

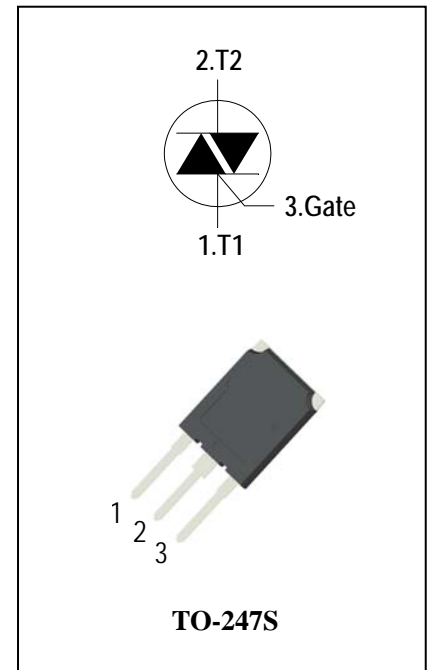
3 Quadrants Triacs

General Description

High current density due to mesa technology . the ADS60C 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 ($I_{T(RMS)} = 60A$)
- ◆ High Commutation dv/dt
- ◆ These Devices are Pb-Free and are RoHS Compliant



Absolute Maximum Ratings

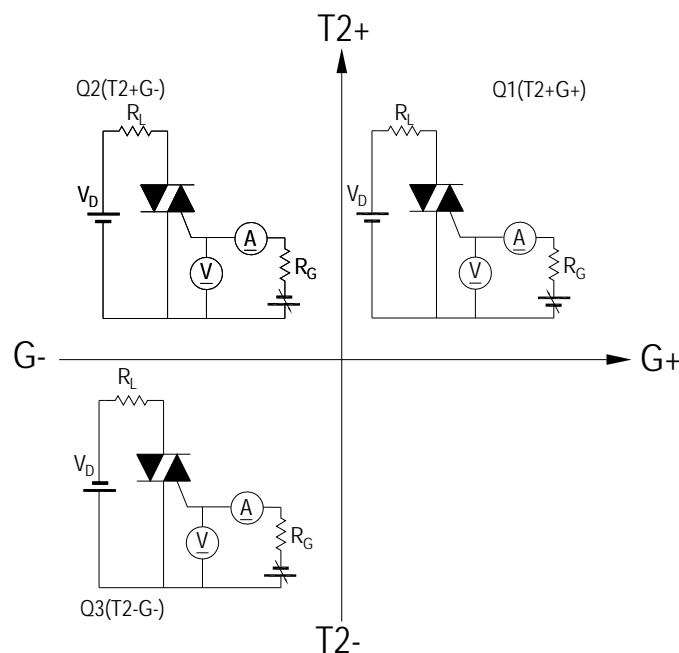
Symbol	Items	Conditions	Ratings	Unit
V_{DRM} V_{RRM}	Repetitive Peak Off-State Voltage	$T_j = 25^\circ C$	ADS60C100S 1000	V
			ADS60C120S 1200	V
			ADS60C160S 1600	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_C = 75^\circ C$	60	A
I_{TSM}	Surge On-State Current	$t_p = 20ms(50Hz) / t_p = 16.7ms(60Hz)$	600/640	A
I^2t	I^2t for fusing	$t_p = 10ms$	1800	A^2s
di/dt	Critical rate of rise of on-state current	$F = 120 Hz$ $T_j = 125^\circ C$ $I_G = 2 \times I_{GT}$, $t_r \leq 100 ns$	100	$A/\mu s$
I_{GM}	Peak Gate Current	$t_p = 20 \mu s$ $T_j = 125^\circ C$	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)

