

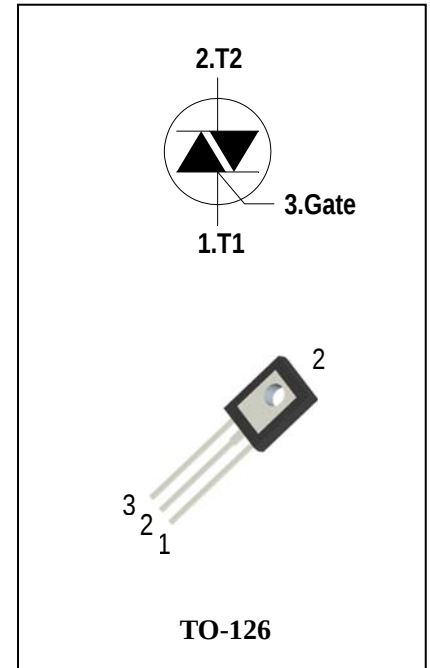
3 Quadrants Triacs

General Description

High current density due to mesa technology .the ADS4C 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, Rectifier-fed DC inductive loads e.g.DC motors and solenoids , motor speed controllers.

Features

- ◆ Repetitive Peak Off-State Voltage: 600Vand800V
- ◆ R.M.S On-State Current ($I_{T(RMS)} = 4A$)
- ◆ 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	$T_j = 25^{\circ}C$	ADS4C60B	600	V
			ADS4C80B	800	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_C = 110^{\circ}C$		4	A
I_{TSM}	Surge On-State Current	$t_p=20ms(50Hz)/t_p=16.7ms(60Hz)$		25/27	A
I^2t	I^2t for fusing	$t_p=10ms$		3.1	A^2s
di/dt	Critical rate of rise of on-state current	$F = 120\text{ Hz}$ $T_j = 125^{\circ}C$ $I_G = 2 \times I_{GT}$, $tr \leq 100\text{ ns}$		50	$A/\mu s$
I_{GM}	Peak Gate Current	$t_p = 20\text{ }\mu s$ $T_j = 125^{\circ}C$		2	A
$P_{G(AV)}$	Average Gate Power Dissipation($T_j=125^{\circ}C$)			0.5	W
P_{GM}	Peak Gate Power Dissipation($t_p=20\mu s, T_j=125^{\circ}C$)			5	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		ADS4C60B/80B				Unit
					T	S	Blank	B	
I _{DRM}	Peak Forward Reverse Blocking Current		V _{DRM} = V _{RRM} , T _j = 25°C	Max.	5				uA
I _{RRM}			V _{DRM} = V _{RRM} , T _j = 125°C		1				mA
V _{TM}	Peak On-State Voltage		I _{TM} = 5A, t _p = 380 μs	Max.	1.7				V
V _{GD}	Q1-Q2-Q3	Non-Trigger Gate Voltage	V _D = V _{DRM} R _L = 3.3 kΩ T _j = 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.	5	10	35	50	mA
I _H	Q1-Q2-Q3	Holding Current	I _T = 0.1A	Max.	10	15	40	60	mA
I _L	Q1-Q3	Latching Current	I _G = 1.2 I _{GT}	Max.	10	25	50	70	mA
	Q2				15	30	70	80	
dV/dt	Critical Rate of Rise of Off-State Voltage		V _D = 2/3V _{DRM} gate open T _j = 125°C	Min.	20	40	400	1000	V/μs
(dV/dt) _c	Rate of Change of Commutating Current,		(dI/dt) _c =-1.7A/ms T _j = 125°C	Min.	0.5	1	10	25	V/μs
R _{th(j-c)}	Junction to case (AC)			Max.	3.0				°C/W
R _{th(j-a)}	Junction to ambient			Max.	100				°C/W

