

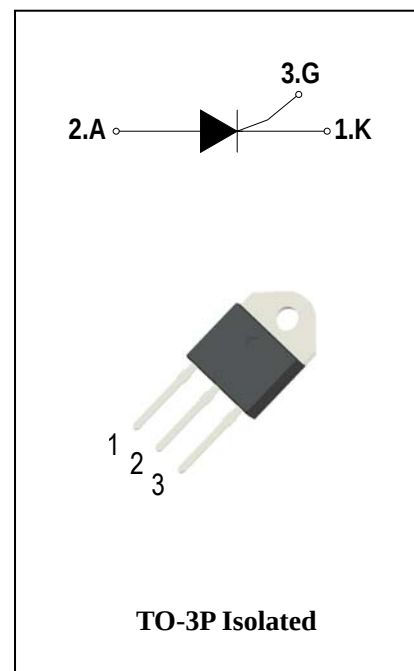
SCRs

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 A)
- ◆ These are Pb-Free Devices



Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V _{DRM}	Repetitive Peak Off-State Voltage	Tj=25°C	AIS55A160H	1600	V
V _{RRM}	Repetitive peak reverse voltage				V
I _{T(AV)}	Average On-State Current	Half Sine Wave , Tc = 80°C		35	A
I _{T(RMS)}	R.M.S On-State Current	Half Sine Wave , Tc = 80°C		55	A
I _{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, tp=10ms(50Hz)Tj =25°C		550	A
I ² t	I ² t for Fusing	Tj =25°C,tp =10ms		1500	A ² S
P _{GM}	Forward Peak Gate Power Dissipation	Tj =125°C, Pulse Width ≤ 20μs		10	W
P _{G(AV)}	Forward Average Gate Power Dissipation	Tj =25°C, tp =10ms		1	W
I _{GM}	Peak Gate Current	Tj =125°C, Pulse Width ≤ 20μs		5	A
Tj	Operating Junction Temperature			- 40 ~ 125	°C
T _{STG}	Storage Temperature			- 40 ~ 150	°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	$V_{\text{DRM}} = V_{\text{RRM}}$ $T_j = 25^\circ\text{C}$	Max.	10			μA
		$V_{\text{DRM}} = V_{\text{RRM}}$ $T_j = 125^\circ\text{C}$		6			mA
V_{TM}	Peak On-State Voltage	$I_{\text{TM}} = 80\text{A}$, $t_p = 380\ \mu\text{s}$	Max.	1.8			V
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{\text{DRM}}$ $R_L = 3.3\ \text{k}\Omega$ $T_j = 125^\circ\text{C}$	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	$I_G = 1.2 I_{\text{GT}}$	Max.	50	60	200	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{\text{DRM}}$ gate open $T_j = 125^\circ\text{C}$	Min.	700	1000	1500	V/ μs
$R_{\text{th(j-c)}}$	Junction to case (AC)		Max.	0.82			$^\circ\text{C/W}$
$R_{\text{th(j-a)}}$	Junction to ambient		Max.	55			$^\circ\text{C/W}$

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

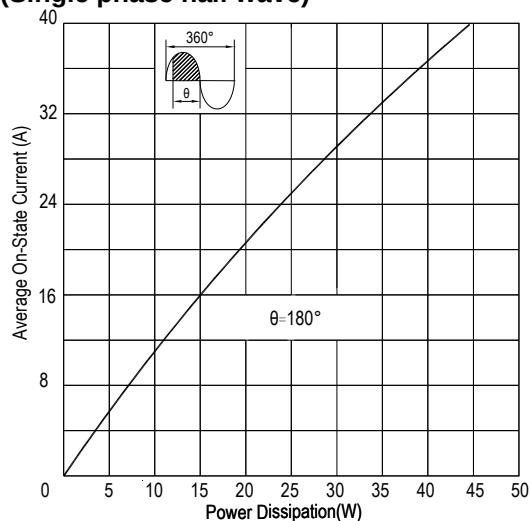


FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)

