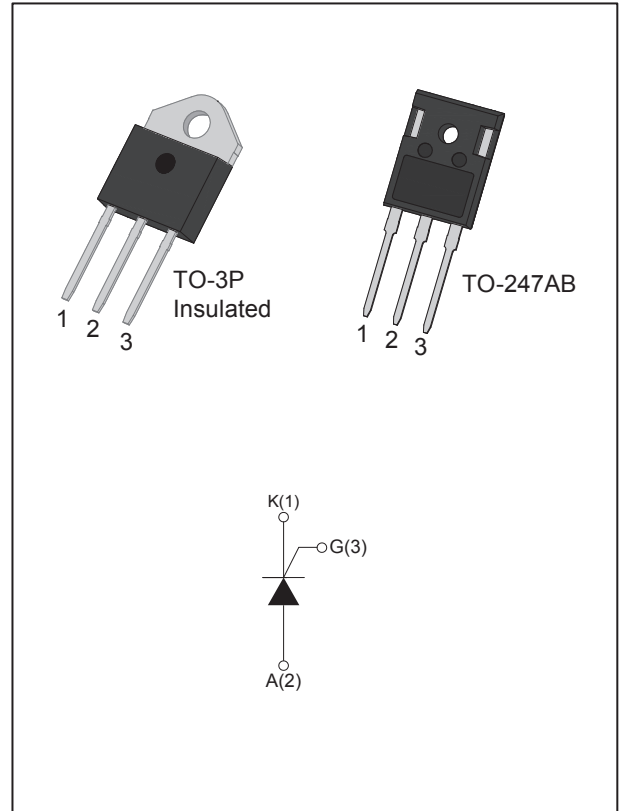
- Glass passivated chip junction
- High thermal cycling performance
- High voltage capacity
- Very high current surge capability
- Pb-free
- RoHS compliant

Applications

- Line rectifying 50/60 Hz
- Softstart AC motor control
- DC Motor control
- Power converter
- AC power control
- Lighting and temperature control

Main Features

Symbol	Value	Unit
$I_{T(RMS)}$	55	A
V_{DRM} / V_{RRM}	1200 / 1600	V



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{STG}	-40 to 150	°C
Operating junction temperature range	T_J	-40 to 125	°C
Repetitive peak off-state voltage ($T_J = 25^\circ\text{C}$)	V_{DRM}	1200 / 1600	V
Repetitive peak reverse voltage ($T_J = 25^\circ\text{C}$)	V_{RRM}	1200 / 1600	V
RMS on-state current	TO-3P(Ins) ($T_C=80^\circ\text{C}$)	55	A
	TO-247AB ($T_C=85^\circ\text{C}$)		
Non repetitive surge peak on-state current (180° conduction angle, $F = 50\text{Hz}$, $t_P = 10\text{ms}$, half full cycle)	I_{TSM}	550	A
I^2t value for fusing ($t_P = 10\text{ms}$)	I^2t	1500	A^2s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ns}$)	di/dt	150	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	5	A
Average gate power dissipation	$P_{G(AV)}$	2	W

Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition		Value	Unit
I_{GT}	$V_D = 12\text{V}, R_L = 100\Omega$	MAX	60	mA
V_{GT}	$V_D = 12\text{V}, R_L = 100\Omega$	MAX	1.3	V
V_{GD}	$V_D = V_{DRM}, T_J = 125^\circ\text{C}$	MIN	0.2	V
I_L	$I_G = 1.2 \times I_{GT}$	MAX	250	mA
I_H	$V_{AK} = 12\text{V}, I_{GK} = 100\text{mA}$	MAX	200	mA
dV/dt	$V_D = 67\% V_{DRM}, \text{Gate open}, T_J = 125^\circ\text{C}$	MIN	1000	V/ μs

Static Characteristics

Symbol	Test Condition		Value	Unit
V_{TM}	$I_{TM} = 80\text{A}, t_p = 380\mu\text{s}$	$T_J = 25^\circ\text{C}$ MAX	1.8	V
I_{DRM} I_{RRM}	$V_D = V_{DRM}, V_R = V_{RRM}$	$T_J = 25^\circ\text{C}$ MAX	20	μA
		$T_J = 125^\circ\text{C}$ MAX	8	mA

