

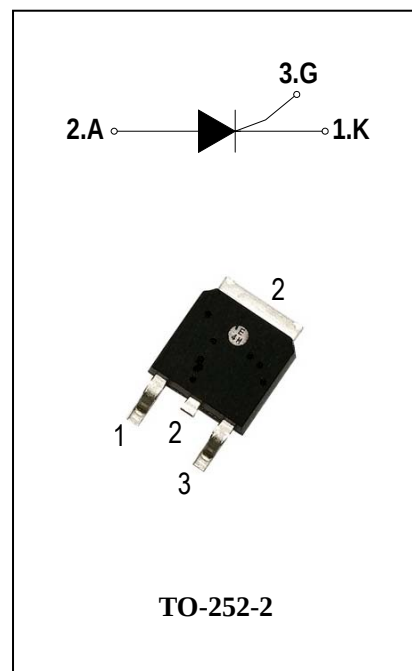
SCRs

General Description

Available either in sensitive or standard gate triggering levels, the 12A 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 ($I_{T(RMS)}$) = 12 A)
- ◆ These are Pb-Free Devices



Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	$T_j = 25^\circ\text{C}$	ADS12A60E	600	V
V_{RRM}	Repetitive peak reverse voltage		ADS12A80E	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , $T_c = 105^\circ\text{C}$		8	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , $T_c = 105^\circ\text{C}$		12	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, $t_p = 10\text{ms}(50\text{Hz}) T_j = 25^\circ\text{C}$		140	A
I^2t	I^2t for Fusing	$T_j = 25^\circ\text{C}, t_p = 10\text{ms}$		98	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		ADS12A60E/80E			Unit
				T	S	Blank	
I_{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			μA
I_{RRM}	Blocking Current	$V_{\text{DRM}} = V_{\text{RRM}}, R_{\text{GK}} = 1\text{K}\Omega$ $T_j = 125^\circ\text{C}$		2			mA
V_{TM}	Peak On-State Voltage	$I_{\text{TM}} = 24\text{A}, t_p = 380\ \mu\text{s}$	Max.	1.55			V
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{\text{DRM}}, R_L = 3.3\ \text{k}\Omega$ $R_{\text{GK}} = 1\text{K}\Omega, T_j = 125^\circ\text{C}$	Min.	0.2			V
V_{GT}	Gate Trigger Voltage	$V_D = 12\text{V}, R_L = 33\Omega$	Max.	1.5			V
I_{GT}	Gate Trigger Current		Max.	0.2	15	30	mA
I_{H}	Holding Current	$I_T = 0.5\text{A}, R_{\text{GK}} = 1\text{K}\Omega$	Max.	5	30	40	mA
I_{L}	Latching Current	$I_G = 1.2 I_{\text{GT}}, R_{\text{GK}} = 1\text{K}\Omega$	Max.	7	50	60	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{\text{DRM}}, \text{gate open}$ $R_{\text{GK}} = 1\text{K}\Omega, T_j = 125^\circ\text{C}$	Min.	200	500	600	V/ μs
$R_{\text{th(j-c)}}$	Junction to case (AC)		Max.	1.8			$^\circ\text{C/W}$
$R_{\text{th(j-a)}}$	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)

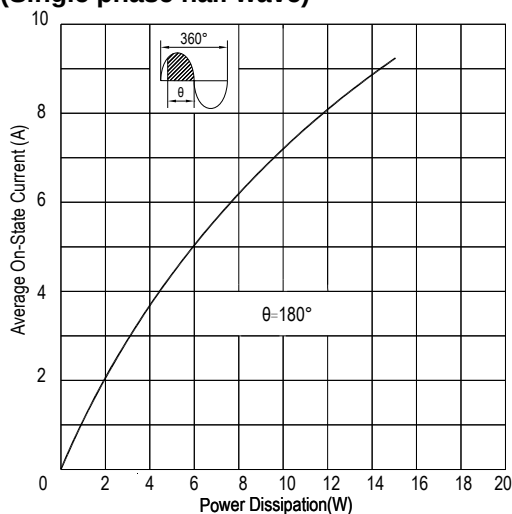


FIG.2: Average on-state current VS Allowable case Temperature (Single phase half wave)

