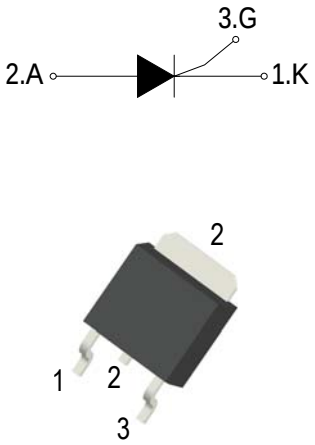
SCRs

General Description

The 16A SCR series of silicon controlled rectifiers,with high ability to withstand the shock loading of large current,provide high dv/dt rate with strong resistance to electromagnetic interference.They are especially recommended for use on solid state relay,motorcycle, power charger,T-tools etc.



TO-252-2

Features

- Repetitive Peak Off-State Voltage : 600V and 800V
- R.M.S On-State Current ($I_{T(RMS)}$= 16 A)
- These are Pb-Free Devices

Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	Tj=25°C	ADS16A60E	600	V
V_{RRM}	Repetitive peak reverse voltage		ADS16A80E	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , Tc = 105°C		10	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , Tc = 105°C		16	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, tp=10ms(50Hz)Tj =25°C		190	A
I^2t	I^2t for Fusing	Tj =25°C,tp =10ms		180	A^2S
P_{GM}	Forward Peak Gate Power Dissipation	Tj =125°C, Pulse Width ≤ 20μs		5	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation	Tj =25°C, tp =10ms		1	W
I_{GM}	Peak Gate Current	Tj =125°C, Pulse Width ≤ 20μs		4	A
Tj	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		ADS16A60E/80E		Unit
				S	Blank	
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current	$V_{DRM} = V_{RRM}$ Tj = 25°C	Max.	5		uA
		$V_{DRM} = V_{RRM}$ Tj = 125°C		2		mA
V_{TM}	Peak On-State Voltage	I_{TM} = 32A, t_p = 380 μs	Max.	1.6		V
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{DRM}$ R_L = 3.3 kΩ Tj = 125°C	Min.	0.2		V
V_{GT}	Gate Trigger Voltage	V_D = 12V ， R_L = 33Ω	Max.	1.3		V
I_{GT}	Gate Trigger Current		Max.	15	30	mA
I_H	Holding Current	I_T = 0.5A	Max.	30	40	mA
I_L	Latching Current	I_G = 1.2 I_{GT}	Max.	50	60	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	V_D = 2/3V_{DRM} gate open Tj = 125°C	Min.	500	600	V/μs
$R_{th(j-c)}$	Junction to case (AC)		Max.	1.4		°C/W
$R_{th(j-a)}$	Junction to ambient(Copper surface under tab:S=0.5cm^2)		Max.	70		°C/W

FIG.1: Maximum average power dissipation (Single phase half wave)

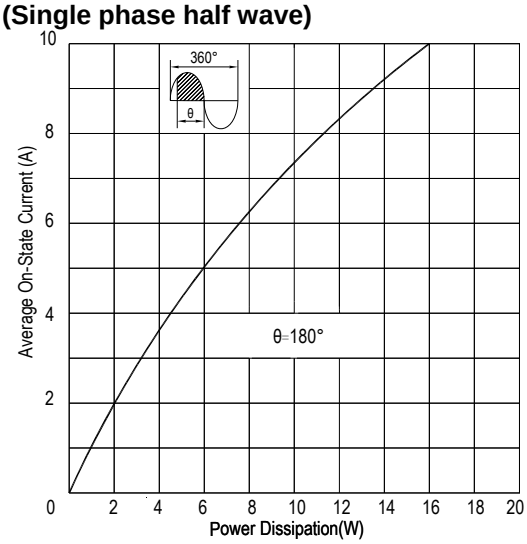


FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)

