

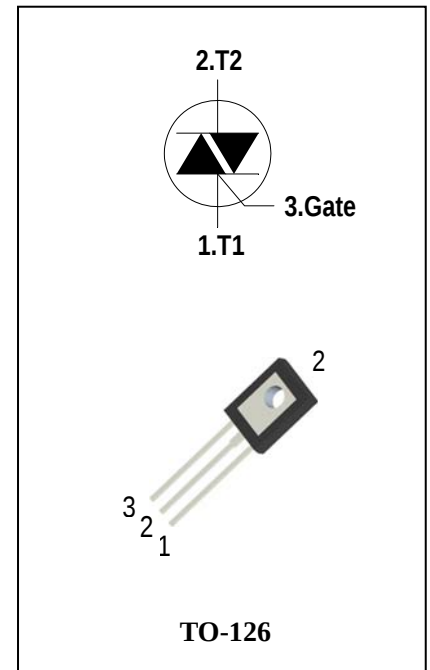
4 Quadrants Triacs

General Description

High current density due to mesa technology .the ADS4D 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 ($I_{T(RMS)} = 4A$)
- ◆ 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	$T_j = 25^{\circ}C$	ADS4D60B	600	V
			ADS4D80B	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	$F = 120\text{ Hz}$ $T_j = 125^{\circ}C$	Q1-Q2-Q3	50	$A/\mu s$
		$I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$	Q4	10	
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		ADS4D60B/80B				Unit
				T	S	Blank	B	
I_{DRM}	Peak Forward Reverse Blocking Current	$V_{\text{DRM}} = V_{\text{RRM}}, T_j = 25^\circ\text{C}$	Max.	5				μA
I_{RRM}		$V_{\text{DRM}} = V_{\text{RRM}}, T_j = 125^\circ\text{C}$		1				mA
V_{TM}	Peak On-State Voltage	$I_{\text{TM}} = 5\text{A}, t_p = 380\mu\text{s}$	Max.	1.7				V
V_{GD}	Q1-Q2-Q3-Q4	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}	Q1-Q2-Q3-Q4	GateTrigger Voltage	Max.	1.3				V
I_{GT}	Q1-Q2-Q3	GateTrigger Current $V_D = 12\text{V}, R_L = 33\Omega$	Max.	5	10	35	50	mA
	Q4			10	25	70	100	
I_{H}	Q1-Q2-Q3-Q4	Holding Current $I_T = 0.1\text{A}$	Max.	10	25	35	60	mA
I_{L}	Q1-Q3-Q4	Latching Current $I_G = 1.2 I_{\text{GT}}$	Max.	15	30	40	60	mA
	Q2			20	40	60	90	
dV/dt	Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{\text{DRM}}$ gate open $T_j = 125^\circ\text{C}$	Min.	5	10	50	200	$\text{V}/\mu\text{s}$
$(dV/dt)_c$	Rate of Change of Commutating Current,	$(dI/dt)_c = -1.1\text{A/ms}$ $T_j = 125^\circ\text{C}$	Min.	1	2	5	10	$\text{V}/\mu\text{s}$
$R_{\text{th(j-c)}}$	Junction to case (AC)		Max.	3.0				$^\circ\text{C}/\text{W}$
$R_{\text{th(j-a)}}$	Junction to ambient		Max.	100				$^\circ\text{C}/\text{W}$

