

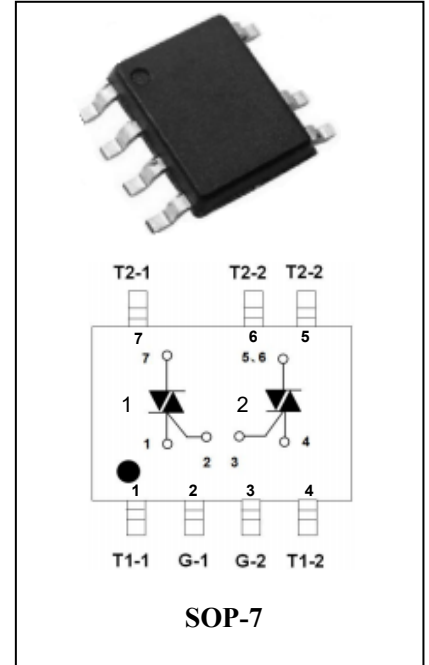
4 Quadrants Triacs

General Description

High current density due to mesa technology . the ADD1D 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: 600V and 800V
- ◆ R.M.S On-State Current ($I_{T(RMS)} = 1A$)
- ◆ 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	$T_j = 25^{\circ}C$	ADD1D60S	600	V
			ADD1D80S	800	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_C = 72^{\circ}C$		1	A
I_{TSM}	Surge On-State Current	tp=20ms(50Hz)/tp=16.7ms(60Hz)		16/17	A
I^2t	I^2t for fusing	tp=10ms		1.28	A ² s
di/dt	Critical rate of rise of on-state current	$F = 120\text{ Hz}$ $T_j = 125^{\circ}C$	Q1-Q2-Q3	50	A/μs
		$I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$	Q4	10	
I_{GM}	Peak Gate Current	tp = 20 μs $T_j = 125^{\circ}C$		1	A
$P_{G(AV)}$	Average Gate Power Dissipation($T_j=80^{\circ}C$)			0.1	W
P_{GM}	Peak Gate Power Dissipation(tp=20us, $T_j=80^{\circ}C$)			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		ADD1D60S/80S	Unit
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		0.5	mA
V _{TM}	Peak On-State Voltage		I _{TM} = 1.4A, t _p = 380 μs	Max.	1.5	V
V _{GD}	Q1-Q2-Q3-Q4	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-Q4	GateTrigger Voltage	V _D = 12V , R _L = 33Ω	Max.	1.3	V
I _{GT}	Q1-Q2-Q3	GateTrigger Current		Max.	5	mA
	Q4				10	
I _H	Q1-Q2-Q3-Q4	Holding Current	I _T = 0.2A	Max.	7	mA
I _L	Q1-Q3-Q4	Latching Current	I _G = 1.2 I _{GT}	Max.	5	mA
	Q2				20	
dV/dt	Critical Rate of Rise of Off-State Voltage		V _D = 2/3V _{DRM} gate open T _j = 125°C	Min.	50	V/μs
(dV/dt) _c	Rate of Change of Commutating Current,		(dI/dt) _c =-0.3A/ms T _j = 125°C	Min.	0.5	V/μs
R _{th(j-c)}	Junction to case (AC)			Max.	50	°C/W
R _{th(j-a)}	Junction to ambient(Copper surface under tab:S=0.5cm²)			Max.	75	°C/W

