

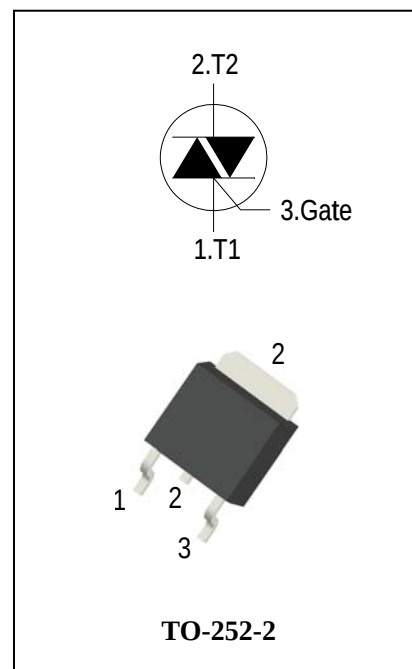
4Quadrants Triacs

General Description

High current density due to mesa technology . the ADS8D 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 e.g. washing machines and vacuum cleaners, Rectifier-fed DC inductive loads e.g. DC motors and solenoids , motor speed controllers.

Features

- ◆ Repetitive Peak Off-State Voltage: 600V and 800V
- ◆ R.M.S On-State Current ($I_{T(RMS)} = 8A$)
- ◆ 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	$T_j = 25^{\circ}C$	ADS8D60E	600	V
			ADS8D80E	800	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_C = 110^{\circ}C$		8	A
I_{TSM}	Surge On-State Current	$t_p=20ms(50Hz)/t_p=16.7ms(60Hz)$		80/84	A
I^2t	I^2t for fusing	$t_p=10ms$		36	A^2s
di/dt	Critical rate of rise of on-state current	$F = 120\text{ Hz}$ $T_j = 125^{\circ}C$ $I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$		50	$A/\mu s$
I_{GM}	Peak Gate Current	$t_p = 20\text{ }\mu s$ $T_j = 125^{\circ}C$		4	A
$P_{G(AV)}$	Average Gate Power Dissipation($T_j=125^{\circ}C$)			1	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		ADS8D60E/80E				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	$I_{\text{TM}} = 11\text{A}, t_p = 380 \mu\text{s}$	Max.	1.55				V
V_{GD}	Q1-Q2-Q3-Q4	Non – Trigger Gate Voltage	Min.	0.2				V
V_{GT}	Q1-Q2-Q3-Q4	Gate Trigger Voltage	Max.	1.3				V
I_{GT}	Q1-Q2-Q3	Gate Trigger Current	Max.	5	10	35	50	mA
	Q4			10	25	70	100	
I_{H}	Q1-Q2-Q3-Q4	Holding Current	Max.	10	25	35	60	mA
I_{L}	Q1-Q3-Q4	Latching Current	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.	10	20	200	400	$\text{V}/\mu\text{s}$
$(dV/dt)_c$	Rate of Change of Commutating Current,	$(dI/dt)_c = -3.5\text{A/ms}$ $T_J = 125^\circ\text{C}$	Min.	1	2	5	10	$\text{V}/\mu\text{s}$
$R_{\text{th(j-c)}}$	Junction to case (AC)		Max.	1.6				$^\circ\text{C}/\text{W}$
$R_{\text{th(j-a)}}$	Junction to ambient(Copper surface under tab:S=0.5cm ²)		Max.	70				$^\circ\text{C}/\text{W}$

