

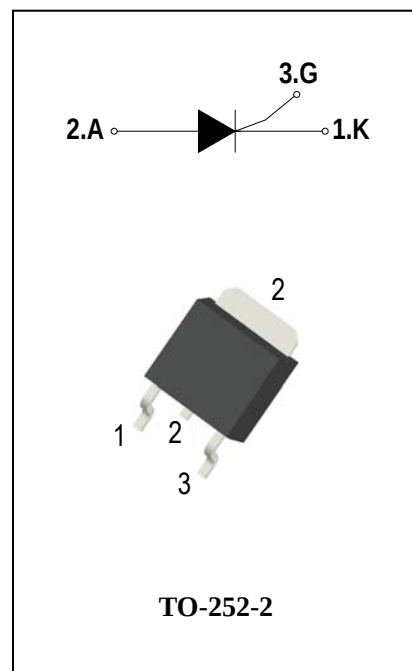
SCRs

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.

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	$T_j = 25^\circ\text{C}$	ADS16A60E	600	V
V_{RRM}	Repetitive peak reverse voltage		ADS16A80E	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , $T_c = 105^\circ\text{C}$		10	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , $T_c = 105^\circ\text{C}$		16	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, $t_p = 10\text{ms}(50\text{Hz}) T_j = 25^\circ\text{C}$		190	A
I^2t	I^2t for Fusing	$T_j = 25^\circ\text{C}, t_p = 10\text{ms}$		180	A^2S
P_{GM}	Forward Peak Gate Power Dissipation	$T_j = 125^\circ\text{C}$, Pulse Width $\leq 20\mu\text{s}$		5	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation	$T_j = 25^\circ\text{C}$, $t_p = 10\text{ms}$		1	W
I_{GM}	Peak Gate Current	$T_j = 125^\circ\text{C}$, Pulse Width $\leq 20\mu\text{s}$		4	A
T_j	Operating Junction Temperature			- 40 ~ 125	$^\circ\text{C}$
T_{STG}	Storage Temperature			- 40 ~ 150	$^\circ\text{C}$



Electrical Characteristics ($T_j = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Items	Conditions		ADS16A60E/80E		Unit
				S	Blank	
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current	$V_{\text{DRM}} = V_{\text{RRM}}$ $T_j = 25^\circ\text{C}$	Max.	5		μA
		$V_{\text{DRM}} = V_{\text{RRM}}$ $T_j = 125^\circ\text{C}$		2		mA
V_{TM}	Peak On-State Voltage	$I_{\text{TM}} = 32\text{A}$, $t_p = 380\ \mu\text{s}$	Max.	1.6		V
V_{GD}	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}	Gate Trigger Voltage	$V_D = 12\text{V}$, $R_L = 33\Omega$	Max.	1.3		V
I_{GT}	Gate Trigger Current		Max.	15	30	mA
I_{H}	Holding Current	$I_T = 0.5\text{A}$	Max.	30	40	mA
I_{L}	Latching Current	$I_G = 1.2\ I_{\text{GT}}$	Max.	50	60	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	$V_D = 2/3V_{\text{DRM}}$ gate open $T_j = 125^\circ\text{C}$	Min.	500	600	V/ μs
$R_{\text{th(j-c)}}$	Junction to case (AC)		Max.	1.4		$^\circ\text{C/W}$
$R_{\text{th(j-a)}}$	Junction to ambient(Copper surface under tab: $S=0.5\text{cm}^2$)		Max.	70		$^\circ\text{C/W}$

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

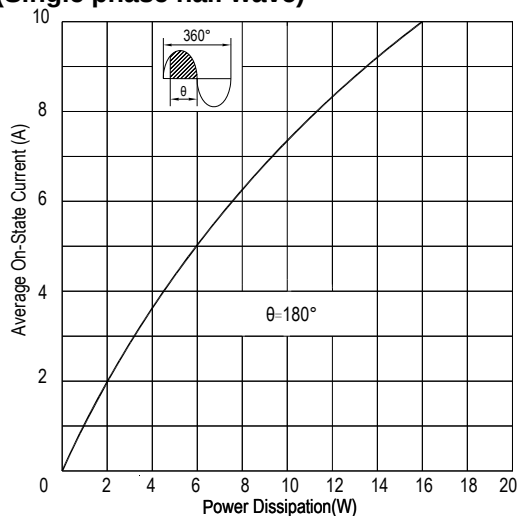


FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)