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

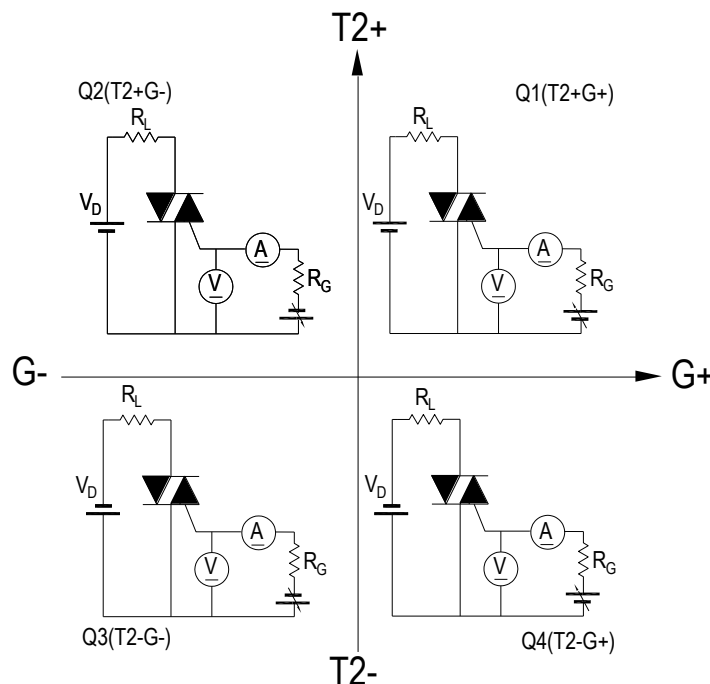


FIG.2: Maximum on-state power dissipation

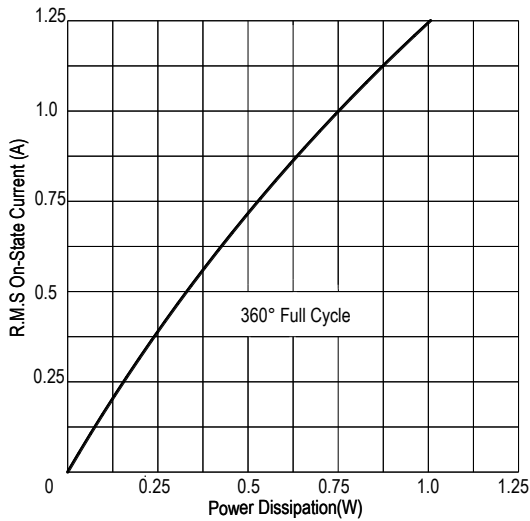


FIG.3: Typical RMS on-state current VS Allowable case Temperature

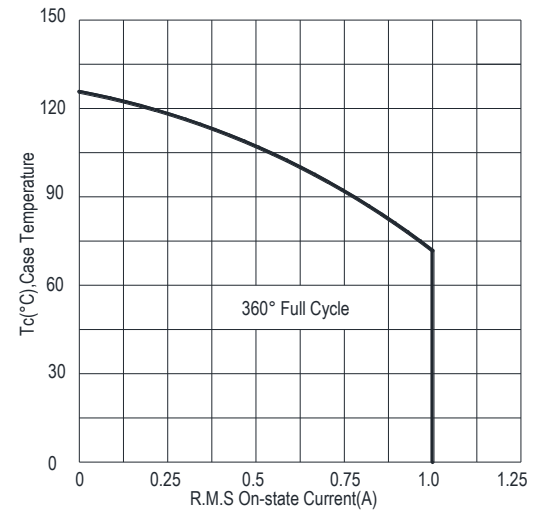


FIG.4: Gate trigger current VS Junction temperature

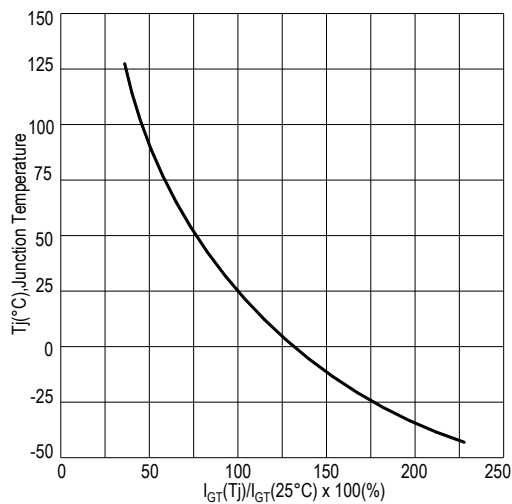


FIG.5: Rated surge on-state current (Non-Repetitive)

