

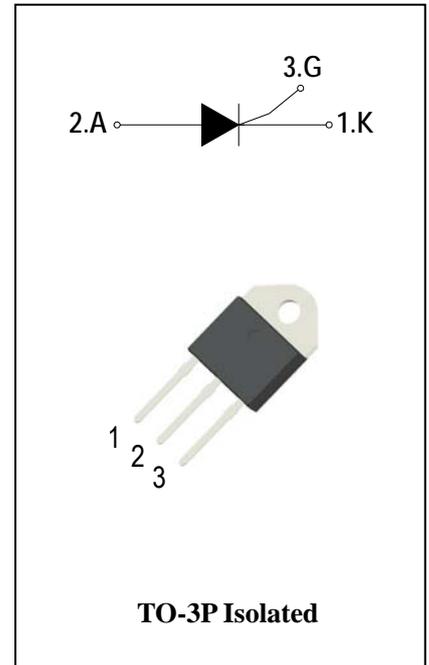
SCRs

General Description

The 55A SCR 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.

Features

- ◆ Repetitive Peak Off-State Voltage : 1600V
- ◆ R.M.S On-State Current ($I_{T(RMS)}=55\text{ A}$)
- ◆ These are Pb-Free Devices



Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	$T_j=25^\circ\text{C}$	AIS55A160H	1600	V
V_{RRM}	Repetitive peak reverse voltage				V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , $T_c = 80^\circ\text{C}$		35	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , $T_c = 80^\circ\text{C}$		55	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, $t_p=10\text{ms}(50\text{Hz})T_j = 25^\circ\text{C}$		550	A
I^2t	I^2t for Fusing	$T_j = 25^\circ\text{C}, t_p = 10\text{ms}$		1500	A^2S
P_{GM}	Forward Peak Gate Power Dissipation	$T_j = 125^\circ\text{C}, \text{Pulse Width} \leq 20\mu\text{s}$		10	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation	$T_j = 25^\circ\text{C}, t_p = 10\text{ms}$		1	W
I_{GM}	Peak Gate Current	$T_j = 125^\circ\text{C}, \text{Pulse Width} \leq 20\mu\text{s}$		5	A
T_j	Operating Junction Temperature			- 40 ~ 125	$^\circ\text{C}$
T_{STG}	Storage Temperature			- 40 ~ 150	$^\circ\text{C}$



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

Symbol	Items	Conditions		AIS55A160H			Unit
				S	Blank	W	
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current	$V_{DRM} = V_{RRM}$ $T_j = 25^\circ\text{C}$	Max.	10			uA
		$V_{DRM} = V_{RRM}$ $T_j = 125^\circ\text{C}$		6			mA
V_{TM}	Peak On-State Voltage	$I_{TM} = 80\text{A}$, $t_p = 380 \mu\text{s}$	Max.	1.8			V
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{DRM}$ $R_L = 3.3 \text{ k}\Omega$ $T_j = 125^\circ\text{C}$	Min.	0.2			V
V_{GT}	Gate Trigger Voltage	$V_D = 12\text{V}$, $R_L = 33\Omega$	Max.	1.5			V
I_{GT}	Gate Trigger Current		Max.	15	30	80	mA
I_H	Holding Current	$I_T = 0.5\text{A}$	Max.	30	40	150	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}$	Max.	50	60	200	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{DRM}$ gate open $T_j = 125^\circ\text{C}$	Min.	700	1000	1500	V/ μs
$R_{th(j-c)}$	Junction to case (AC)		Max.	0.82			$^\circ\text{C/W}$
$R_{th(j-a)}$	Junction to ambient		Max.	55			$^\circ\text{C/W}$

FIG.1: Maximum average power dissipation (Single phase half wave)

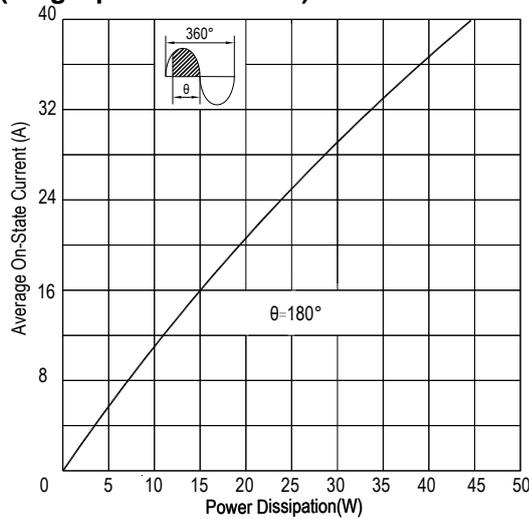


FIG.2: Average on-state current VS Allowable case Temperature (Single phase half wave)