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

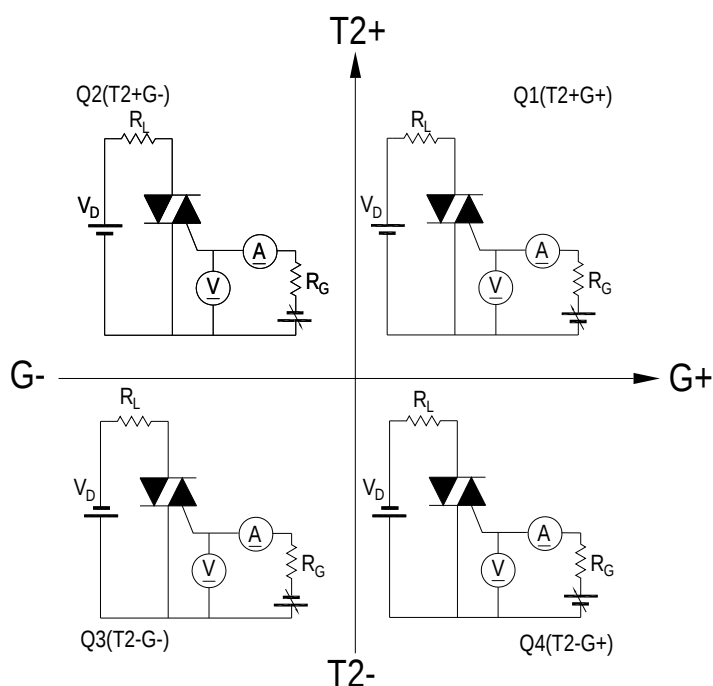


FIG.2: Maximum on-state power dissipation

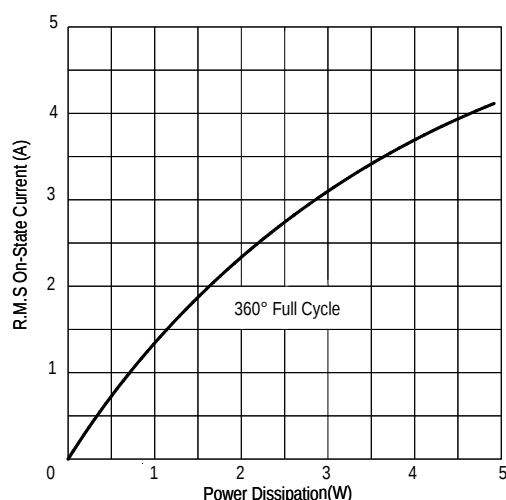


FIG.4: Maximum transient thermal impedance

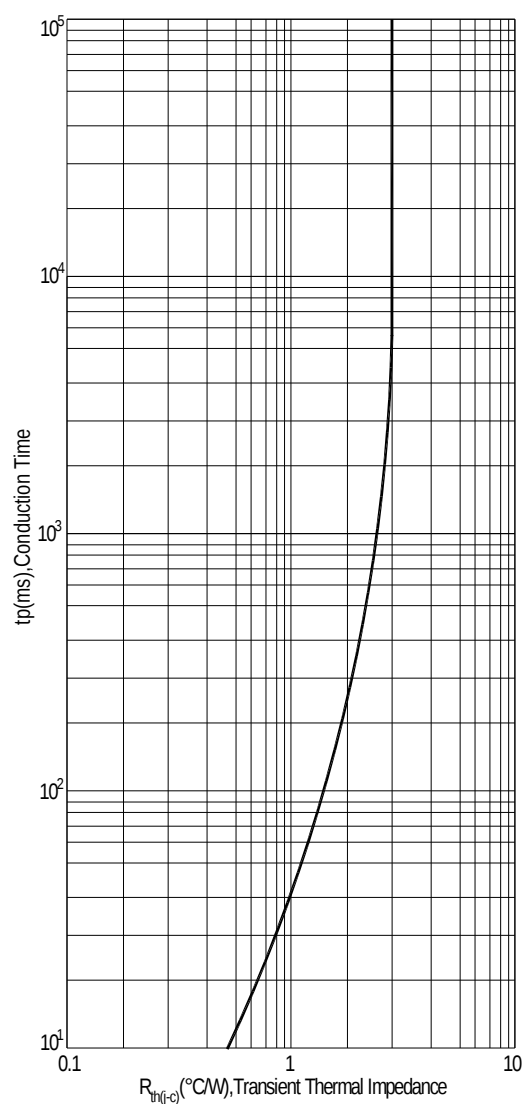


FIG.3: Typical RMS on-state current VS Allowable case Temperature

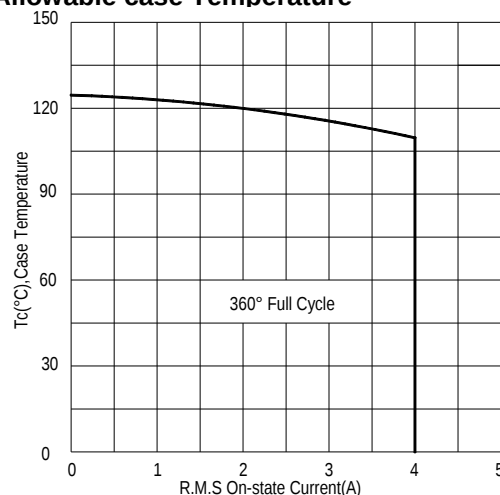


FIG.5: Rated surge on-state current (Non-Repetitive)