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

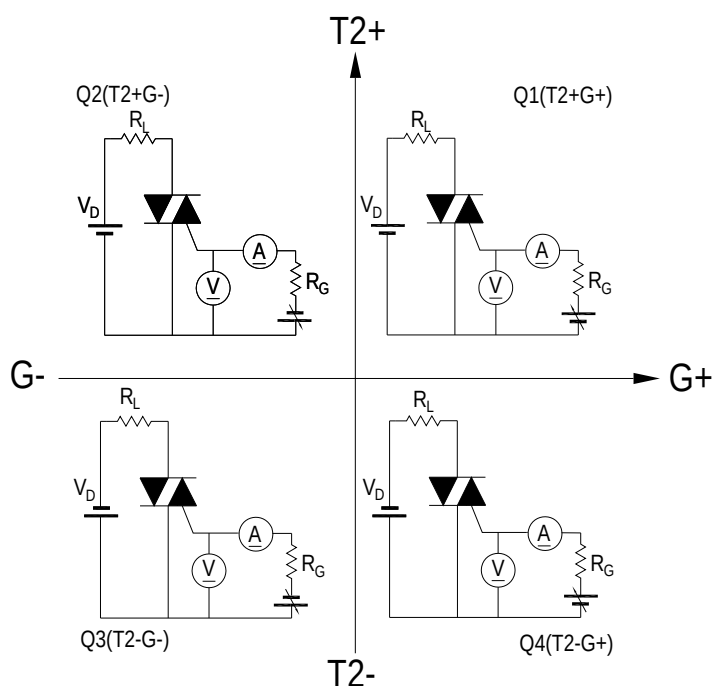


FIG.2: Maximum on-state power dissipation

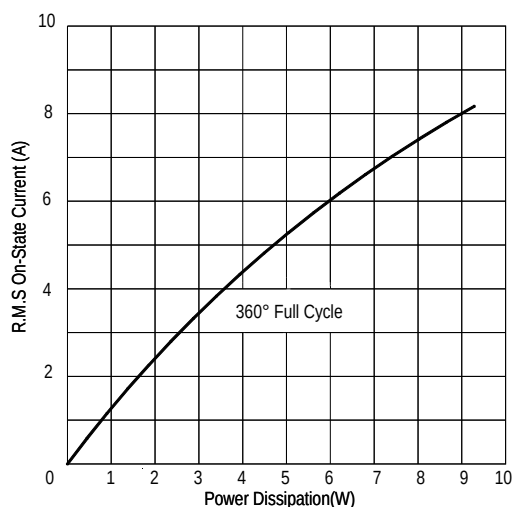


FIG.4: Maximum transient thermal impedance

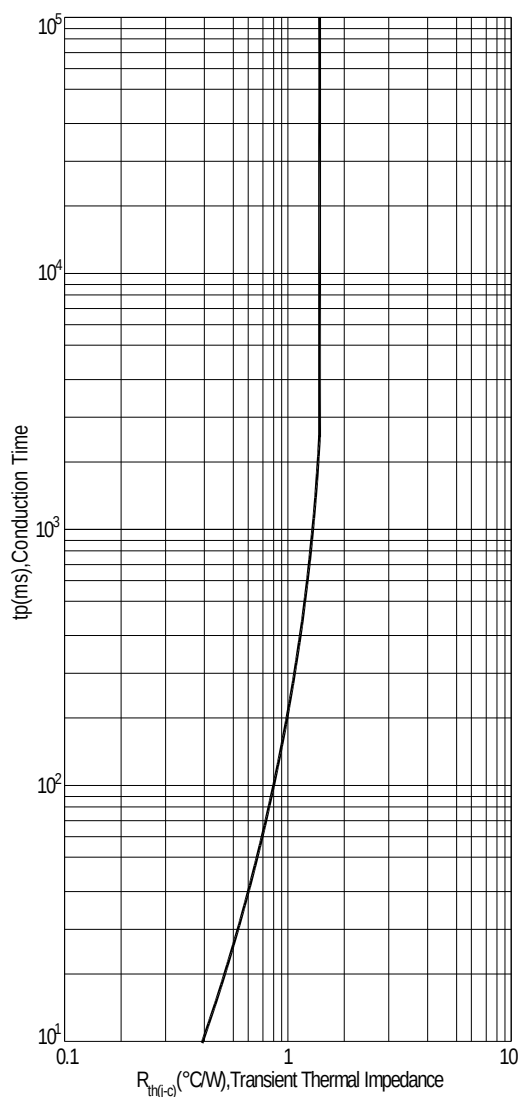


FIG.3: Typical RMS on-state current VS Allowable case Temperature

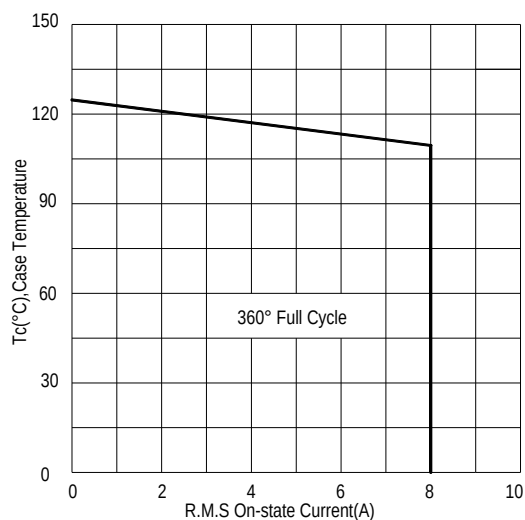


FIG.5: Rated surge on-state current (Non-Repetitive)