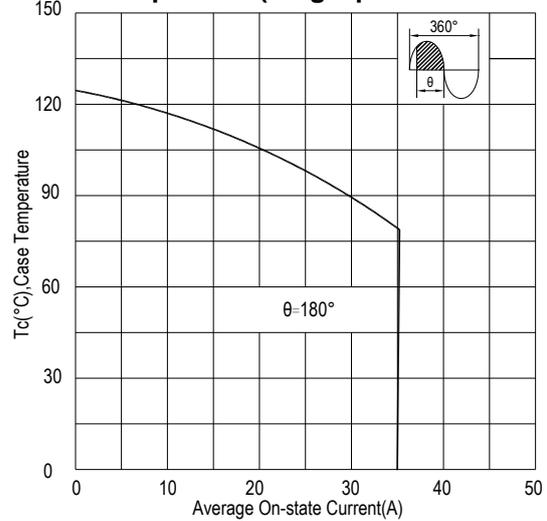


FIG.3: Gate trigger current VS Junction temperature

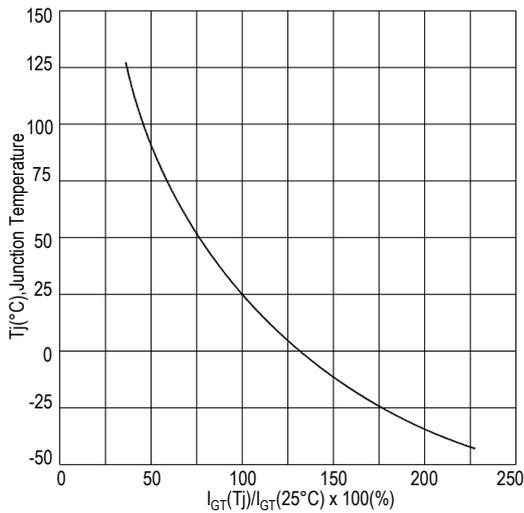


FIG.4: Rated surge on-state current (Non-Repetitive)

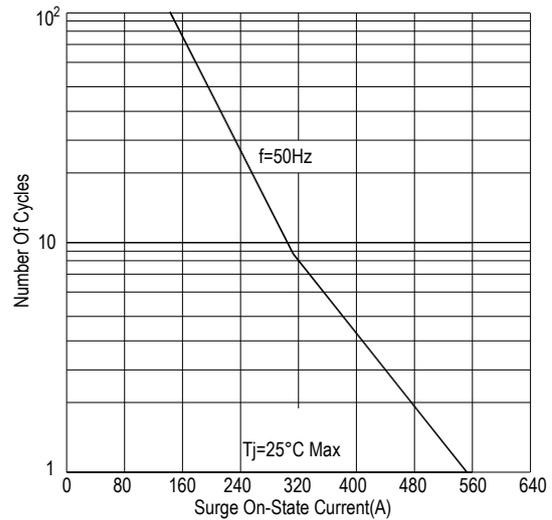


FIG.5: On-state characteristics(Max)