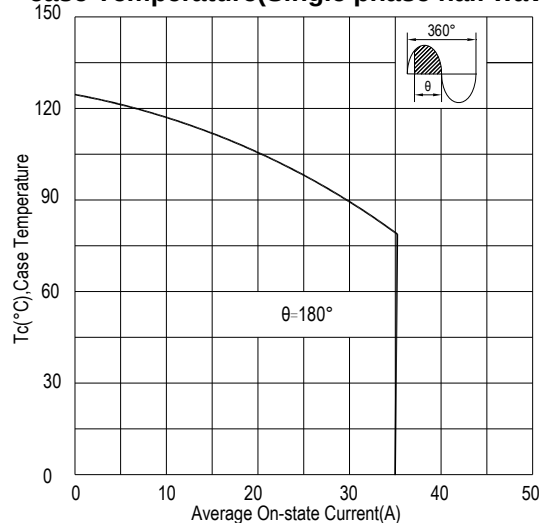
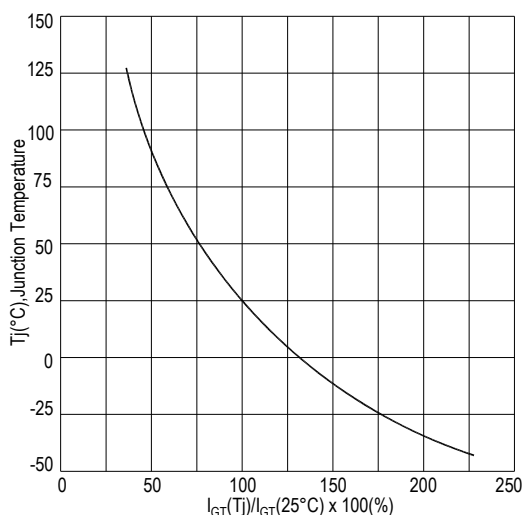


FIG.3: Gate trigger current VS Junction temperature



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

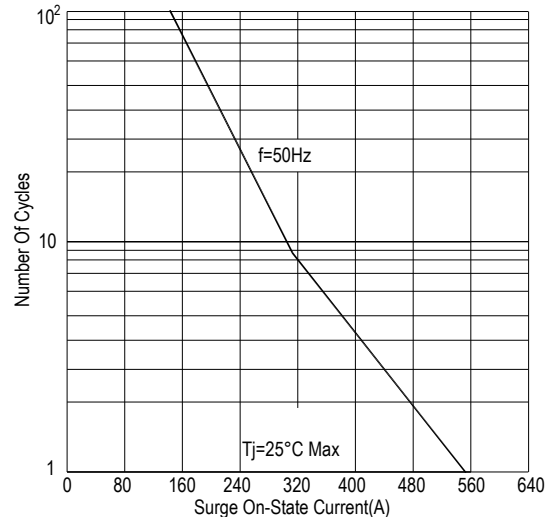


FIG.5: On-state characteristics(Max)