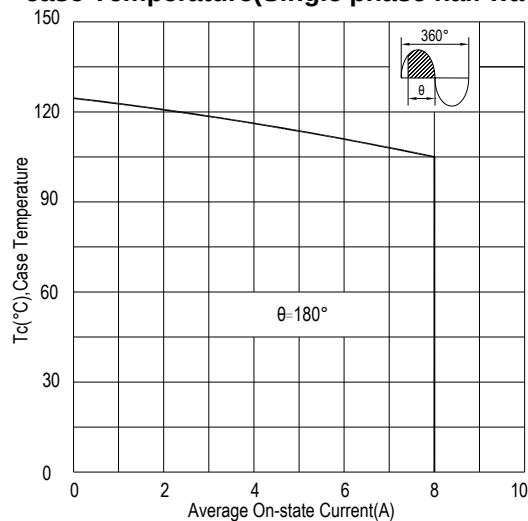


FIG.3: Gate trigger current VS Junction temperature

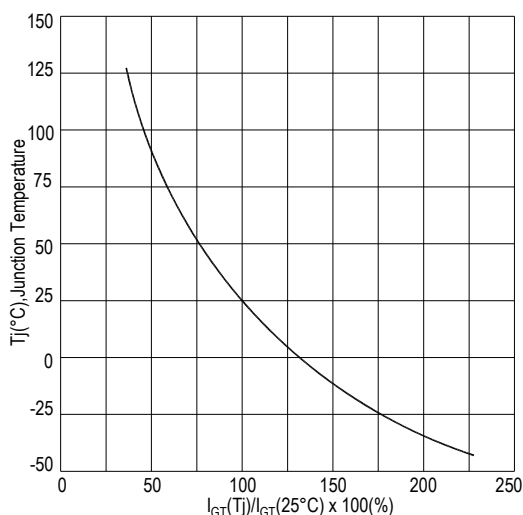


FIG.4: Rated surge on-state current (Non-Repetitive)

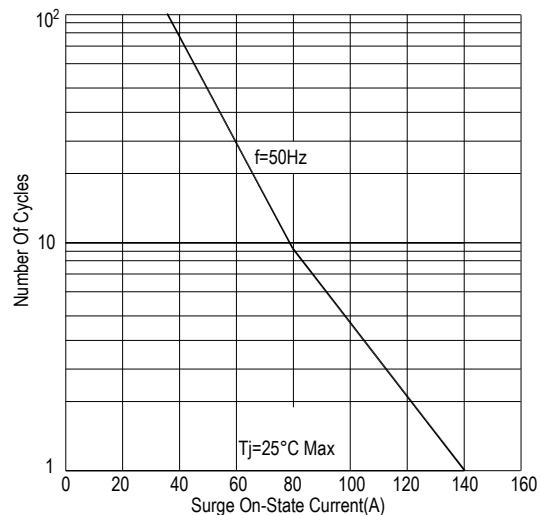


FIG.5: On-state characteristics(Max)