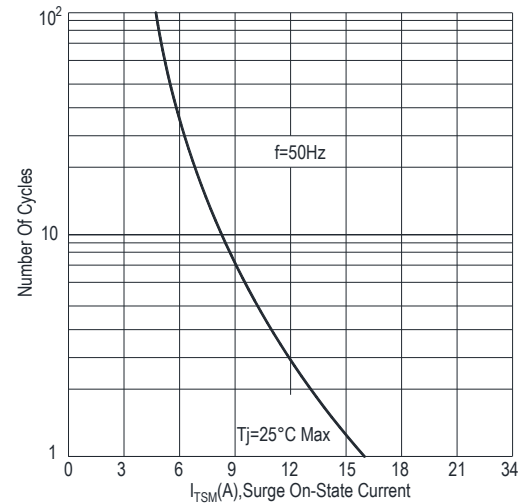


FIG.6: On-state characteristics(Max)

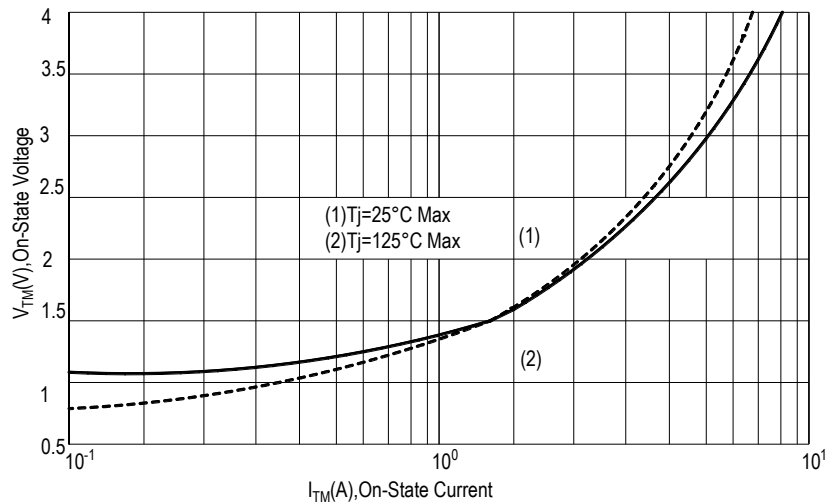


FIG.7:Holding current and Latching current VS Junction temperature

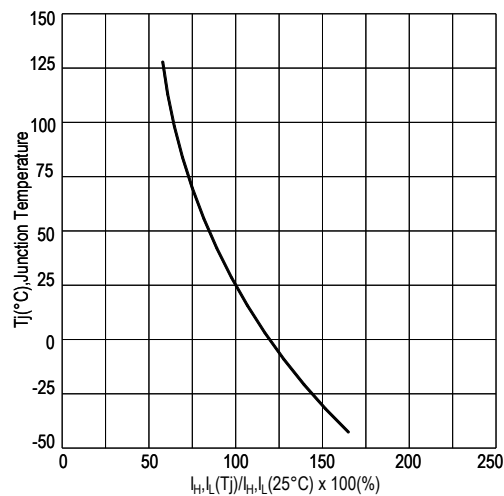
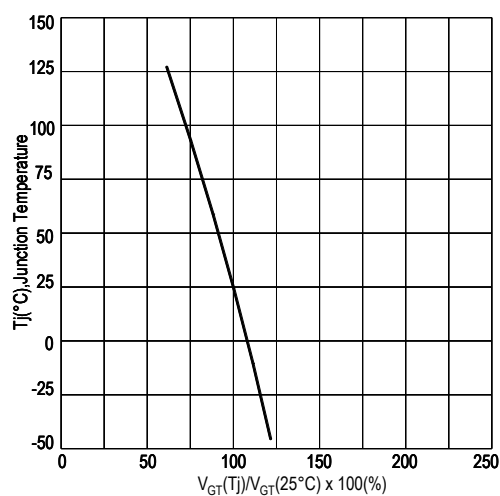
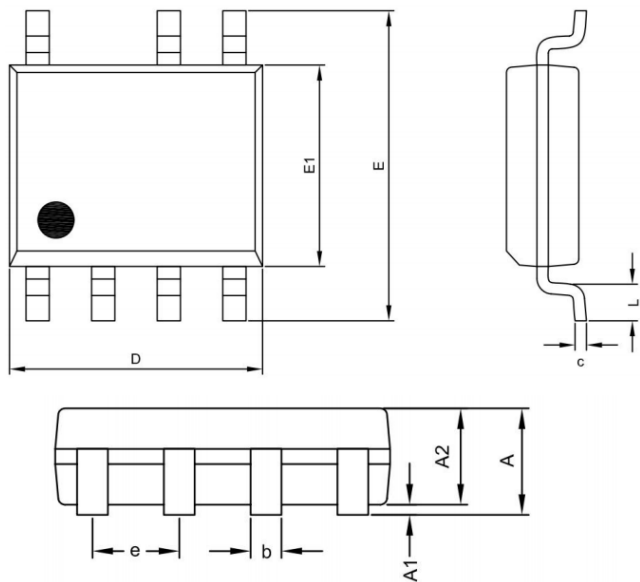