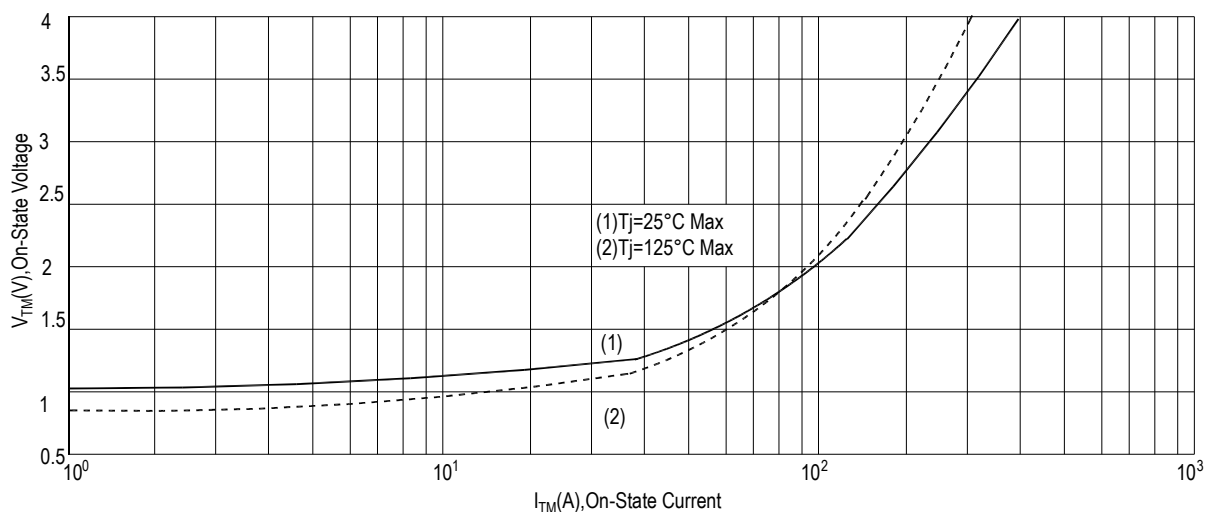


FIG.6:Holding current and Latching current VS Junction temperature

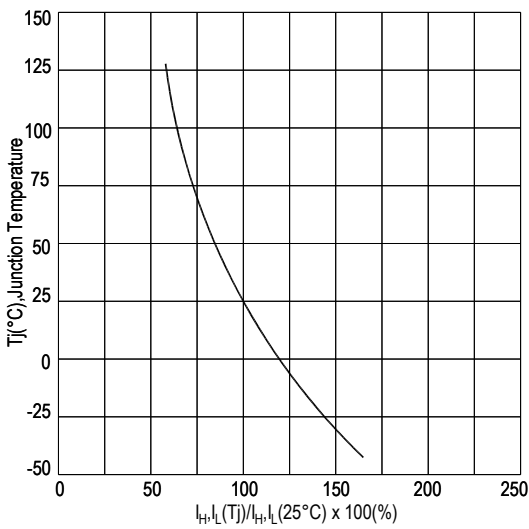
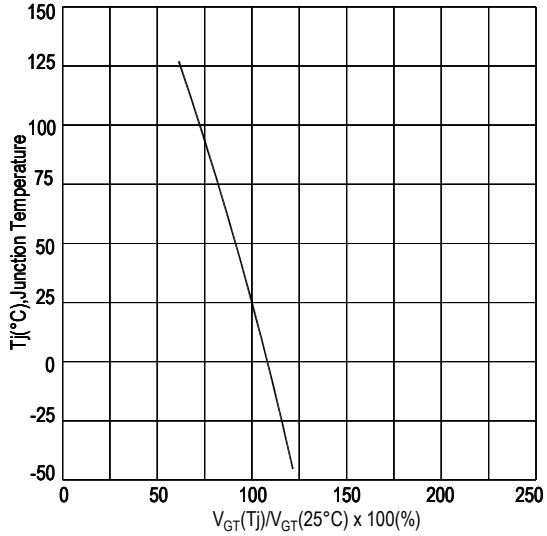
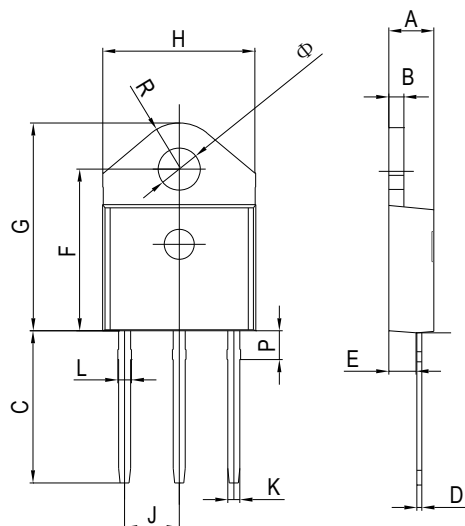


FIG.7: Gate trigger voltage VS Junction temperature



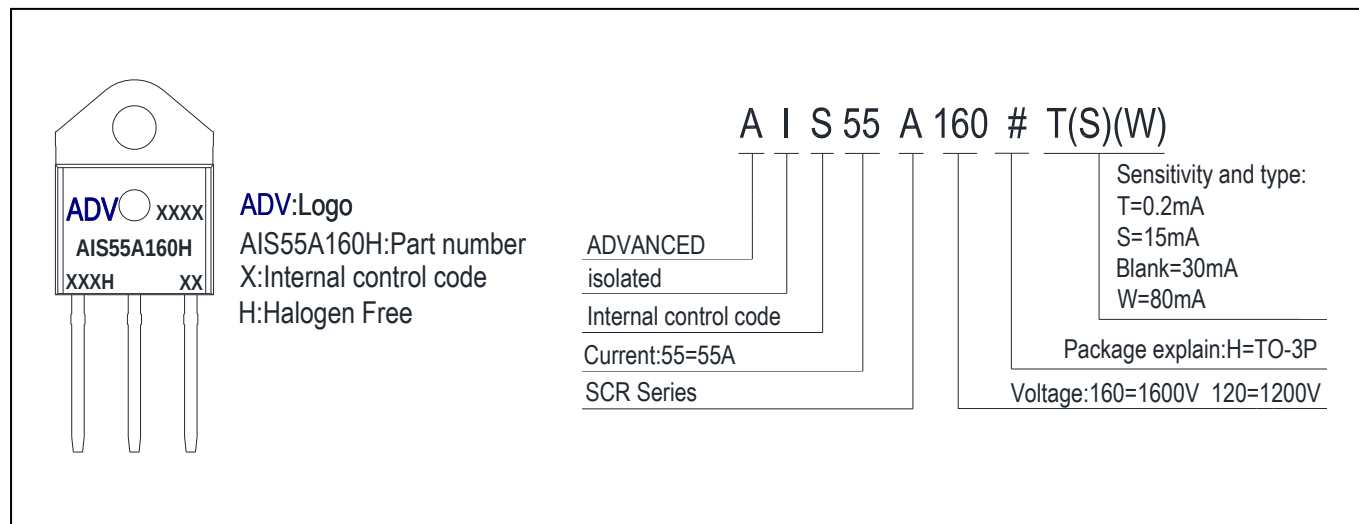
PACKAGE MECHANICAL DATA

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



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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