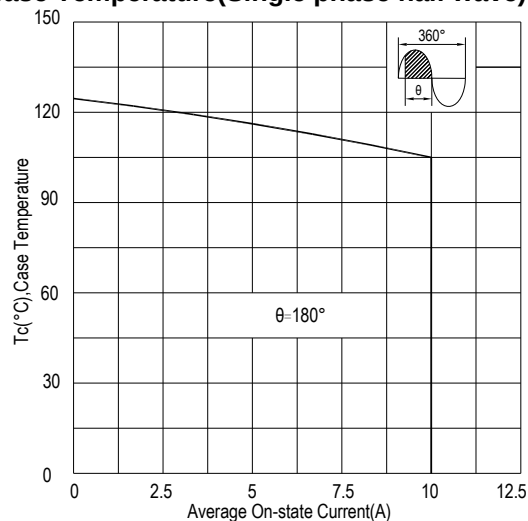


FIG.3: Gate trigger current VS Junction temperature

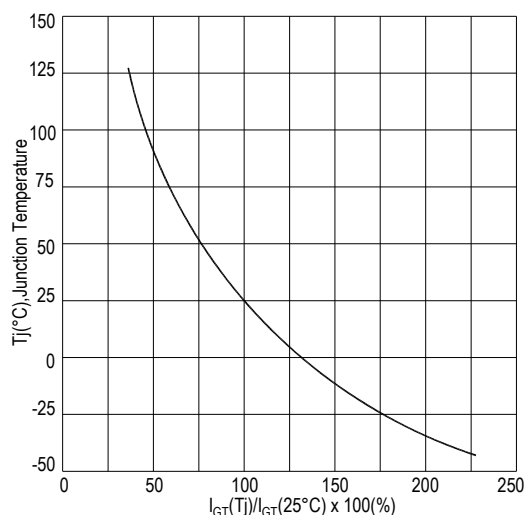


FIG.4: Rated surge on-state current (Non-Repetitive)

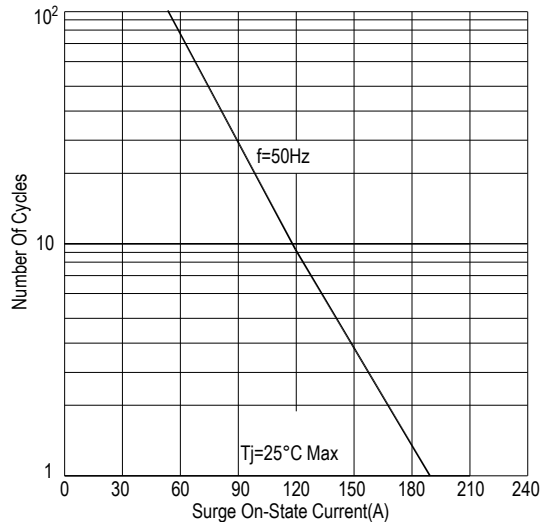


FIG.5: On-state characteristics(Max)

