

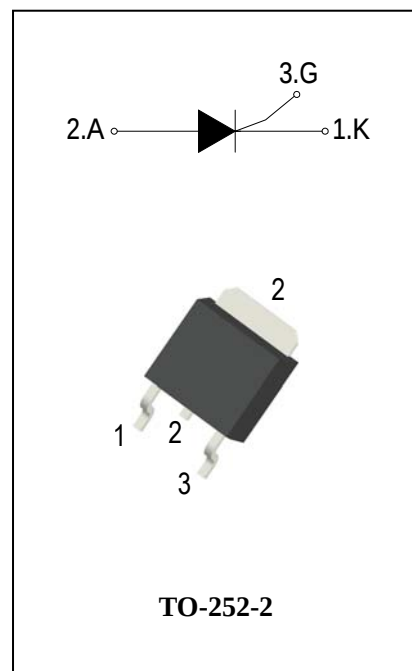
SCRs

General Description

Available either in sensitive or standard gate triggering levels, the 4A 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
- ◆ R.M.S On-State Current ($I_{T(RMS)} = 4A$)
- ◆ These are Pb-Free Devices



Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM} V_{RRM}	Repetitive Peak Off-State Voltage Repetitive peak reverse voltage	$T_j = 25^\circ C$	ADS4A60ET	600	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , $T_c = 90^\circ C$		2.5	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , $T_c = 90^\circ C$		4	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, $t_p = 10ms(50Hz) T_j = 25^\circ C$		30	A
I^2t	I^2t for Fusing	$T_j = 25^\circ C, t_p = 10ms$		4.5	A^2S
di/dt	Critical rate of rise of on-state current	$T_j = 125^\circ C, t_r \leq 100ns$		50	$A/\mu s$
P_{GM}	Forward Peak Gate Power Dissipation	$T_j = 125^\circ C, \text{Pulse Width} \leq 20\mu s$		2	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation	$T_j = 25^\circ C, t_p = 10ms$		0.2	W
I_{GM}	Peak Gate Current	$T_j = 125^\circ C, \text{Pulse Width} \leq 20\mu s$		1.2	A
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		ADS4A60ET	Unit
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current	$V_{\text{DRM}} = V_{\text{RRM}}, R_{\text{GK}} = 1\text{K}\Omega$ $T_j = 25^\circ\text{C}$	Max.	5	μA
		$V_{\text{DRM}} = V_{\text{RRM}}, R_{\text{GK}} = 1\text{K}\Omega$ $T_j = 125^\circ\text{C}$		1	mA
V_{TM}	Peak On-State Voltage	$I_{\text{TM}} = 8\text{A}, t_p = 380\ \mu\text{s}$	Max.	1.5	V
V_{GD}	Non-Trigger Gate Voltage	$V_{\text{D}} = V_{\text{DRM}}, R_{\text{L}} = 3.3\ \text{k}\Omega$ $R_{\text{GK}} = 1\text{K}\Omega, T_j = 125^\circ\text{C}$	Min.	0.2	V
V_{GT}	Gate Trigger Voltage	$V_{\text{D}} = 12\text{V}, R_{\text{L}} = 33\Omega$	Max.	0.8	V
I_{GT}	Gate Trigger Current		Max.	0.2	mA
I_{H}	Holding Current	$I_{\text{T}} = 0.05\text{A}, R_{\text{GK}} = 1\text{K}\Omega$	Max.	5	mA
I_{L}	Latching Current	$I_{\text{G}} = 1.2 I_{\text{GT}}, R_{\text{GK}} = 1\text{K}\Omega$	Max.	6	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	$V_{\text{D}} = 2/3 V_{\text{DRM}}, \text{gate open}$ $R_{\text{GK}} = 1\text{K}\Omega, T_j = 125^\circ\text{C}$	Min.	10	V/ μs
$R_{\text{th(j-c)}}$	Junction to case		Max.	6.5	$^\circ\text{C/W}$
$R_{\text{th(j-a)}}$	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)

