

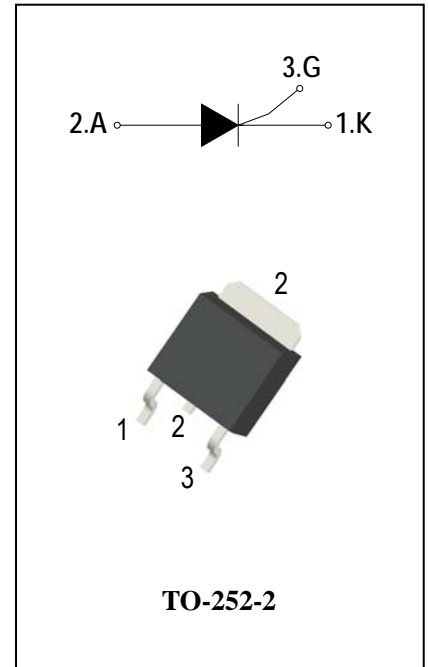
## SCRs

### General Description

Available either in sensitive or standard gate triggering levels, the 8A SCR series is suitable to fit all modes of control found in applications such as overvoltage crowbar protection, motor control circuits in power tools and kitchen aids, in-rush current limiting circuits, capacitive discharge ignition, voltage regulation circuits...

### Features

- ◆ Repetitive Peak Off-State Voltage : 600V and 800V
- ◆ R.M.S On-State Current (  $I_{T(RMS)}$  ) = 8A )
- ◆ These are Pb-Free Devices



### Absolute Maximum Ratings

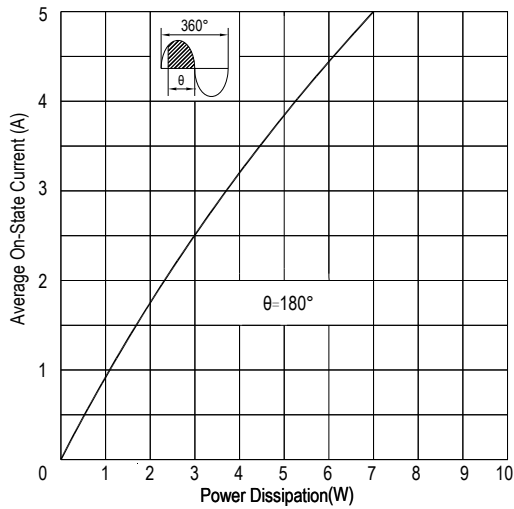
Symbol	Items	Conditions		Ratings	Unit
$V_{DRM}$	Repetitive Peak Off-State Voltage	$T_j = 25^\circ\text{C}$	ADS8A60E	600	V
$V_{RRM}$	Repetitive peak reverse voltage		ADS8A80E	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , $T_c = 100^\circ\text{C}$		5	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , $T_c = 100^\circ\text{C}$		8	A
$I_{TSM}$	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, $t_p = 10\text{ms}(50\text{Hz}) T_j = 25^\circ\text{C}$		70	A
$I^2t$	$I^2t$ for Fusing	$T_j = 25^\circ\text{C}, t_p = 10\text{ms}$		24.5	$\text{A}^2\text{S}$
$di/dt$	Critical rate of rise of on-state current	$T_j = 125^\circ\text{C}, t_r \leq 100\text{ns}$		50	$\text{A}/\mu\text{s}$
$P_{GM}$	Forward Peak Gate Power Dissipation	$T_j = 125^\circ\text{C}, \text{Pulse Width} \leq 20\mu\text{s}$		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	$T_j = 125^\circ\text{C}, \text{Pulse Width} \leq 20\mu\text{s}$		4	A
$T_j$	Operating Junction Temperature			- 40 ~ 125	$^\circ\text{C}$
$T_{STG}$	Storage Temperature			- 40 ~ 150	$^\circ\text{C}$



