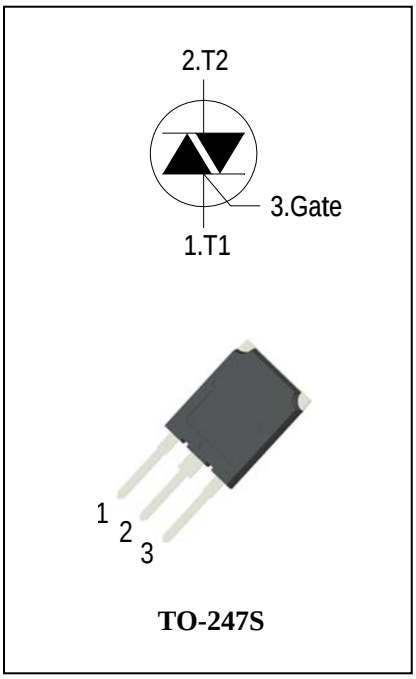
3 Quadrants Triacs

General Description

High current density due to mesa technology . the ADS80C 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.



TO-247S

Features

- ◆ Repetitive Peak Off-State Voltage: 1000V/1200V/1600V
- ◆ R.M.S On-State Current ($I_{T(RMS)}$= 80A)
- ◆ 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	Tj = 25°C	ADS80C100S	1000	V
			ADS80C120S	1200	V
			ADS80C160S	1600	V
$I_{T(RMS)}$	R.M.S On-State Current	T_C = 70°C		80	A
I_{TSM}	Surge On-State Current	tp=20ms(50Hz)/tp=16.7ms(60Hz)		800/852	A
I^2t	I^2t for fusing	tp=10ms		3200	A^2s
dI/dt	Critical rate of rise of on-state current	F = 120 Hz Tj = 125°C I_G = 2 x I_{GT} , tr ≤ 100 ns		100	A/μs
I_{GM}	Peak Gate Current	tp = 20 μs Tj = 125°C		8	A
$P_{G(AV)}$	Average Gate Power Dissipation(Tj=125°C)			2	W
P_{GM}	Peak Gate Power Dissipation(tp=20us,Tj=125°C)			10	W
T_j	Operating Junction Temperature			- 40 ~ 125	°C
T_{STG}	Storage Temperature			- 40 ~ 150	°C

ADV

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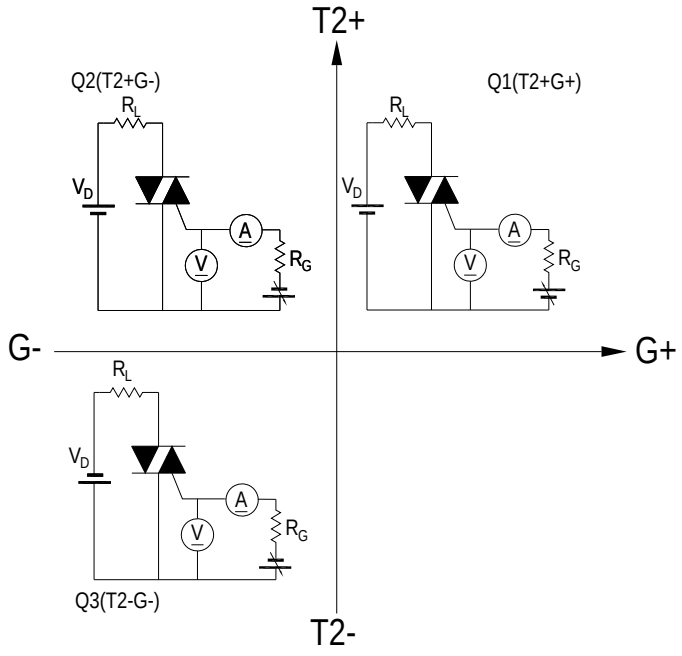
Electrical Characteristics(T_j = 25°C unless otherwise specified)

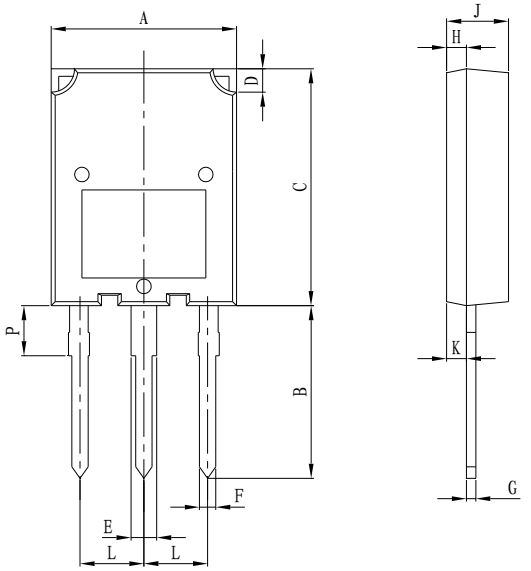
Symbol	Items		Conditions		ADS55C100S/120S/160S	Unit
I_{DRM}	Peak Forward Reverse Blocking Current		V_{DRM} = V_{RRM}, Tj = 25°C	Max.	50	uA
I_{RRM}			V_{DRM} = V_{RRM}, Tj = 125°C		8	mA
V_{TM}	Peak On-State Voltage		I_{TM} = 120A, t_p = 380 μs	Max.	1.75	V
V_{GD}	Q1-Q2-Q3	Non−Trigger Gate Voltage	V_D = V_{DRM} R_L = 3.3 kΩ Tj = 125°C	Min.	0.2	V
V_{GT}	Q1-Q2-Q3	Gate Trigger Voltage	V_D = 12V ， R_L = 33Ω	Max.	1.3	V
I_{GT}	Q1-Q2-Q3	Gate Trigger Current		Max.	50	mA
I_H	Q1-Q2-Q3	Holding Current	I_T = 0.5A	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 Tj = 125°C	Min.	1000	V/μs
(dV/dt)c	Critical Rate of Change of Commutating Voltage		(dI/dt)c=-28A/ms Tj = 125°C	Min.	20	V/μs
$R_{th(j-c)}$	Junction to case (AC)			Max.	0.35	°C/W
$R_{th(j-a)}$	Junction to ambient			Max.	50	°C/W

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



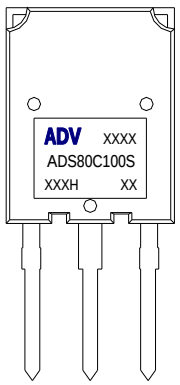
PACKAGE MECHANICAL DATA

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



ADV:Logo
ADS80C100S:Part number
X:Internal control code
H:Halogen Free

AD S 80 C 100 S

ADVANCED
Internal control code
Current:80=80A
Quadrant:C=3Q
Voltage:100=1000V 120=1200V
160=1600V
Package explain:S=TO-247S

Ordering information

Part number	Package	Marking	Packing	Quantity
ADS80C100S	TO-247S	ADS80C100S	Tube	30pcs
ADS80C120S	TO-247S	ADS80C120S	Tube	30pcs
ADS80C160S	TO-247S	ADS80C160S	Tube	30pcs

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