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

FIG.2: Maximum on-state power dissipation

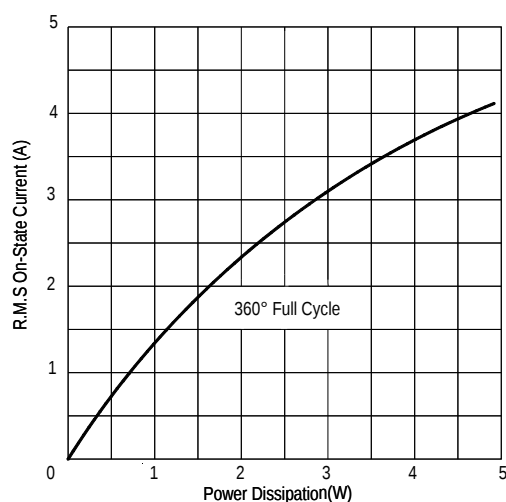


FIG.4: Maximum transient thermal impedance

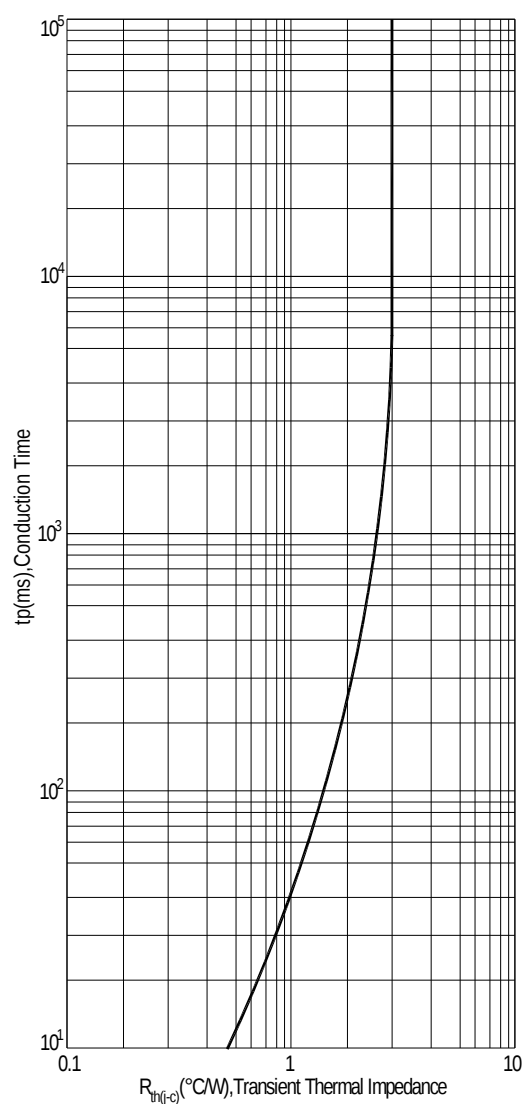


FIG.3: Typical RMS on-state current VS Allowable case Temperature

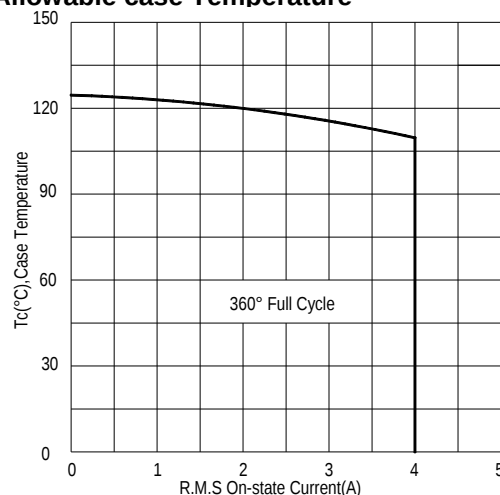


FIG.5: Rated surge on-state current (Non-Repetitive)