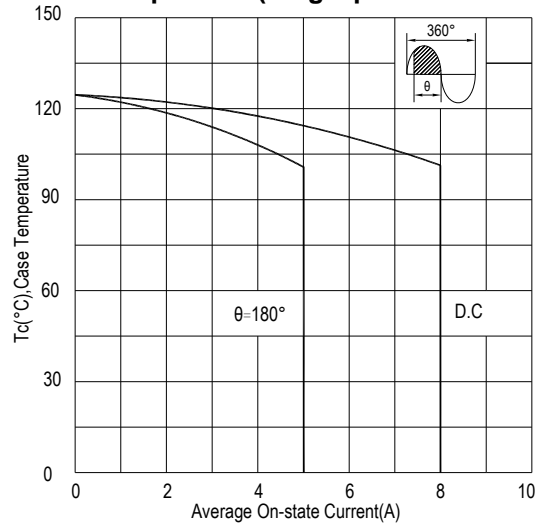
## Electrical Characteristics ( $T_j = 25^\circ\text{C}$ unless otherwise specified )

Symbol	Items	Conditions		ADS8A60E/80E		Unit
				T	S	
$I_{\text{DRM}}$	Peak Forward Reverse	$V_{\text{DRM}} = V_{\text{RRM}}, R_{\text{GK}} = 1\text{K}\Omega$ $T_j = 25^\circ\text{C}$	Max.	5		$\mu\text{A}$
$I_{\text{RRM}}$	Blocking Current	$V_{\text{DRM}} = V_{\text{RRM}}, R_{\text{GK}} = 1\text{K}\Omega$ $T_j = 125^\circ\text{C}$		2		$\text{mA}$
$V_{\text{TM}}$	Peak On-State Voltage	$I_{\text{TM}} = 16\text{A}, t_p = 380 \mu\text{s}$	Max.	1.6		$\text{V}$
$V_{\text{GD}}$	Non-Trigger Gate Voltage	$V_{\text{D}} = V_{\text{DRM}} \quad R_{\text{L}} = 3.3 \text{ k}\Omega$ $R_{\text{GK}} = 1\text{K}\Omega \quad T_j = 125^\circ\text{C}$	Min.	0.2		$\text{V}$
$V_{\text{GT}}$	Gate Trigger Voltage	$V_{\text{D}} = 12\text{V}, R_{\text{L}} = 33\Omega$	Max.	1.3		$\text{V}$
$I_{\text{GT}}$	Gate Trigger Current		Max.	0.2	15	$\text{mA}$
$I_{\text{H}}$	Holding Current	$I_{\text{T}} = 0.05\text{A} \quad R_{\text{GK}} = 1\text{K}\Omega$	Max.	5	40	$\text{mA}$
$I_{\text{L}}$	Latching Current	$I_{\text{G}} = 1.2 I_{\text{GT}} \quad R_{\text{GK}} = 1\text{K}\Omega$	Max.	6	50	$\text{mA}$
$dV/dt$	Critical Rate of Rise of Off-State Voltage	$V_{\text{D}} = 2/3 V_{\text{DRM}} \quad \text{gate open}$ $R_{\text{GK}} = 1\text{K}\Omega \quad T_j = 125^\circ\text{C}$	Min.	5	150	$\text{V}/\mu\text{s}$
$R_{\text{th(j-c)}}$	Junction to case		Max.	20		$^\circ\text{C}/\text{W}$
$R_{\text{th(j-a)}}$	Junction to ambient(Copper surface under tab: $S=0.5\text{cm}^2$ )		Max.	70		$^\circ\text{C}/\text{W}$

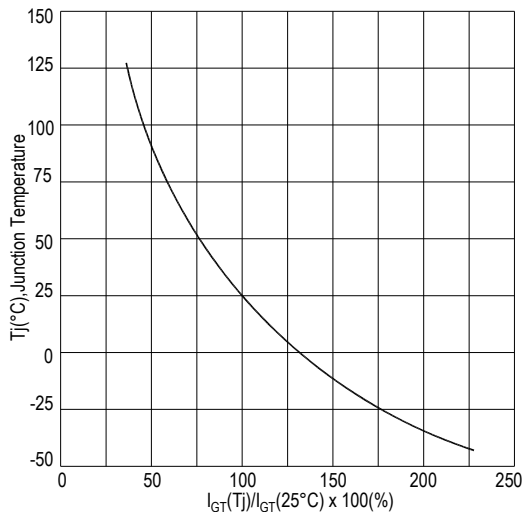
**FIG.1: Maximum average power dissipation (Single phase half wave)**