Thermal Resistances

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Junction to case(AC)	TO-3P(Ins)	0.65
		TO-247AB	0.6

Ordering Information

Ordering Type	Marking	Package	Quantity	Delivery Mode
SCR55xx-yyZI	SCR55xx-yyZI	TO-3P(Ins)	30	Tube
SCR55xx-yyP	SCR55xx-yyP	TO-247AB	30	Tube

Note : xx = sensitivity, yy = voltage

Ordering Information Scheme

SCR 55 60 - 12 P

SCR series

SCR = SCRs (1000V ↑)

$I_{T(RMS)}$

55 = 55A

I_{GT} Sensitivity

60 = 60mA

V_{DRM} / V_{RRM}

12 = 1200V

16 = 1600V

Package type

ZI = TO-3P(Ins)

P = TO-247AB

Ratings and Characteristics Curves

Fig.1 - RMS on-state current versus case temperature

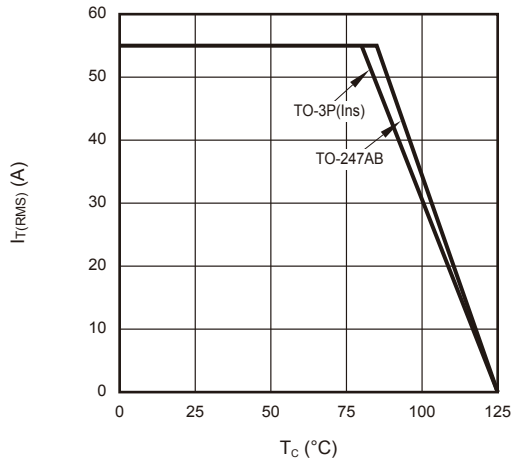


Fig.2 - Surge peak on-state current versus number of cycles

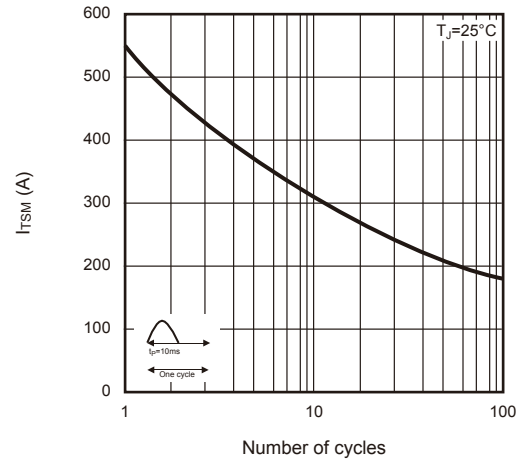


Fig.3 - On-state characteristics (maximum values)

