

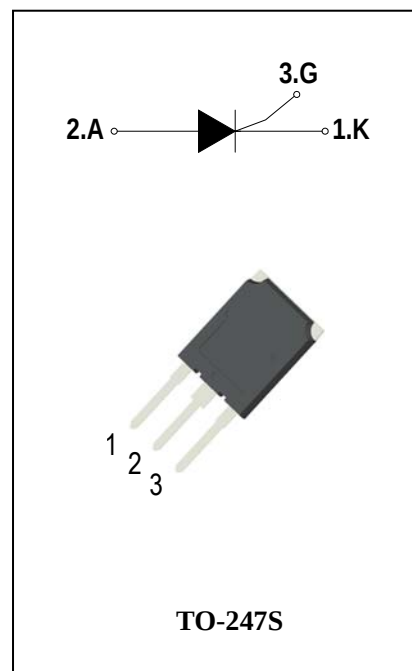
SCRs

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 : 1000V and 1200V
- ◆ 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	$T_j = 25^\circ\text{C}$	ADS55A100S	1000	V
V_{RRM}	Repetitive peak reverse voltage		ADS55A120S	1200	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , $T_c = 83^\circ\text{C}$		40	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , $T_c = 83^\circ\text{C}$		55	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, $t_p = 10\text{ms}(50\text{Hz}) T_j = 25^\circ\text{C}$		520	A
I^2t	I^2t for Fusing	$T_j = 25^\circ\text{C}, t_p = 10\text{ms}$		1350	A^2S
P_{GM}	Forward Peak Gate Power Dissipation	$T_j = 125^\circ\text{C}$, 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	$T_j = 125^\circ\text{C}$, 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		ADS55A100S/120S			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.	1.6			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	$V_D = 2/3V_{\text{DRM}}$ gate open $T_j = 125^\circ\text{C}$	Min.	700	1000	1500	V/ μs
$R_{\text{th(j-c)}}$	Junction to case (AC)		Max.	0.6			$^\circ\text{C/W}$
$R_{\text{th(j-a)}}$	Junction to ambient		Max.	50			$^\circ\text{C/W}$

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

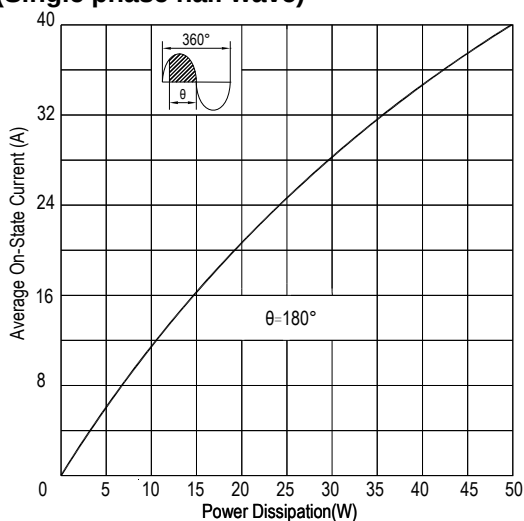


FIG.2: Average on-state current VS Allowable case Temperature (Single phase half wave)

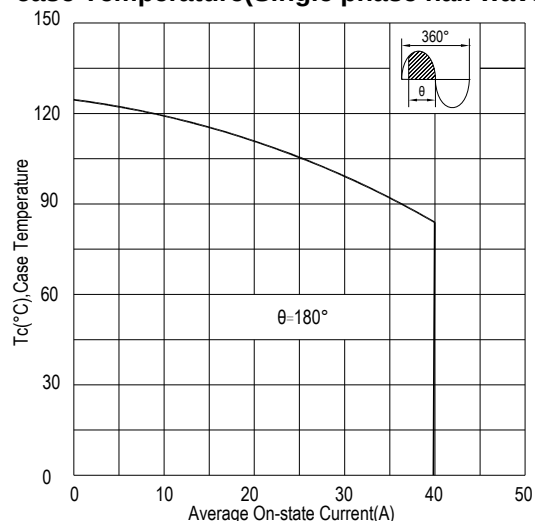


FIG.3: Gate trigger current VS Junction temperature

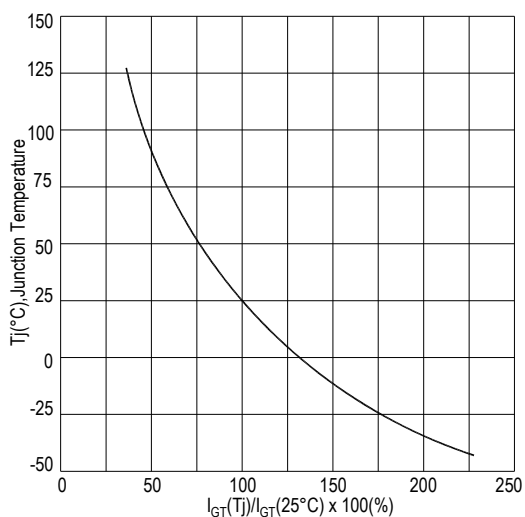


FIG.4: Rated surge on-state current (Non-Repetitive)