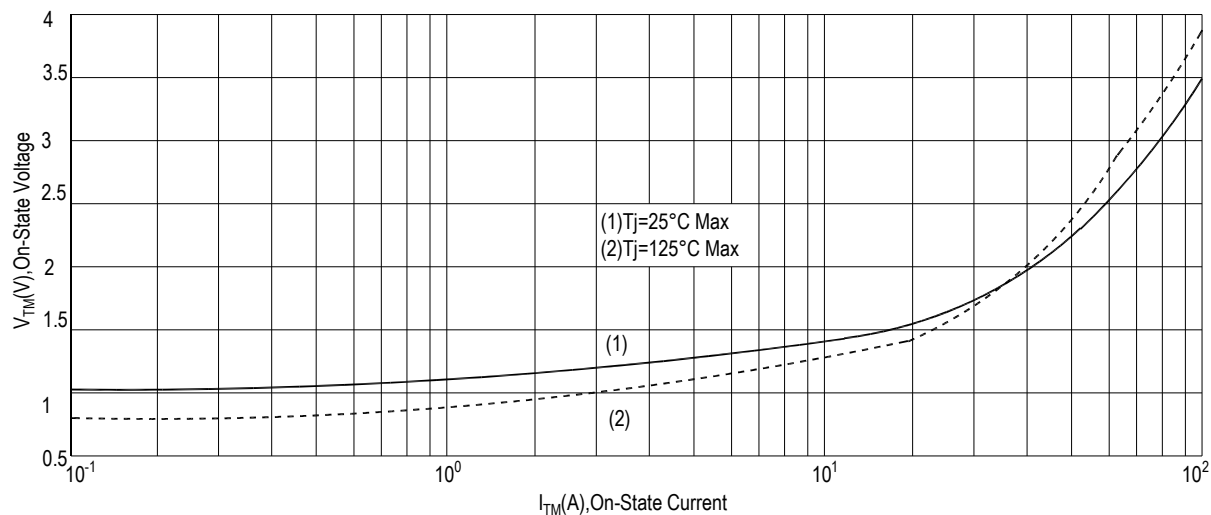


FIG.6: Holding current and Latching current VS Junction temperature

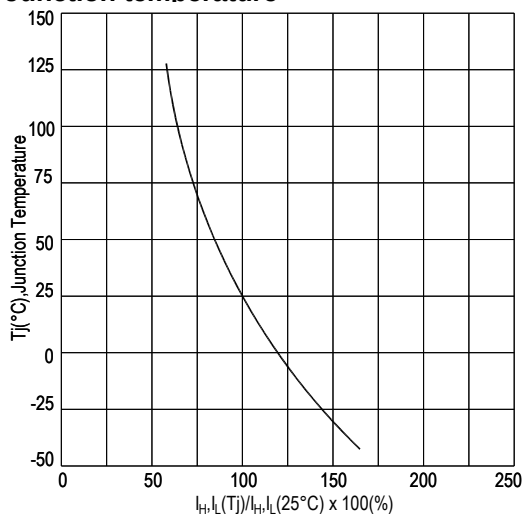


FIG.7: Gate trigger voltage VS Junction temperature

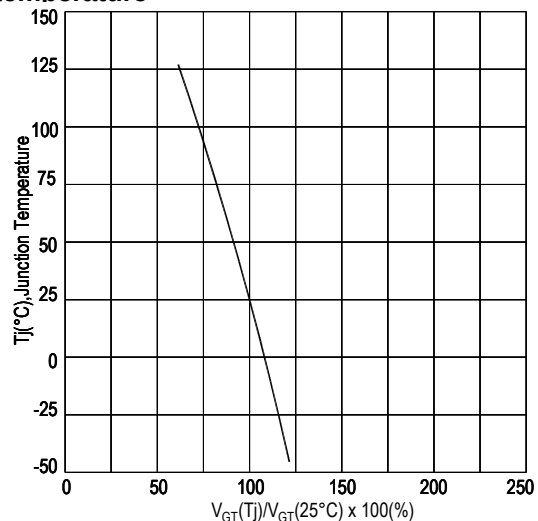


FIG.8: Gate trigger current VS Junction temperature for type T gate triggering

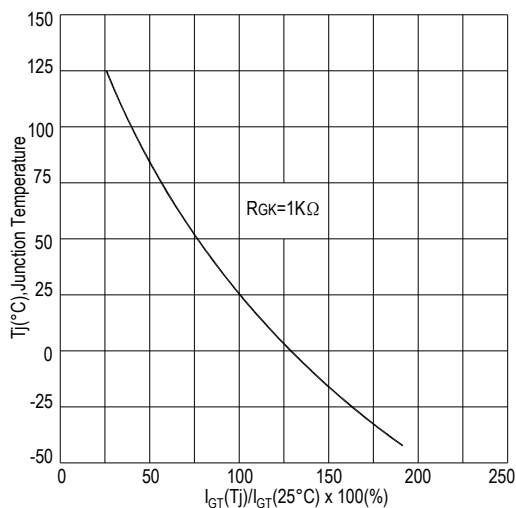
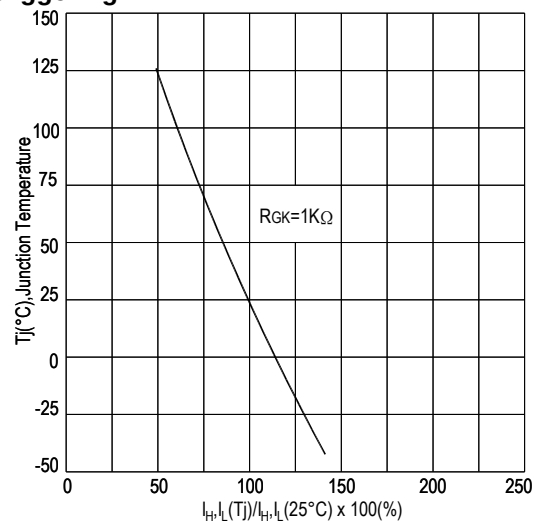
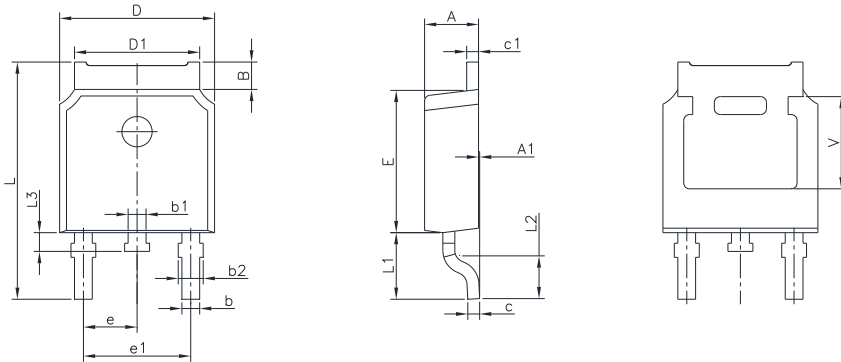


FIG.8: Holding current and Latching current VS Junction temperature for type T gate triggering



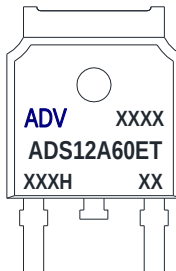
PACKAGE MECHANICAL DATA

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	1.070	1.220	0.042	0.048
b	0.720	0.850	0.028	0.033
b1	0.720	0.850	0.028	0.033
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	5.200	5.400	0.205	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	3.950 REF.		0.155 REF.	

Making Diagram



ADV:Logo
ADS12A60ET:Part number
X:Internal control code
H:Halogen Free

AD S 12 A 80 E T(S)(W)

ADVANCED Internal control code Current:12=12A 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
ADS12A60E#	TO-252-2	ADS12A60E#	Tube	80pcs
			Embossed tape	2500pcs
ADS12A80E#	TO-252-2	ADS12A80E#	Tube	80pcs
			Embossed tape	2500pcs

Note:# = Gate Trigger Current Sensitivity and type

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