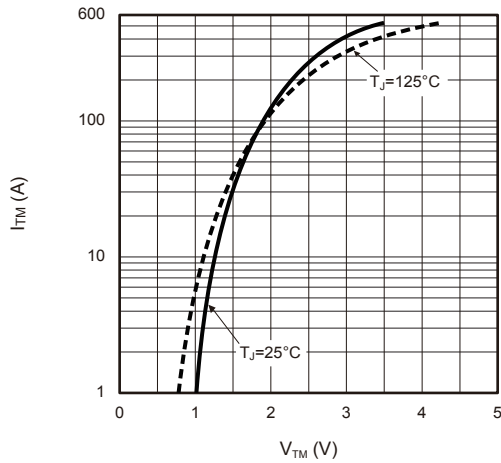


Fig.4 - Maximum power dissipation versus RMS on-state current

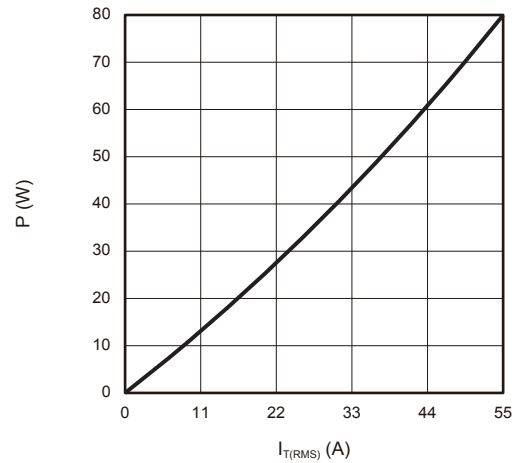
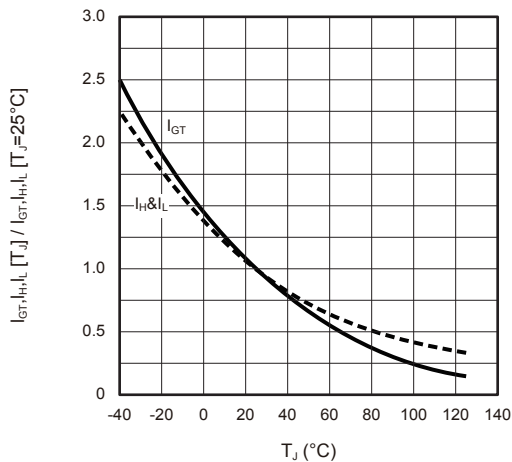
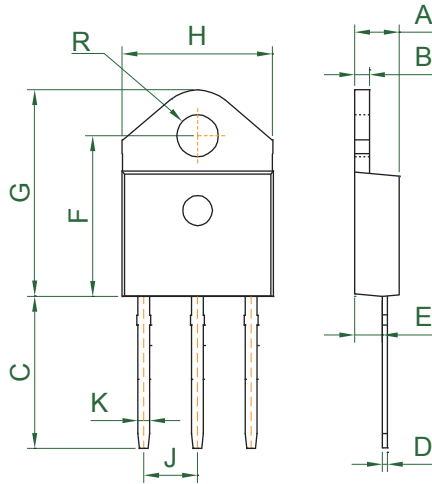


Fig.5 - Relative variations of gate trigger current, holding current and latching current versus junction temperature



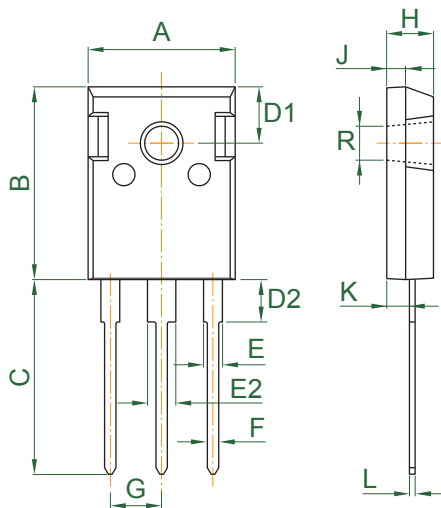
Package Outline Dimensions

TO-3P(Ins)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4	-	4.6	.173	-	.181
B	1.4	-	1.6	.055	-	.063
C	14.35	-	15.88	.565	-	.625
D	0.5	-	0.7	.020	-	.028
E	2.7	-	2.9	.106	-	.114
F	15.8	-	16.5	.622	-	.650
G	20.27	-	21.1	.798	-	.831
H	15.1	-	15.5	.594	-	.610
J	5.35	-	5.65	.211	-	.222
K	1.1	-	1.5	.043	-	.059
R	4.08	-	4.25	.160	-	.167

TO-247AB



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.3	-	16.1	.602	-	.634
B	20.25	-	21.5	.797	-	.846
C	19.0	-	21.0	.748	-	.827
D1	5.7	-	6.5	.224	-	.256
D2	3.0	-	5.0	.118	-	.197
E	1.7	-	2.3	.067	-	.091
E2	2.8	-	3.3	.110	-	.130
F	0.9	-	1.5	.035	-	.059
G	5.0	-	6.0	.197	-	.236
H	4.7	-	5.3	.185	-	.209
J	1.8	-	2.2	.071	-	.087
K	2.2	-	2.6	.087	-	.102
L	0.4	-	0.9	.016	-	.035
R	2.95	-	3.55	.116	-	.140