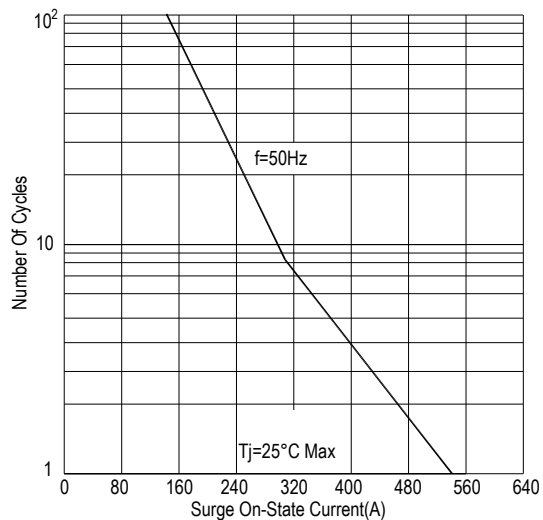


FIG.5: On-state characteristics(Max)

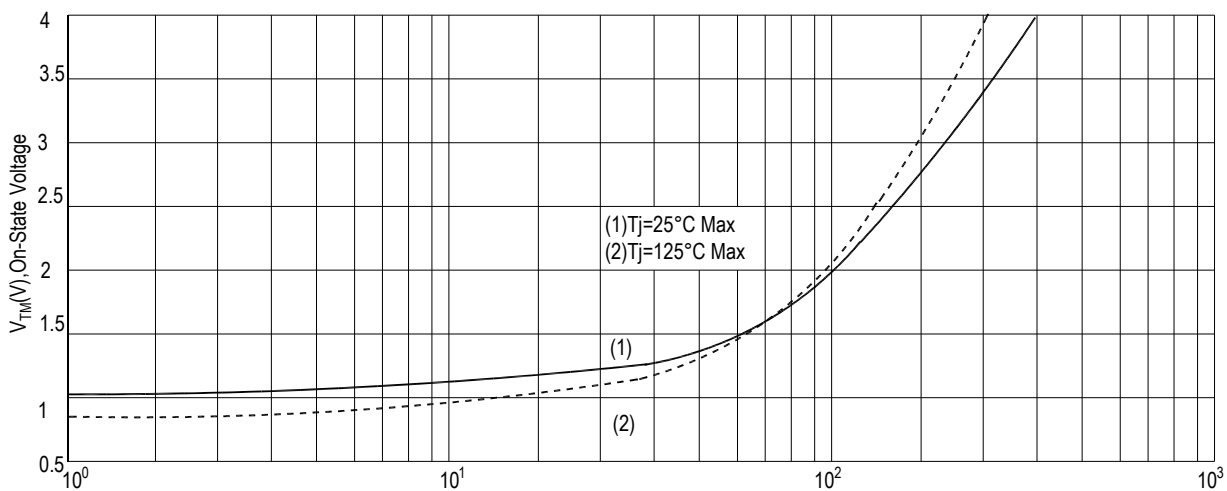


FIG.6:Holding current and Latching current VS Junction temperature

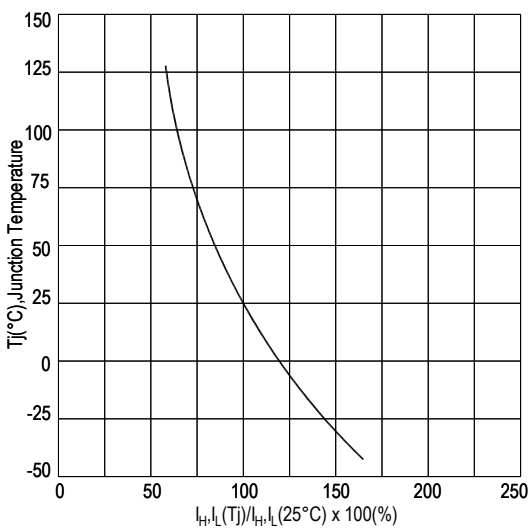
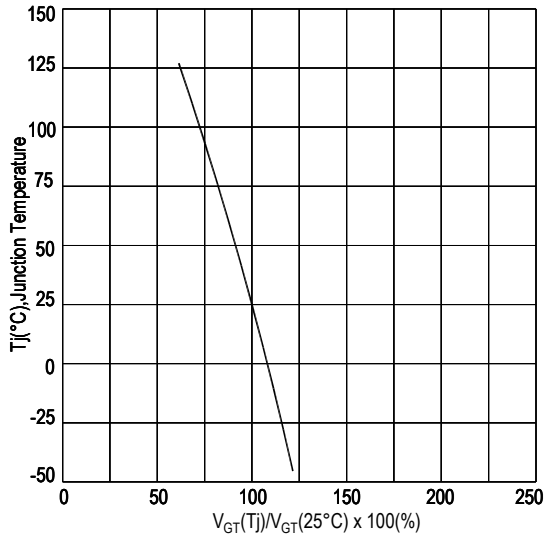
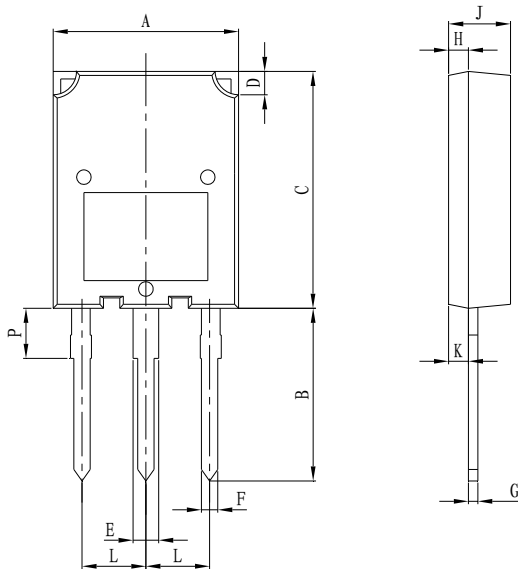


FIG.7: Gate trigger voltage VS Junction temperature



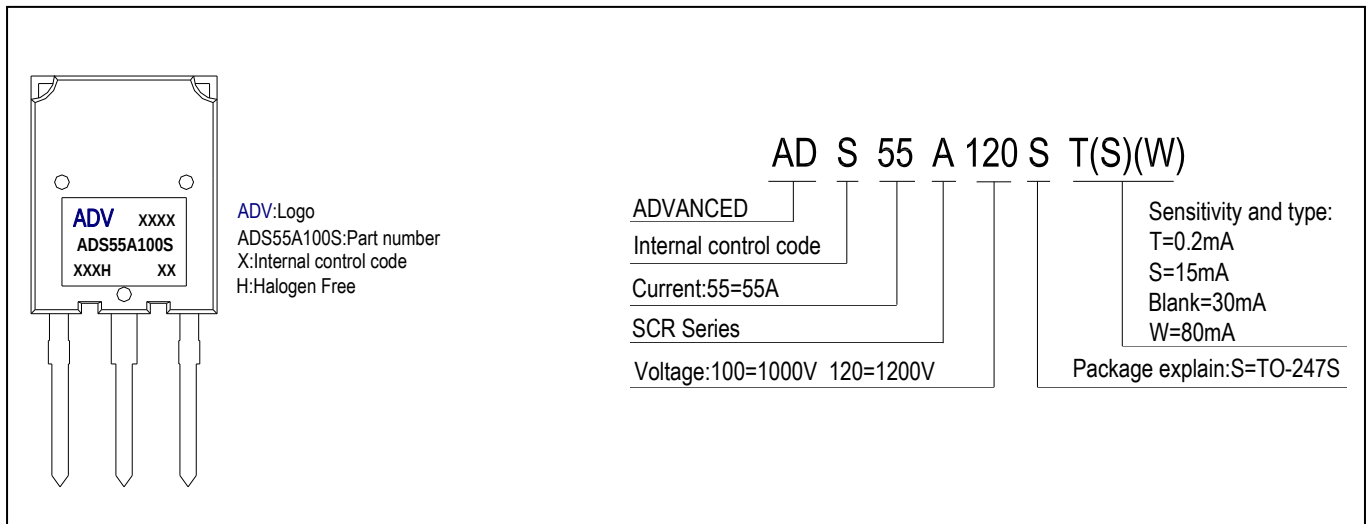
PACKAGE MECHANICAL DATA

TO-247S Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	15.10	16.10	0.595	0.632
B	13.80	14.80	0.544	0.582
C	19.80	20.80	0.780	0.818
D	2.00	2.40	0.079	0.095
E	2.75	3.35	0.108	0.132
F	1.30	1.50	0.051	0.059
G	0.55	0.80	0.022	0.032
H	1.45	2.15	0.058	0.084
J	4.50	5.50	0.178	0.216
K	1.90	2.80	0.075	0.110
L	5.10	5.80	0.201	0.228
P	3.00	4.00	0.108	0.157

Making Diagram



Ordering information

Part number	Package	Marking	Packing	Quantity
ADS55A100S#	TO-247S	ADS55A100S#	Tube	25pcs
ADS55A120S#	TO-247S	ADS55A120S#	Tube	25pcs

Note: # = Gate Trigger Current Sensitivity and type

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