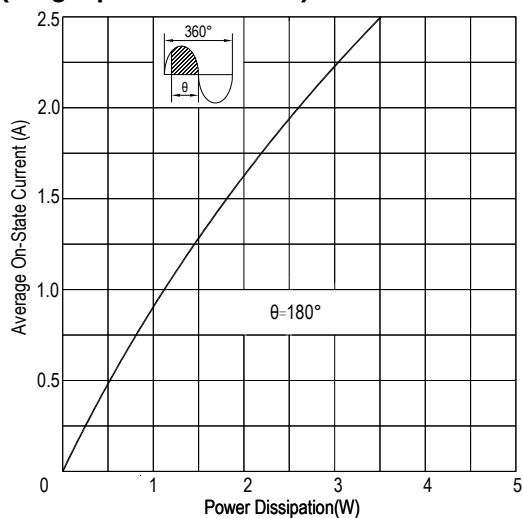


FIG.2: Average on-state current VS Allowable case Temperature (Single phase half wave)

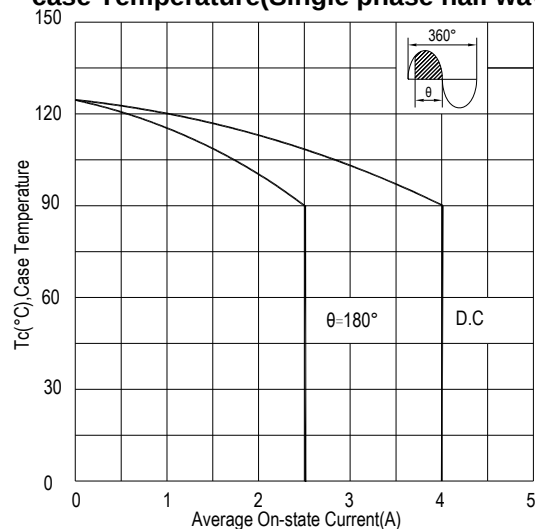


FIG.3: Gate trigger current VS Junction temperature

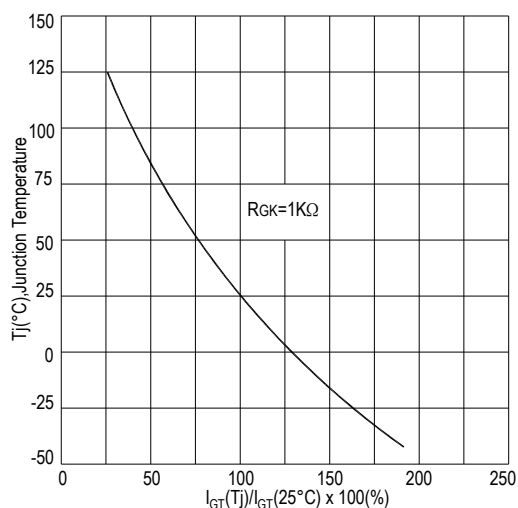


FIG.4: Rated surge on-state current (Non-Repetitive)

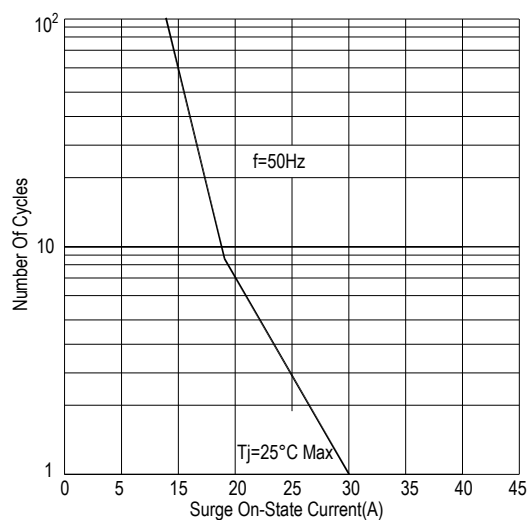


FIG.5: On-state characteristics(Max)