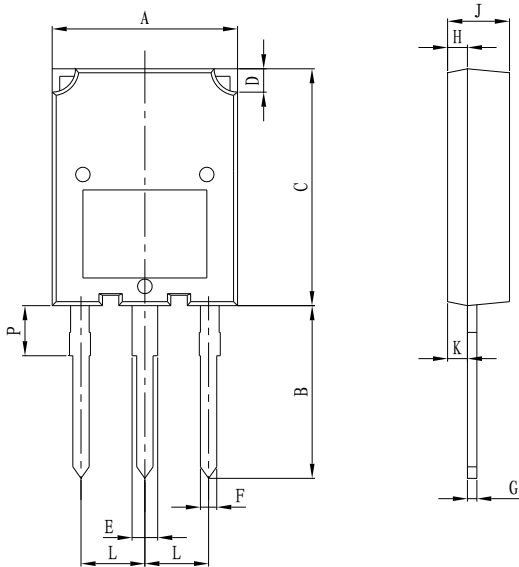
Symbol	Items		Conditions		ADS55C100S/120S/160S	Unit
I_{DRM}	Peak Forward Reverse Blocking		$V_{DRM} = V_{RRM}, T_j = 25^\circ\text{C}$	Max.	50	μA
I_{RRM}	Current		$V_{DRM} = V_{RRM}, T_j = 125^\circ\text{C}$		8	mA
V_{TM}	Peak On-State Voltage		$I_{TM} = 90\text{A}, t_p = 380 \mu\text{s}$	Max.	1.75	V
V_{GD}	Q1-Q2-Q3	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}	Q1-Q2-Q3	Gate Trigger Voltage	$V_D = 12\text{V}, R_L = 33\Omega$	Max.	1.3	V
I_{GT}	Q1-Q2-Q3	Gate Trigger Current		Max.	50	mA
I_H	Q1-Q2-Q3	Holding Current	$I_T = 0.5\text{A}$	Max.	75	mA
I_L	Q1-Q3	Latching Current	$I_G = 1.2 I_{GT}$	Max.	90	mA
	Q2				120	
dV/dt	Critical Rate of Rise of Off-State Voltage		$V_D = 2/3V_{DRM}$ gate open $T_j = 125^\circ\text{C}$	Min.	1000	$\text{V}/\mu\text{s}$
$(dV/dt)_c$	Critical Rate of Change of Commutating Voltage		$(dI/dt)_c = -23\text{A}/\text{ms}$ $T_j = 125^\circ\text{C}$	Min.	20	$\text{V}/\mu\text{s}$
$R_{th(j-c)}$	Junction to case (AC)			Max.	0.48	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient			Max.	50	$^\circ\text{C}/\text{W}$

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



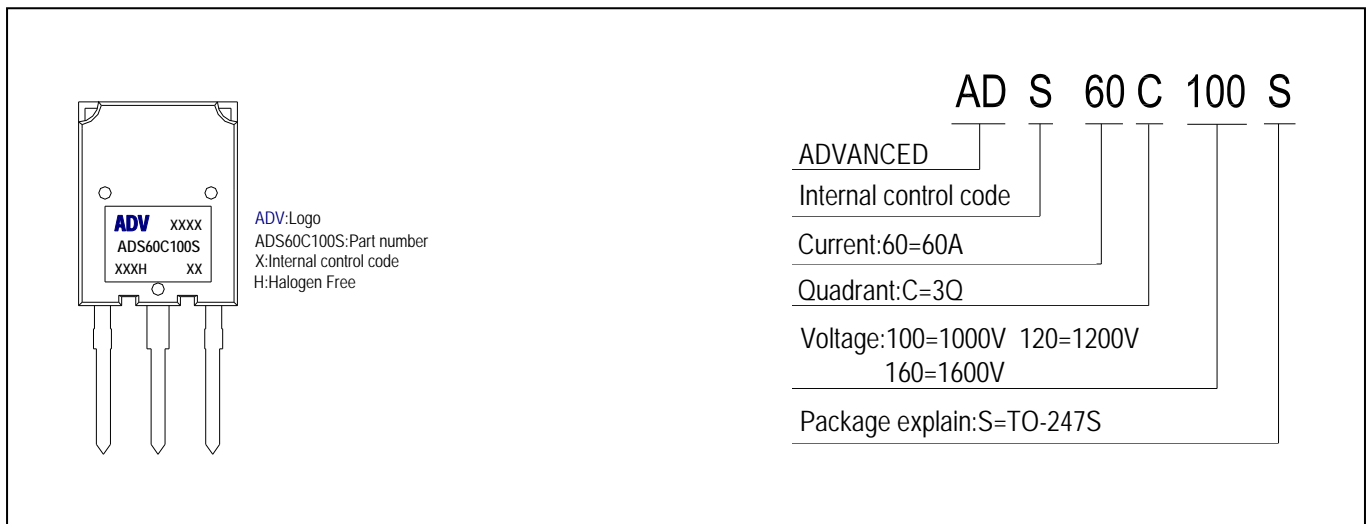
PACKAGE MECHANICAL DATA

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
ADS60C100S	TO-247S	ADS60C100S	Tube	30pcs
ADS60C120S	TO-247S	ADS60C120S	Tube	30pcs
ADS60C160S	TO-247S	ADS60C160S	Tube	30pcs

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