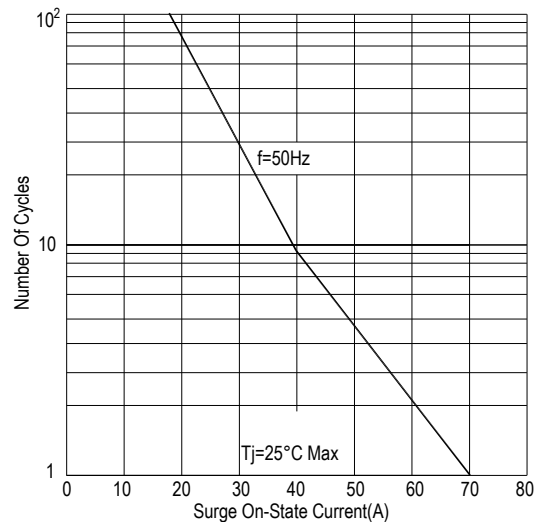
**FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)**



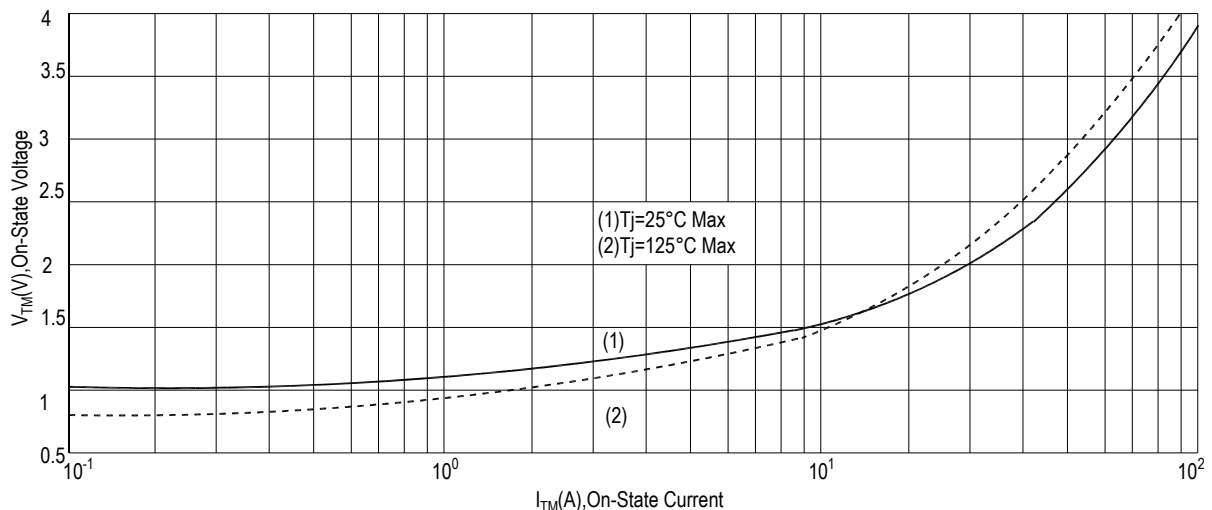
**FIG.3: Gate trigger current VS Junction temperature**



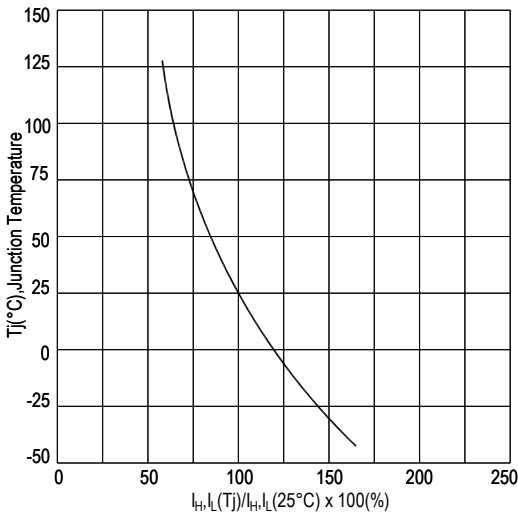
**FIG.4: Rated surge on-state current (Non-Repetitive)**



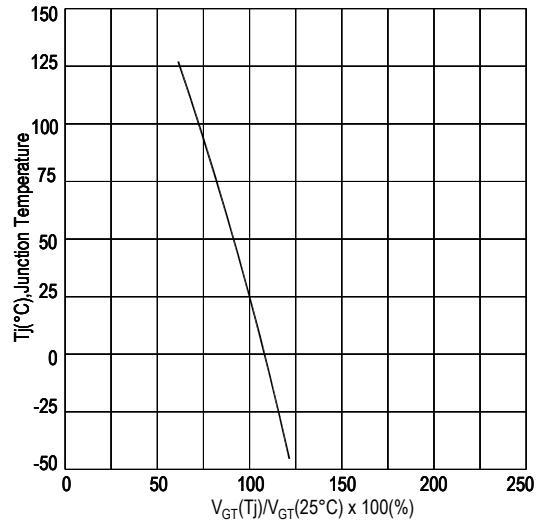
**FIG.5: On-state characteristics(Max)**



