

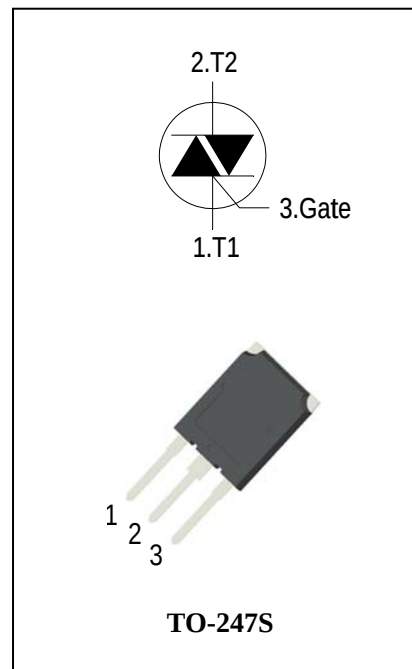
3 Quadrants Triacs

General Description

High current density due to mesa technology . the ADS55C triac series is suitable for general purpose AC switching. They can be used as an ON/OFF function in applications such as static relays, heating regulation, High power motor controls ,Rectifier-fed DC inductive loads e.g.DC motors and solenoids , motor speed controllers.

Features

- ◆ Repetitive Peak Off-State Voltage: 1000V/1200V/1600V
- ◆ R.M.S On-State Current ($I_{T(RMS)} = 55A$)
- ◆ High Commutation dv/dt
- ◆ These Devices are Pb-Free and are RoHS Compliant



Absolute Maximum Ratings

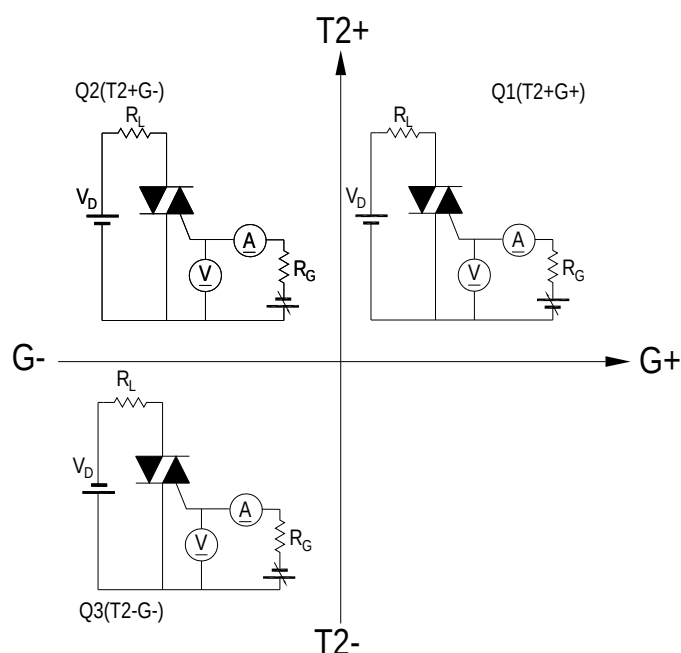
Symbol	Items	Conditions		Ratings	Unit
V_{DRM} V_{RRM}	Repetitive Peak Off-State Voltage	$T_j = 25^{\circ}C$	ADS55C100S	1000	V
			ADS55C120S	1200	V
			ADS55C160S	1600	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_C = 75^{\circ}C$		55	A
I_{TSM}	Surge On-State Current	$t_p=20ms(50Hz)/t_p=16.7ms(60Hz)$		550/590	A
I^2t	I^2t for fusing	$t_p=10ms$		1500	A^2s
di/dt	Critical rate of rise of on-state current	$F = 120\text{ Hz}$ $T_j = 125^{\circ}C$ $I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$		100	$A/\mu s$
I_{GM}	Peak Gate Current	$t_p = 20\text{ }\mu s$ $T_j = 125^{\circ}C$		8	A
$P_{G(AV)}$	Average Gate Power Dissipation($T_j=125^{\circ}C$)			2	W
P_{GM}	Peak Gate Power Dissipation($t_p=20\mu s, T_j=125^{\circ}C$)			10	W
T_j	Operating Junction Temperature			- 40 ~ 125	$^{\circ}C$
T_{STG}	Storage Temperature			- 40 ~ 150	$^{\circ}C$