FIG.8: Gate trigger voltage VS Junction temperature



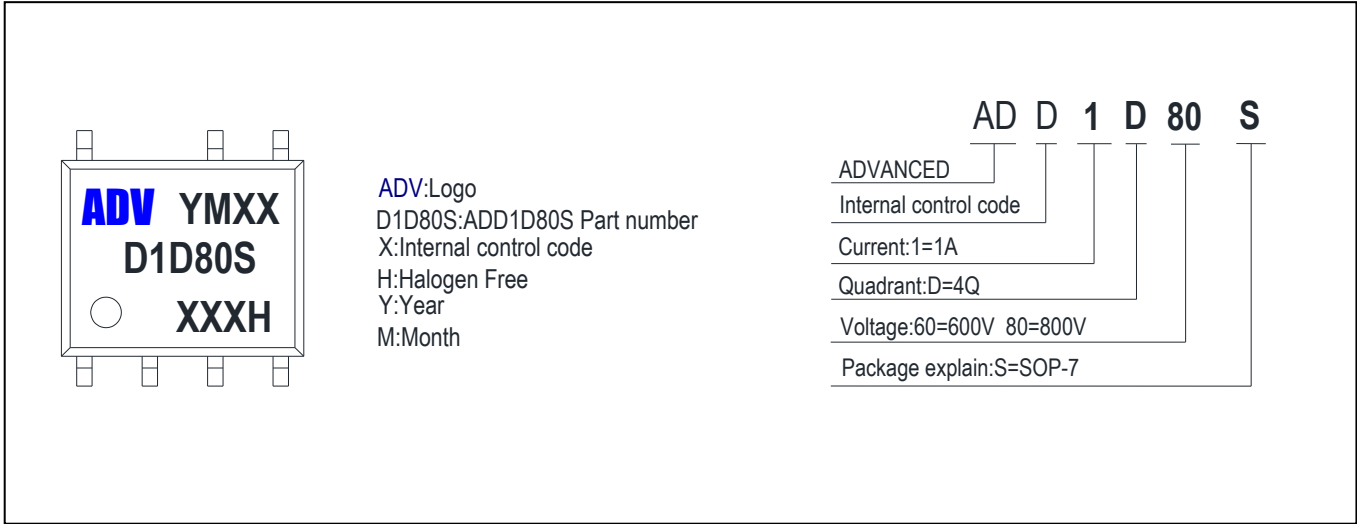
PACKAGE MECHANICAL DATA

SOP-7 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.000	0.250	0.000	0.010
A2	1.150	1.500	0.045	0.059
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
e	1.270BSC		0.050BSC	
b	0.330	0.510	0.013	0.020
L	0.400	1.270	0.016	0.050

Making Diagram



Ordering information

Part number	Package	Marking	Packing	Quantity
ADD1D60S	SOP-7	D1D60S	Embossed tape	4000pcs
ADD1D80S	SOP-7	D1D80S	Embossed tape	4000pcs

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