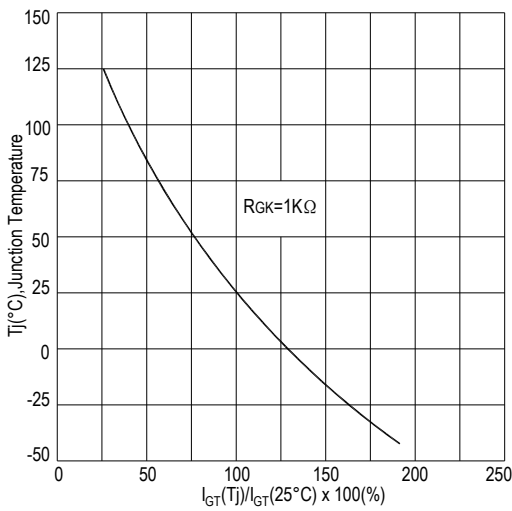
**FIG.6: Holding current and Latching current VS Junction temperature**



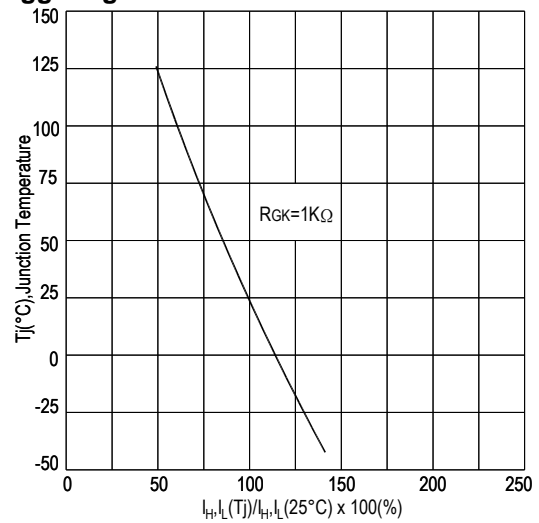
**FIG.7: Gate trigger voltage VS Junction temperature**



**FIG.8: Gate trigger current VS Junction temperature for type T gate triggering**

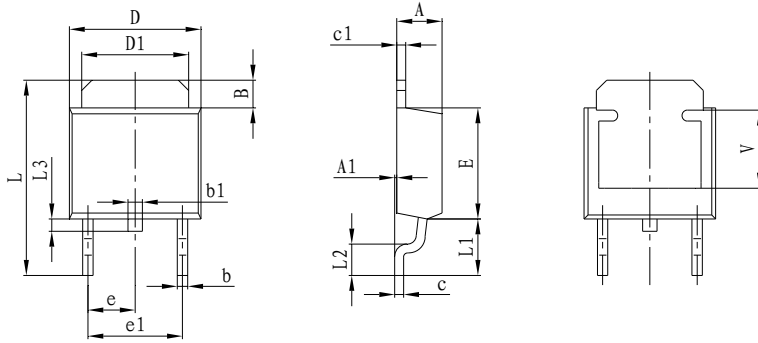


**FIG.8: Holding current and Latching current VS Junction temperature for type T gate triggering**



## 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  
**ADS8A80ES**:Part number  
**X**:Internal control code  
**H**:Halogen Free

A D S 8 A 8 0 E T(S)(W)

ADVANCED	Sensitivity and type: T=0.2mA S=15mA Blank=30mA W=80mA
Internal control code	Package explain:E=TO-252-2
Current:8=8A	
SCR Series	
Voltage:60=600V 80=800V	

### Ordering information

Part number	Package	Marking	Packing	Quantity
ADS8A60E#	TO-252-2	ADS8A60E#	Tube	80pcs
			Embossed tape	2500pcs
ADS8A80E#	TO-252-2	ADS8A80E#	Tube	80pcs
			Embossed tape	2500pcs

Note:# = Gate Trigger Current Sensitivity and type

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