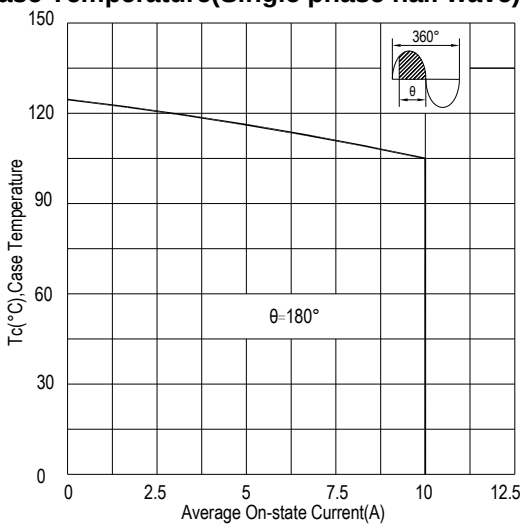


FIG.3: Gate trigger current VS Junction temperature

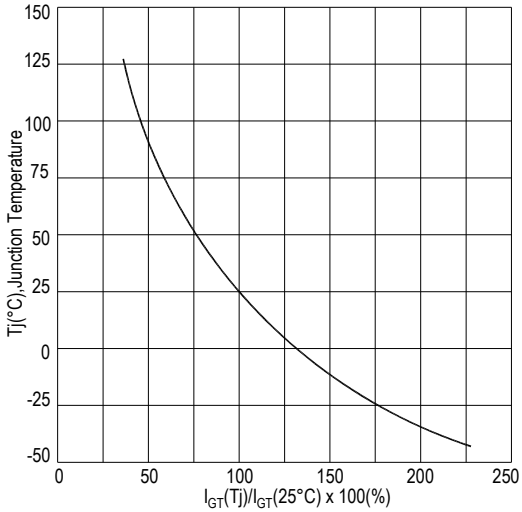


FIG.4: Rated surge on-state current (Non-Repetitive)

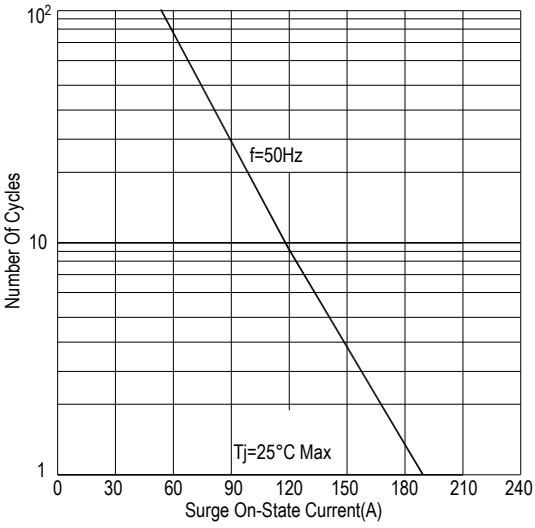


FIG.5: On-state characteristics(Max)