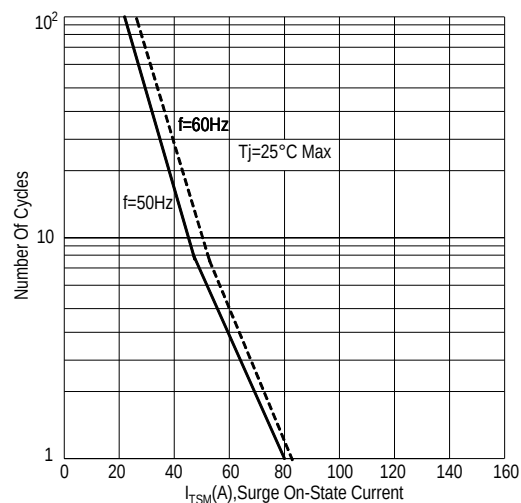


FIG.6: Gate trigger current VS Junction temperature

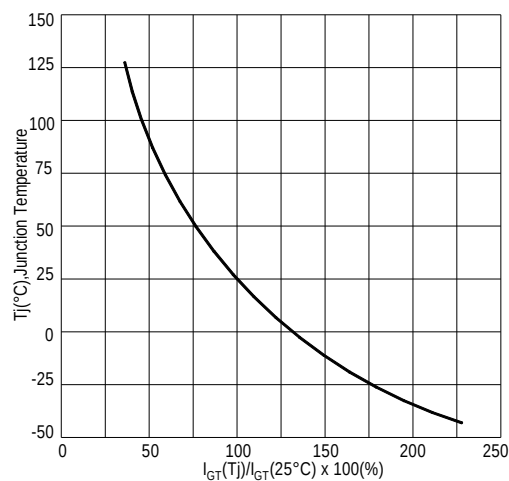


FIG.7:Holding current and Latching current VS Junction temperature

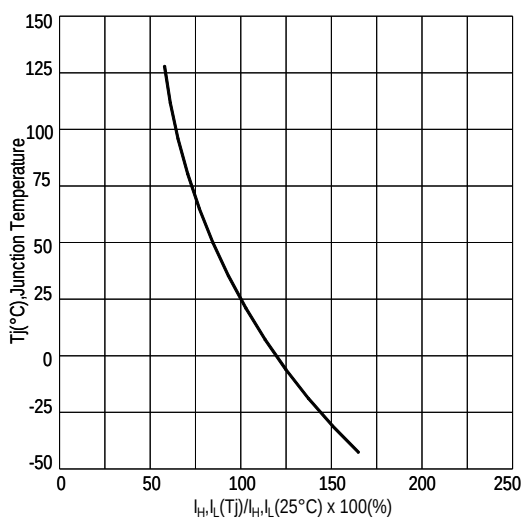


FIG.8: Gate trigger voltage VS Junction temperature

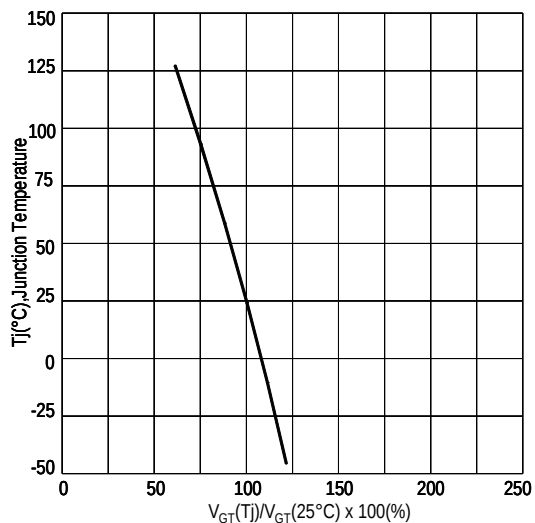
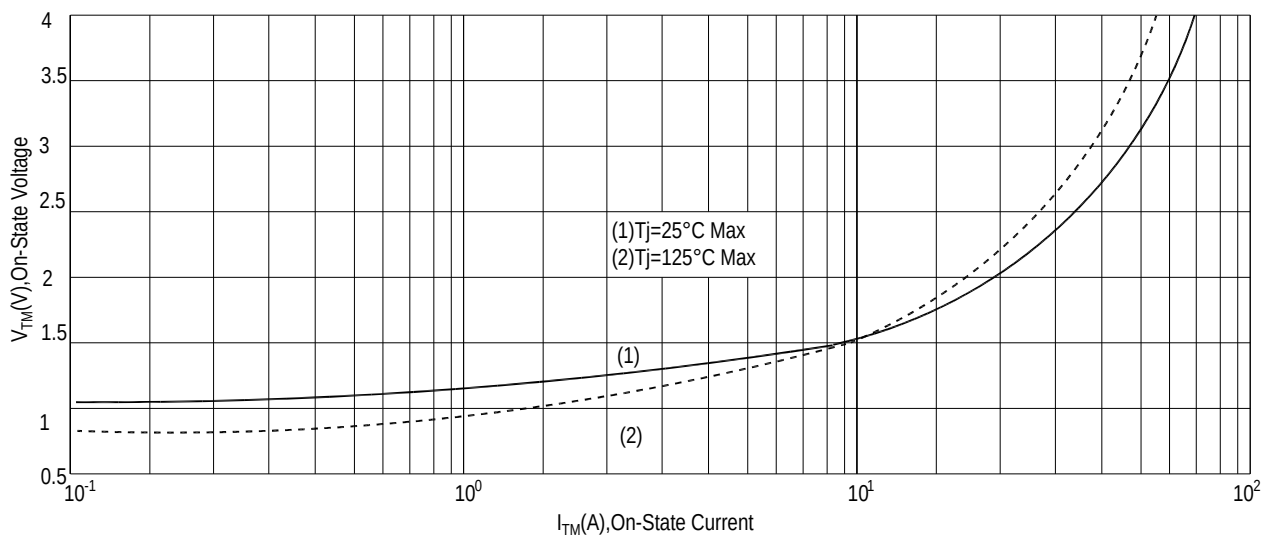
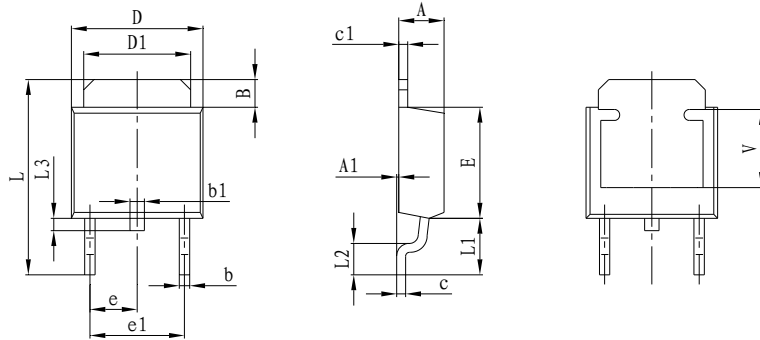


FIG.9: On-state characteristics(Max)



PACKAGE MECHANICAL DATA

TO-252-2 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.450	0.620	0.017	0.024
c1	0.450	0.620	0.017	0.024
D	6.350	6.650	0.250	0.262
D1	5.100	5.400	0.200	0.213
E	5.900	6.200	0.232	0.244
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
L	9.500	10.60	0.374	0.396
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
L3	0.600	0.900	0.024	0.035
V	4.100 REF.		0.161 REF.	

Making Diagram

ADV:Logo
ADS8D80ES:Part number
X:Internal control code
H:Halogen Free

AD S 8 D 80 E T(S)(B)

ADVANCED	Sensitivity and type: T=5mA
Internal control code	S=10mA
Current:8=8A	Blank=35mA
Quadrant:D=4Q	B=50mA
Voltage:60=600V 80=800V	Package explain:D=TO-252-2

Ordering information

Part number	Package	Marking	Packing	Quantity
ADS8D60E#	TO-252-2	ADS8D60E#	Tube	80pcs
			Embossed tape	2500pcs
ADS8D80E#	TO-252-2	ADS8D80E#	Tube	80pcs
			Embossed tape	2500pcs

Note:# = Gate Trigger Current Sensitivity and type

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