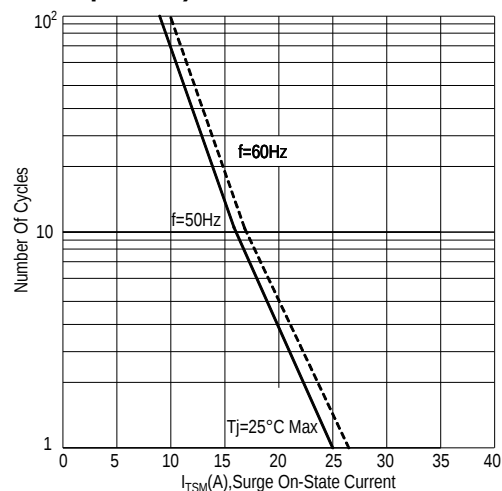


FIG.6: Gate trigger current VS Junction temperature

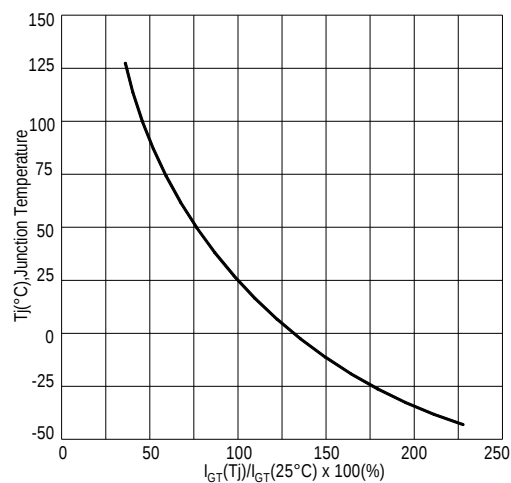


FIG.7:Holding current and Latching current VS Junction temperature

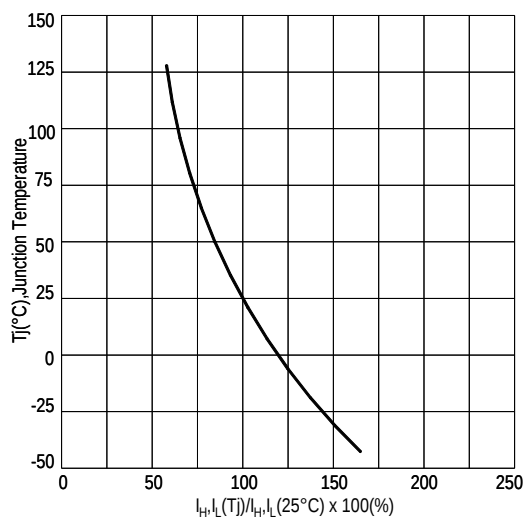


FIG.8: Gate trigger voltage VS Junction temperature

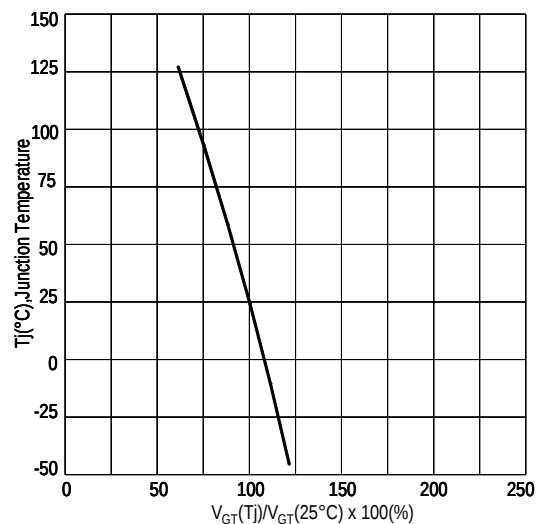
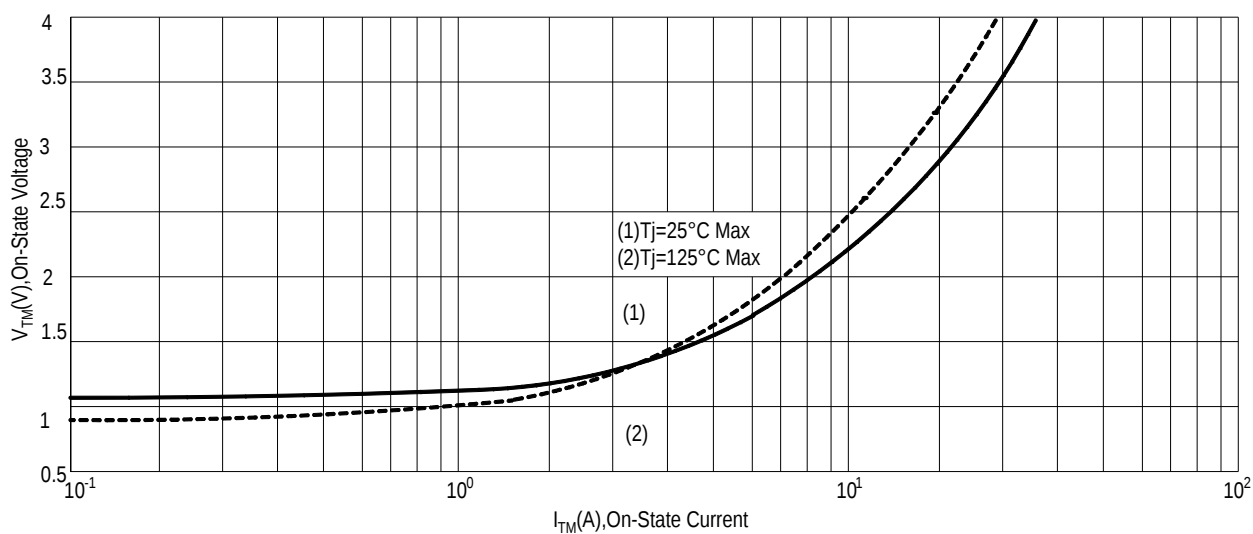
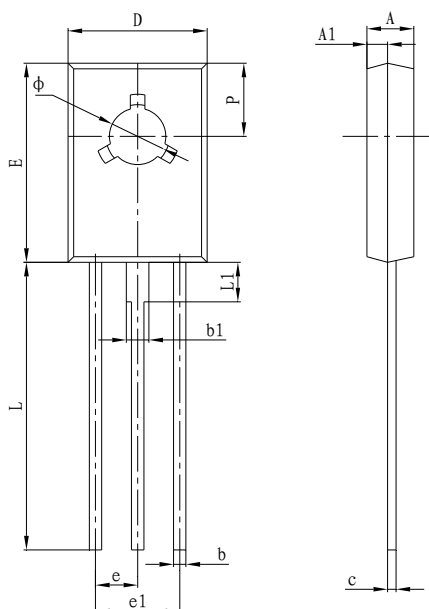