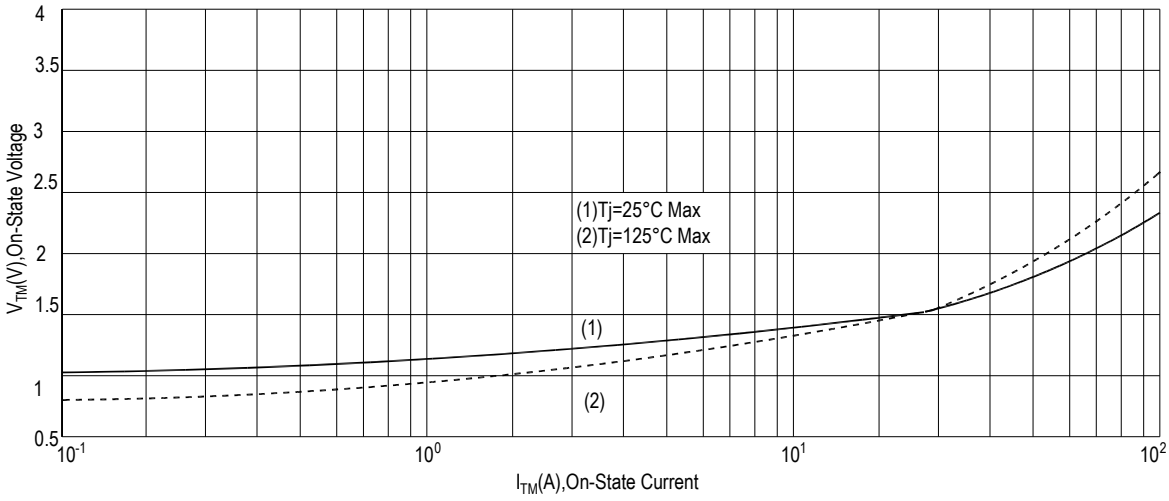


FIG.6:Holding current and Latching current VS Junction temperature

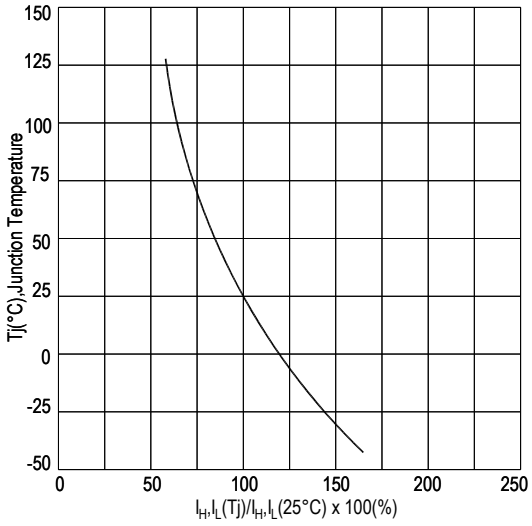
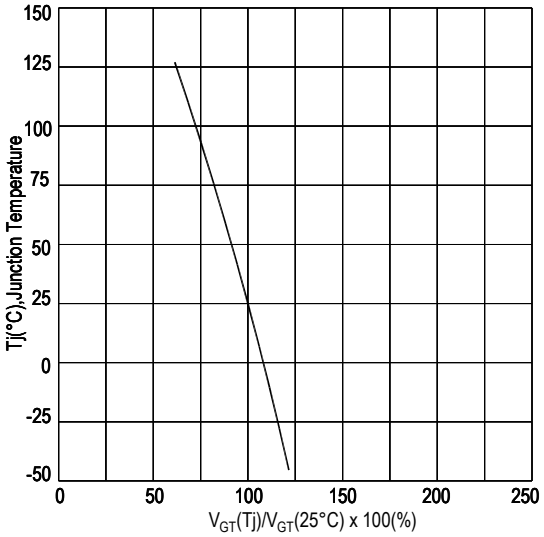
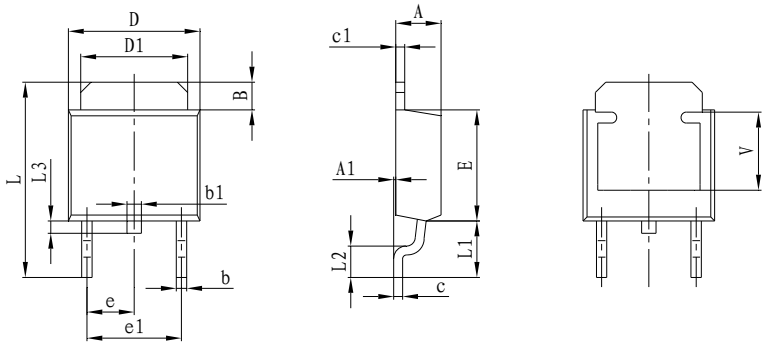


FIG.7: Gate trigger voltage VS Junction temperature



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
ADS16A80ES:Part number
X:Internal control code
H:Halogen Free

AD S 16 A 80 E T(S)(W)

- AD: ADVANCED
- S: Internal control code
- 16: Current:16=16A
- A: SCR Series
- 80: Voltage:60=600V 80=800V
- E: Package explain:E=TO252-2
- T(S)(W): Sensitivity and type: T=0.2mA, S=15mA, Blank=30mA, W=80mA

Ordering information

Part number	Package	Marking	Packing	Quantity
ADS16A60E#	TO-252-2	ADS16A60E#	Tube	80pcs
			Embossed tape	2500pcs
ADS16A80E#	TO-252-2	ADS16A80E#	Tube	80pcs
			Embossed tape	2500pcs

Note:# = Gate Trigger Current Sensitivity and type

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