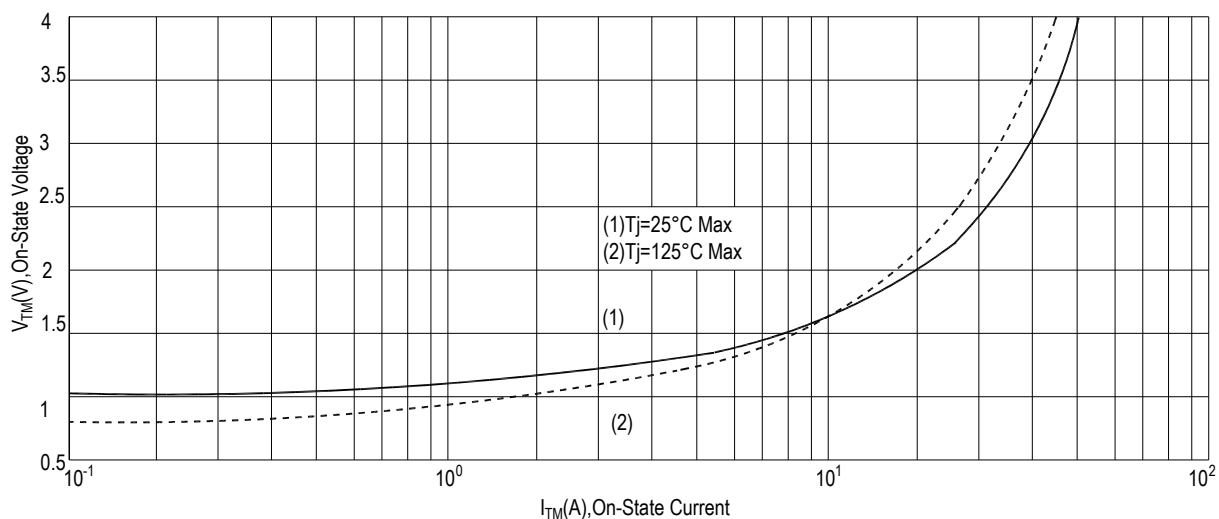


FIG.6:Holding current and Latching current VS Junction temperature

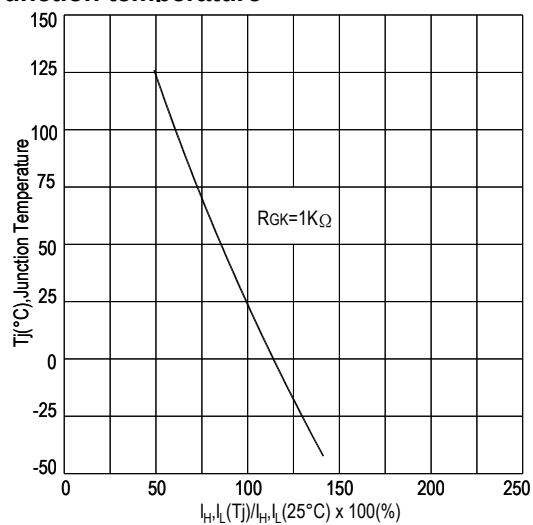
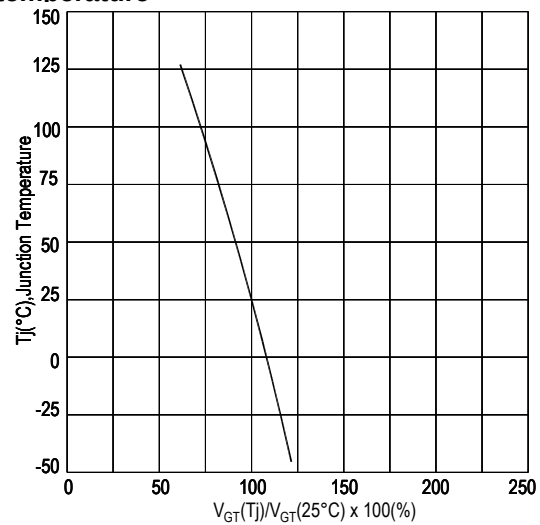
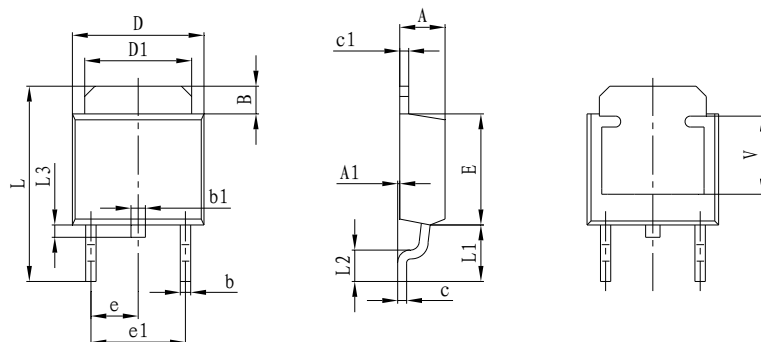


