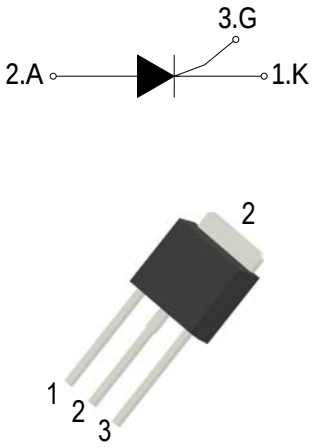
SCRs

General Description

Available either in sensitive or standard gate triggering levels, the 12A SCR series is suitable to fit all modes of control found inapplications 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...



TO-251

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	Tj=25°C	ADT12A60D	600	V
V_{RRM}	Repetitive peak reverse voltage		ADT12A80D	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		12	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		98	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		ADT12A60D/80D			Unit
				T	S	Blank	
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current	$V_{DRM} = V_{RRM}$, R_{GK} = 1KΩ Tj = 25°C	Max.	5			uA
		$V_{DRM} = V_{RRM}$, R_{GK} = 1KΩ Tj = 125°C		2			mA
V_{TM}	Peak On-State Voltage	I_{TM} = 24A, t_p = 380 μs	Max.	1.55			V
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{DRM}$ R_L = 3.3 kΩ R_{GK} = 1KΩ Tj = 125°C	Min.	0.2			V
V_{GT}	Gate Trigger Voltage	V_D = 12V , R_L = 33Ω	Max.	1.5			V
I_{GT}	Gate Trigger Current		Max.	0.2	15	30	mA
I_H	Holding Current	I_T = 0.5A R_{GK} = 1KΩ	Max.	5	30	40	mA
I_L	Latching Current	I_G = 1.2 I_{GT} R_{GK} = 1KΩ	Max.	7	50	60	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	V_D = 2/3V_{DRM} gate open R_{GK} = 1KΩ Tj = 125°C	Min.	200	500	600	V/μs
$R_{th(j-c)}$	Junction to case (AC)		Max.	1.8			°C/W
$R_{th(j-a)}$	Junction to ambient		Max.	100			°C/W

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

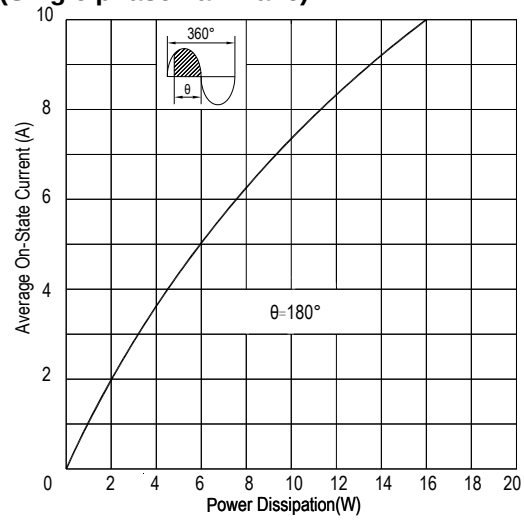


FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)

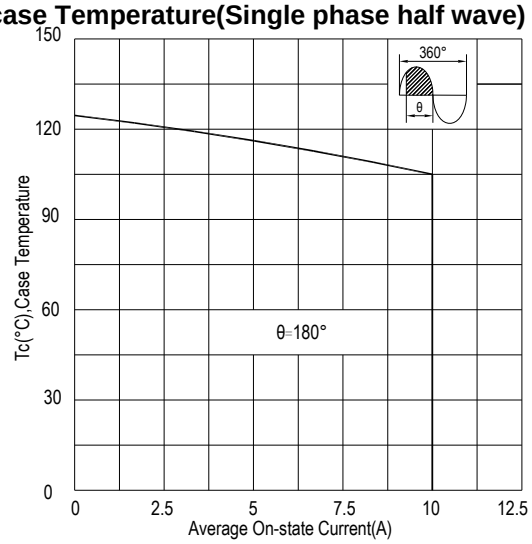


FIG.3: Gate trigger current VS Junction temperature

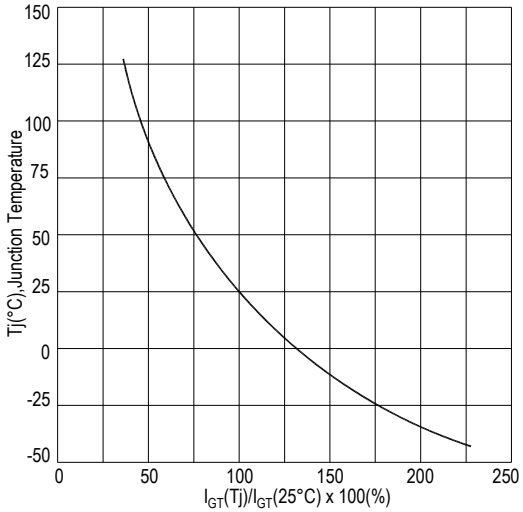


FIG.4: Rated surge on-state current (Non-Repetitive)