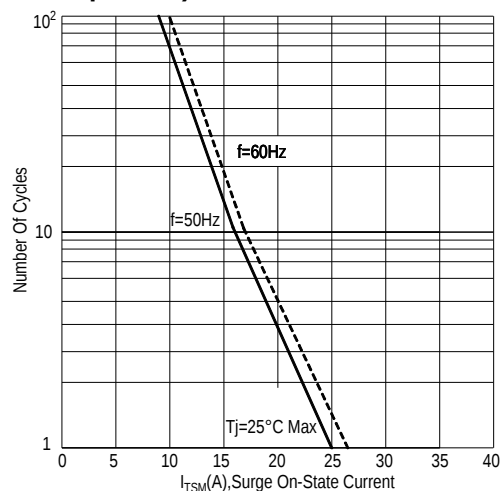


FIG.6: Gate trigger current VS Junction temperature

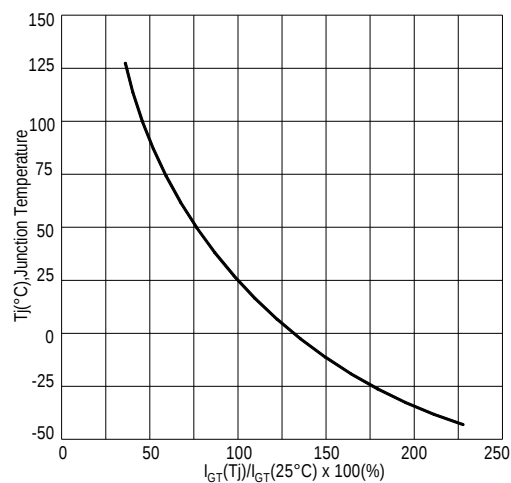


FIG.7:Holding current and Latching current VS Junction temperature

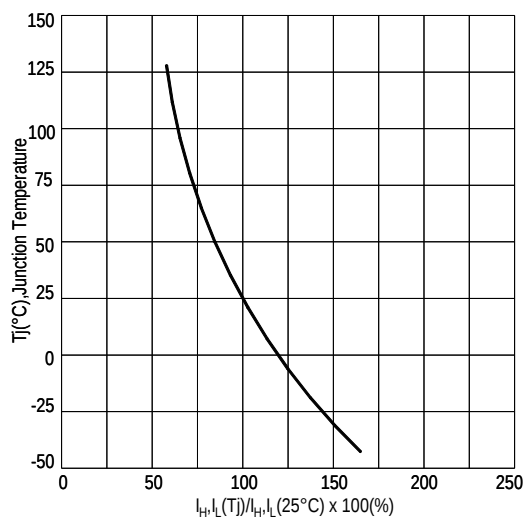


FIG.8: Gate trigger voltage VS Junction temperature

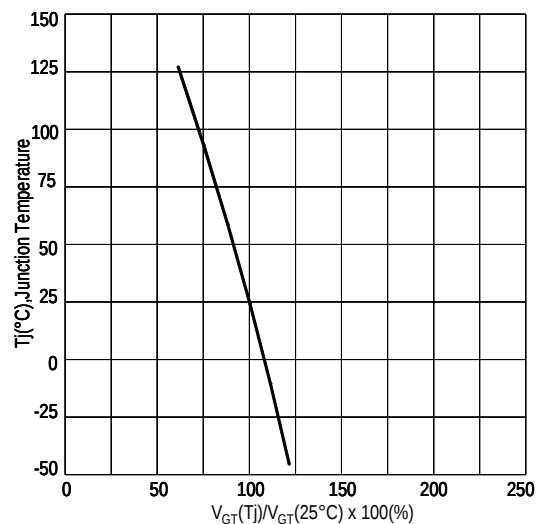
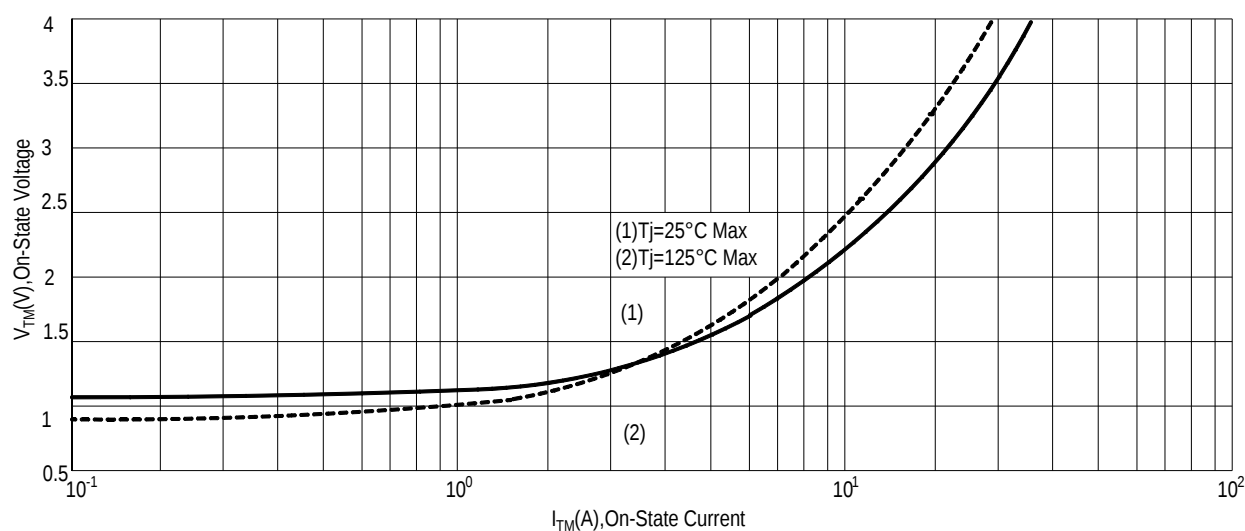
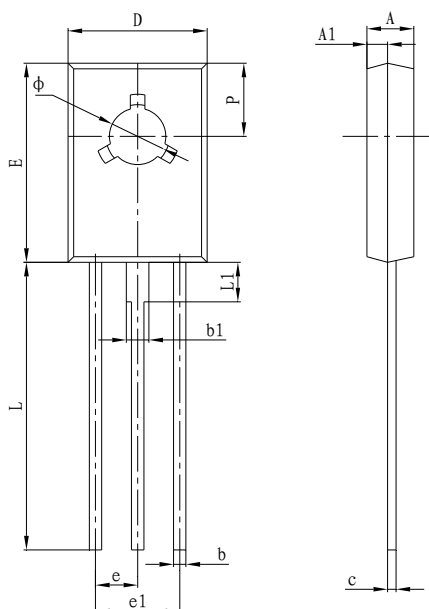


FIG.9: On-state characteristics(Max)



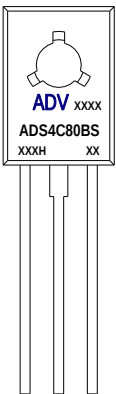
PACKAGE MECHANICAL DATA

TO-126 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.500	2.900	0.098	0.114
A1	1.100	1.500	0.043	0.059
b	0.660	0.860	0.026	0.034
b1	1.170	1.370	0.046	0.054
c	0.450	0.600	0.018	0.024
D	7.400	8.000	0.291	0.315
E	10.600	11.000	0.417	0.433
e	2.290 TYP		0.090 TYP	
e1	4.480	4.680	0.176	0.184
L	15.300	15.700	0.602	0.618
L1	2.100	2.300	0.083	0.091
P	3.900	4.100	0.154	0.161
Φ	3.000	3.200	0.118	0.126

Making Diagram



ADV:Logo
 ADS4C80BS:Part number
 X:Internal control code
 H:Halogen Free

A D S 4 C 80 B T(S)(B)

ADVANCED

Internal control code

Current:4=4A

Quadrant:C=3Q

Voltage:60=600V 80=800V

Sensitivity and type:
 T=5mA
 S=10mA
 Blank=35mA
 B=50mA

Package explain:B=TO-126

Ordering information

Part number	Package	Marking	Packing	Quantity
ADS4C60B#	TO-126	ADS4C60B#	Vinyl sack	500pcs
ADS4C80B#	TO-126	ADS4C80B#	Vinyl sack	500pcs

Note:# = Gate Trigger Current Sensitivity and type

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