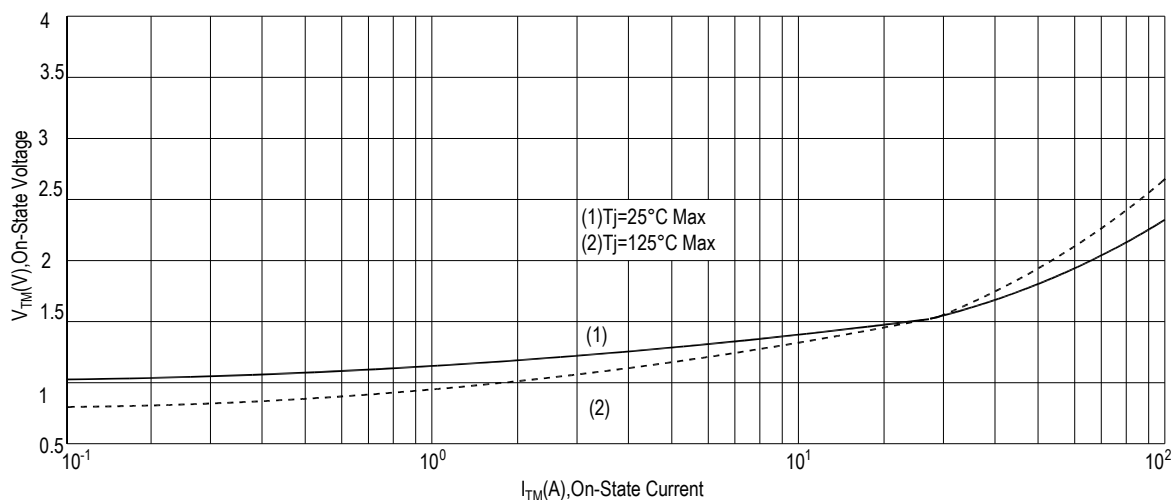


FIG.6:Holding current and Latching current VS Junction temperature

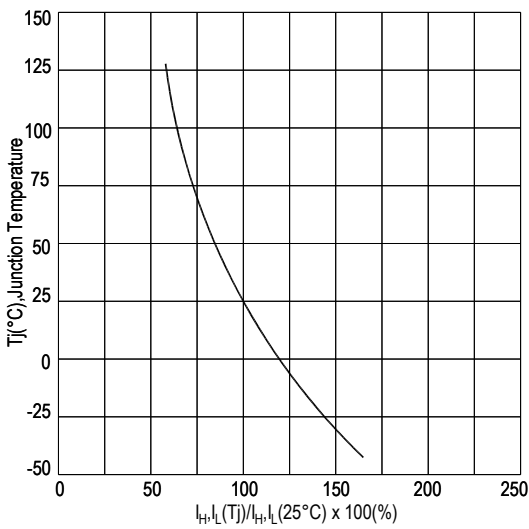
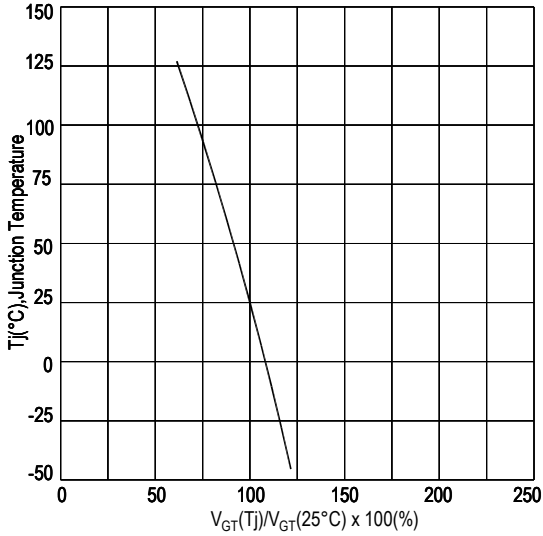
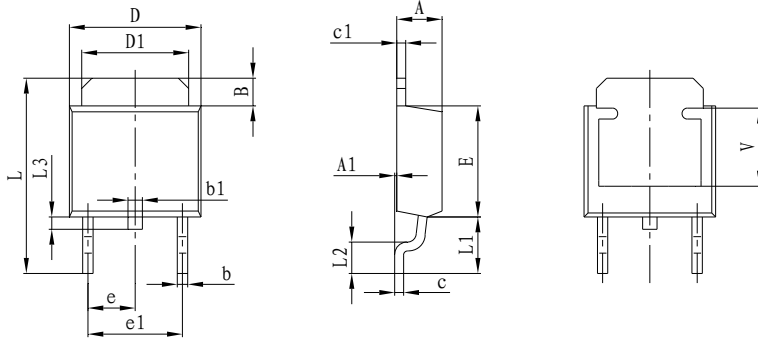


FIG.7: Gate trigger voltage VS Junction temperature



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)

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