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

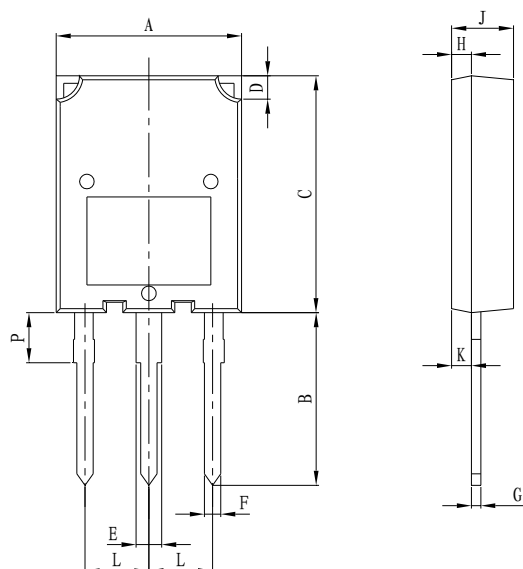
Symbol	Items		Conditions		ADS55C100S/120S/160S	Unit
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current		$V_{\text{DRM}} = V_{\text{RRM}}$, $T_{\text{j}} = 25^{\circ}\text{C}$	Max.	50	μA
			$V_{\text{DRM}} = V_{\text{RRM}}$, $T_{\text{j}} = 125^{\circ}\text{C}$		8	mA
V_{TM}	Peak On-State Voltage		$I_{\text{TM}} = 80\text{A}$, $t_{\text{p}} = 380\text{ }\mu\text{s}$	Max.	1.75	V
V_{GD}	Q1-Q2-Q3	Non—Trigger Gate Voltage	$V_{\text{D}} = V_{\text{DRM}}$ $R_{\text{L}} = 3.3\text{ k}\Omega$ $T_{\text{j}} = 125^{\circ}\text{C}$	Min.	0.2	V
V_{GT}	Q1-Q2-Q3	Gate Trigger Voltage	$V_{\text{D}} = 12\text{V}$, $R_{\text{L}} = 33\Omega$	Max.	1.3	V
I_{GT}	Q1-Q2-Q3	Gate Trigger Current		Max.	50	mA
I_{H}	Q1-Q2-Q3	Holding Current	$I_{\text{T}} = 0.5\text{A}$	Max.	75	mA
I_{L}	Q1-Q3	Latching Current	$I_{\text{G}} = 1.2\text{ }I_{\text{GT}}$	Max.	90	mA
	Q2				120	
dV/dt	Critical Rate of Rise of Off-State Voltage		$V_{\text{D}} = 2/3V_{\text{DRM}}$ gate open $T_{\text{j}} = 125^{\circ}\text{C}$	Min.	1000	V/ μs
(dV/dt)c	Critical Rate of Change of Commutating Voltage		(dI/dt)c=-22A/ms $T_{\text{j}} = 125^{\circ}\text{C}$	Min.	20	V/ μs
$R_{\text{th(j-c)}}$	Junction to case (AC)			Max.	0.5	$^{\circ}\text{C/W}$
$R_{\text{th(j-a)}}$	Junction to ambient			Max.	50	$^{\circ}\text{C/W}$

FIG.1:Triac quadrant are defined and the gate trigger test circuit



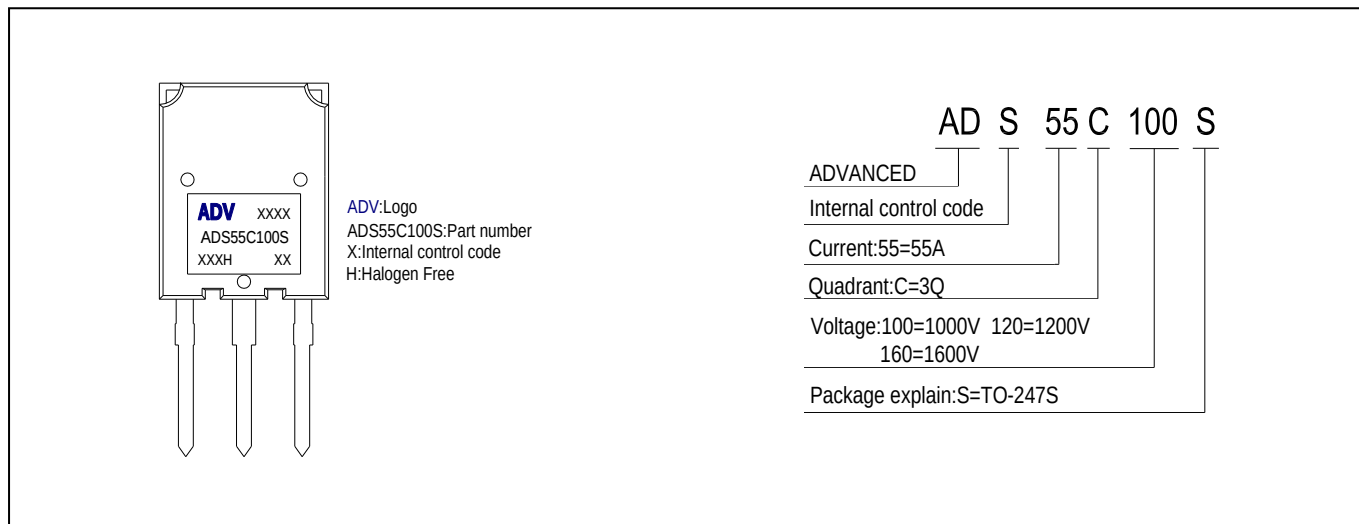
PACKAGE MECHANICAL DATA

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
ADS55C100S	TO-247S	ADS55C100S	Tube	30pcs
ADS55C120S	TO-247S	ADS55C120S	Tube	30pcs
ADS55C160S	TO-247S	ADS55C160S	Tube	30pcs

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