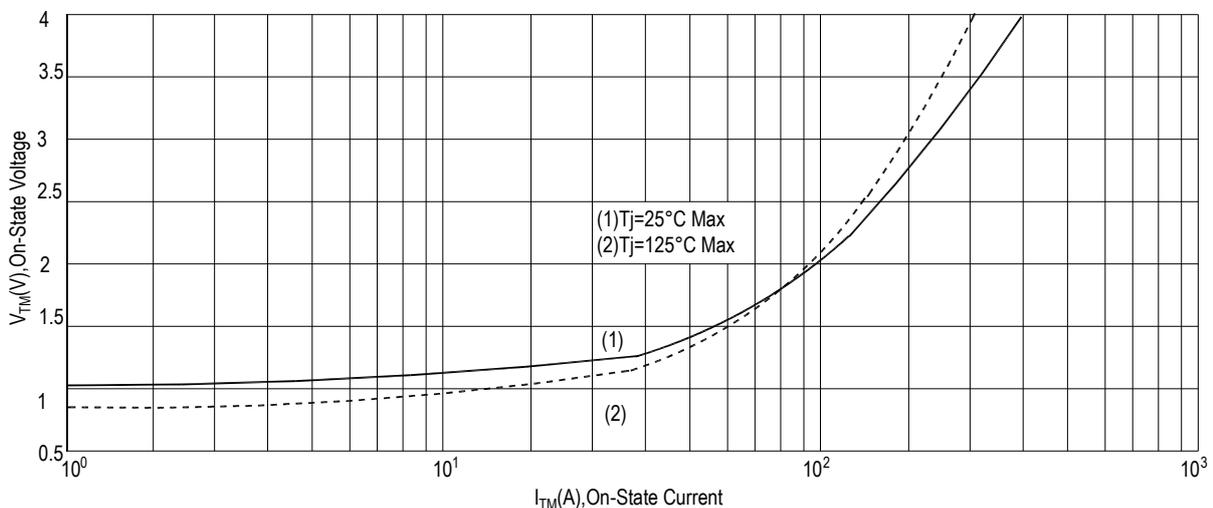


FIG.6: Holding current and Latching current VS Junction temperature

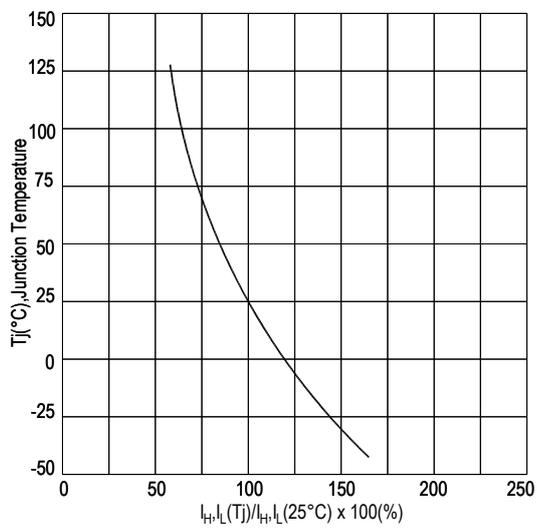
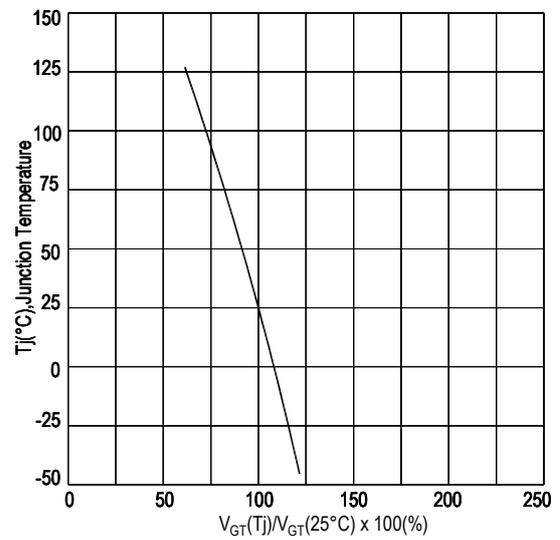
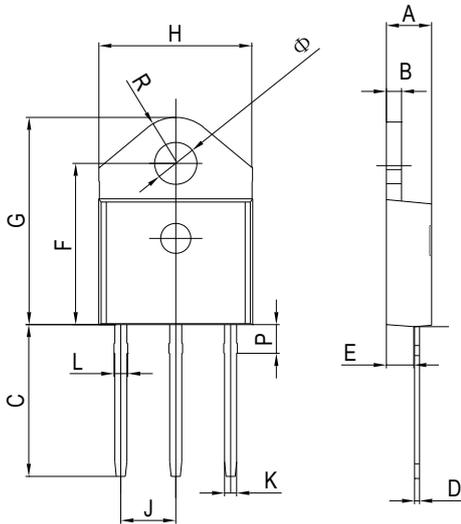


FIG.7: Gate trigger voltage VS Junction temperature



PACKAGE MECHANICAL DATA

TO-3P(isolated) Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.4	4.6	0.173	0.181
B	1.45	1.55	0.057	0.061
C	14.35	15.60	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
Ø	4.08	4.20	0.161	0.165
L	1.35	1.50	0.053	0.059
P	2.8	3.0	0.110	0.118
R	4.60 typ.		0.181 typ.	

Making Diagram

ADV:Logo
AIS55A160H:Part number
X:Internal control code
H:Halogen Free

ADVANCED
isolated
Internal control code
Current:55=55A
SCR Series

A I S 55 A 160 # T(S)(W)

Sensitivity and type:
T=0.2mA
S=15mA
Blank=30mA
W=80mA

Package explain:H=TO-3P
Voltage:160=1600V 120=1200V

Ordering information

Part number	Package	Marking	Packing	Quantity
AIS55A160H#	TO-3P isolated	AIS55A160H#	Tube	30pcs

Note:# = Gate Trigger Current Sensitivity and type

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