FIG.7: Gate trigger voltage VS Junction temperature



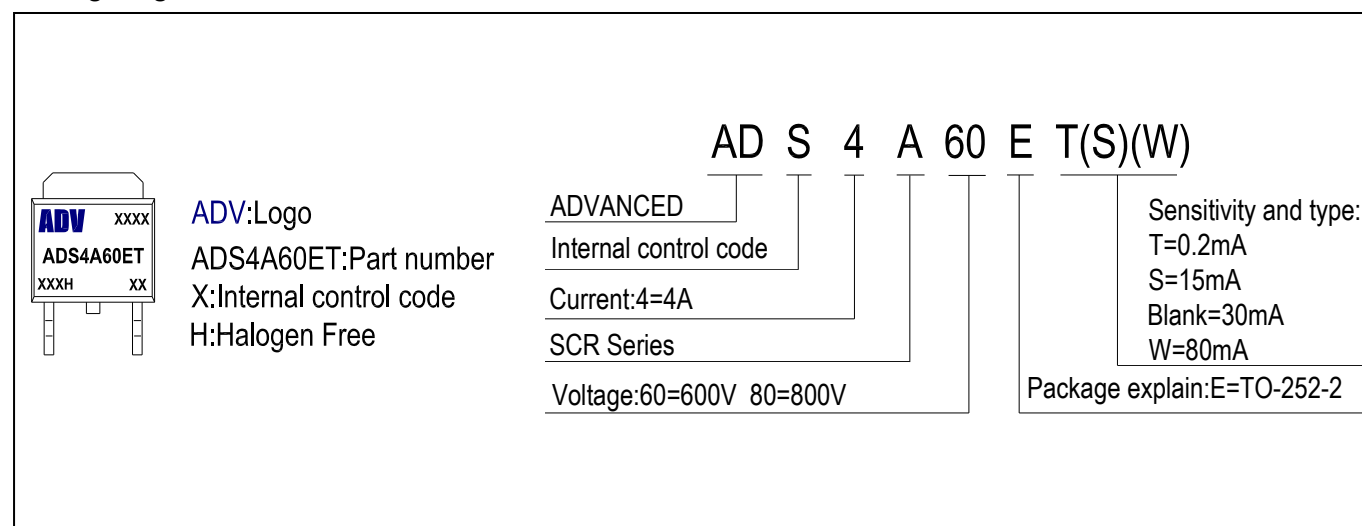
PACKAGE MECHANICAL DATA

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



Ordering information

Part number	Package	Marking	Packing	Quantity
ADS4A60E#	TO-252-2	ADS4A60E#	Tube	80pcs
			Embossed tape	2500pcs

Note:# = Gate Trigger Current Sensitivity and type

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