FIG.9: On-state characteristics(Max)



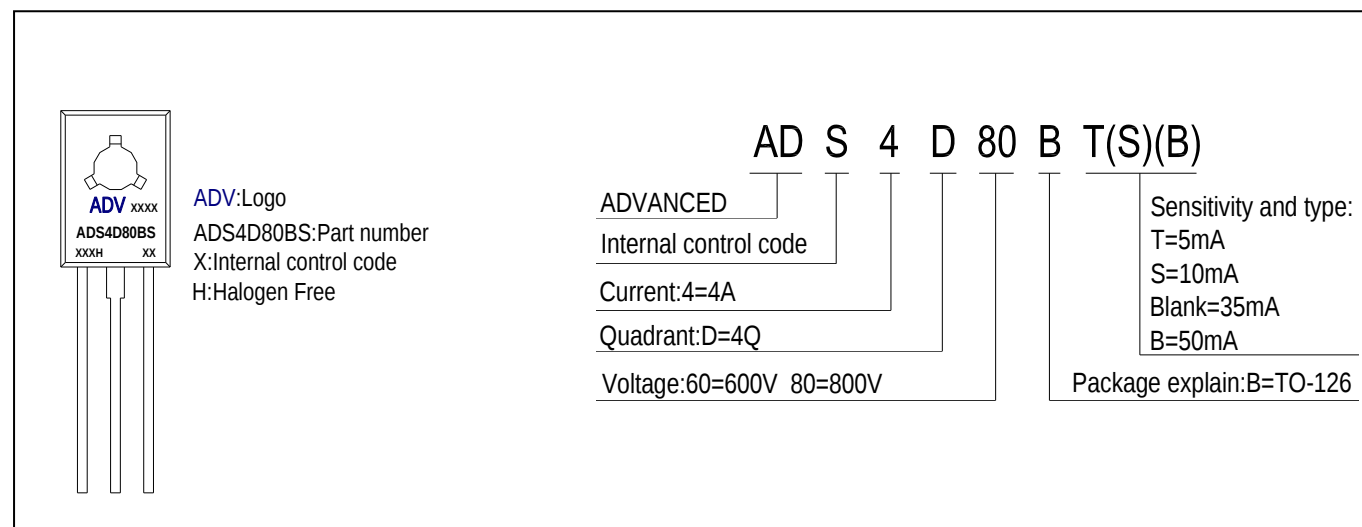
PACKAGE MECHANICAL DATA

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



Ordering information

Part number	Package	Marking	Packing	Quantity
ADS4D60B#	TO-126	ADS4D60B#	Vinyl sack	500pcs
ADS4D80B#	TO-126	ADS4D80B#	Vinyl sack	500pcs

Note: # = Gate Trigger Current Sensitivity and type

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