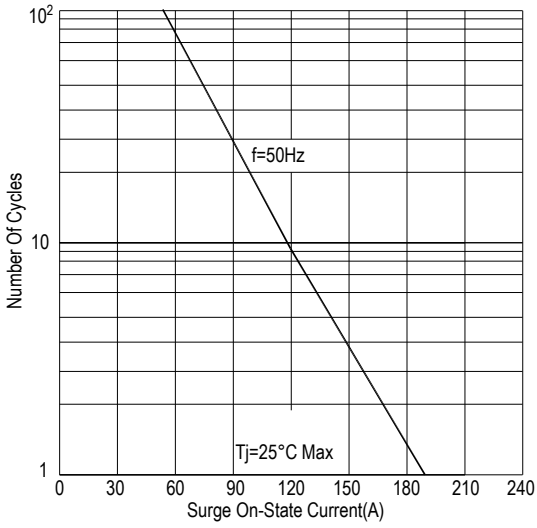


FIG.5: On-state characteristics(Max)

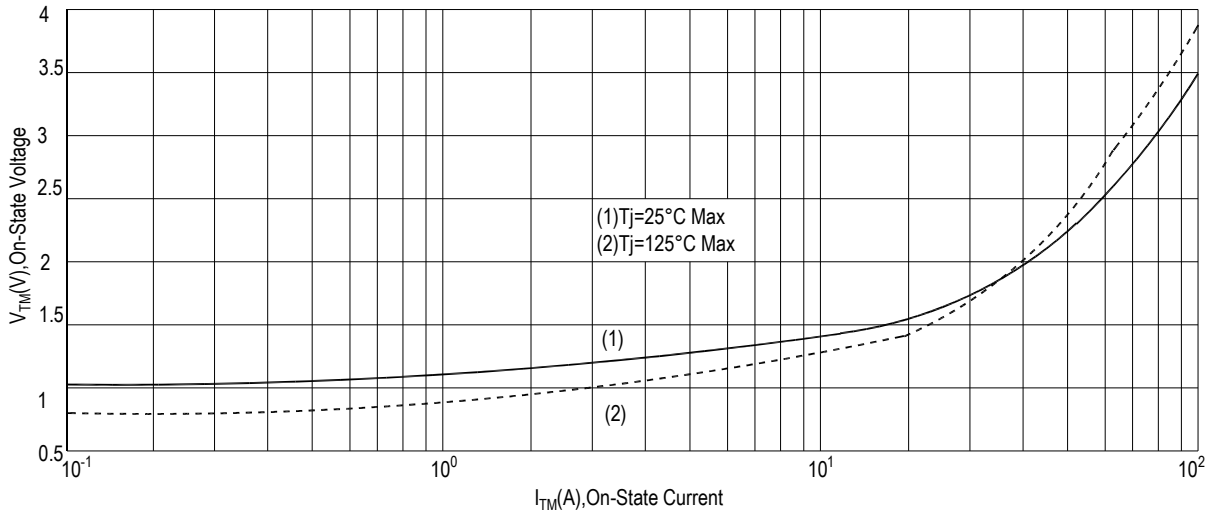


FIG.6:Holding current and Latching current VS Junction temperature

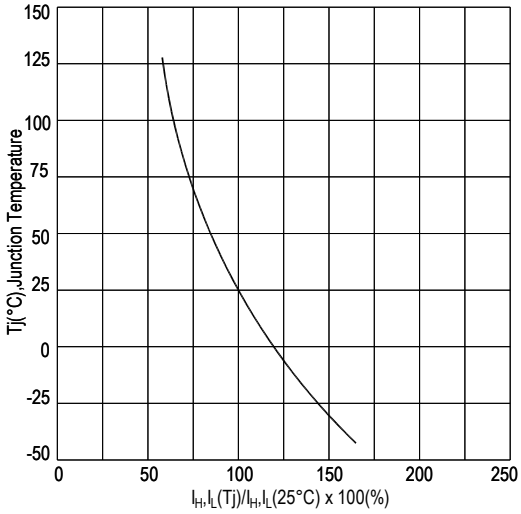


FIG.7: Gate trigger voltage VS Junction temperature

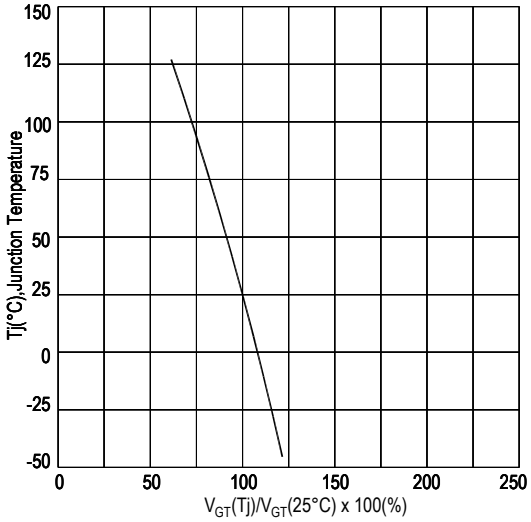


FIG.8: Gate trigger current VS Junction temperature for type T gate triggering

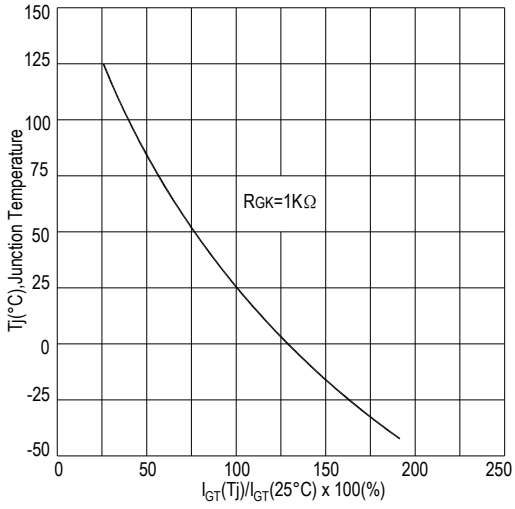
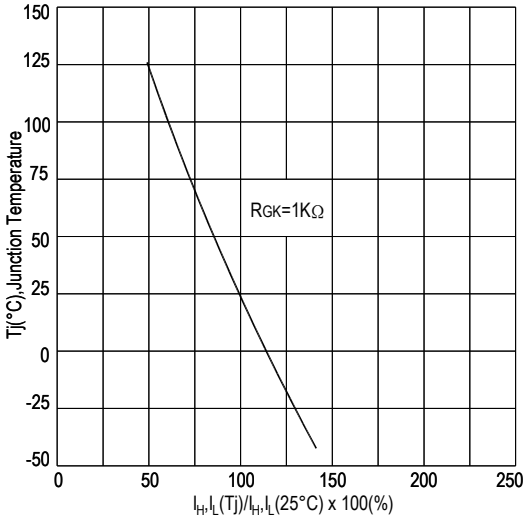
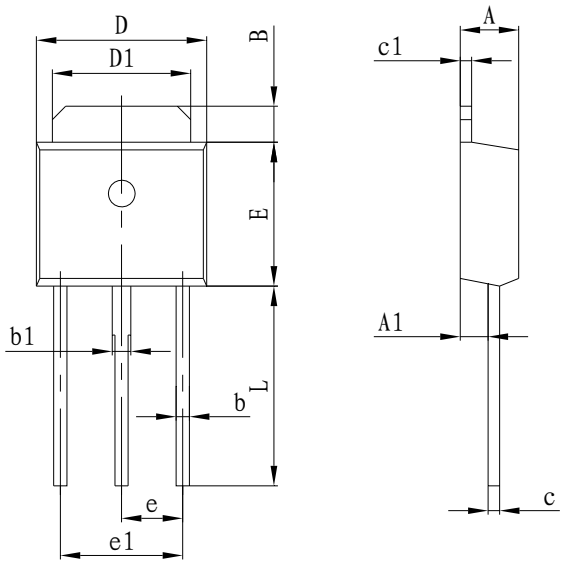


FIG.8:Holding current and Latching current VS Junction temperature for type T gate triggering



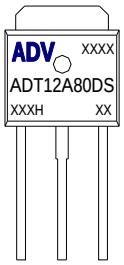
PACKAGE MECHANICAL DATA

TO-251 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.900	1.100	0.035	0.043
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	0.430	0.620	0.017	0.024
c1	0.480	0.620	0.019	0.024
D	6.350	6.700	0.252	0.264
D1	5.100	5.400	0.200	0.213
E	6.000	6.200	0.236	0.244
e	2.300TYP		0.091TYP	
e1	4.500	4.700	0.177	0.185
L	8.900	9.400	0.350	0.370

Making Diagram



ADV:Logo
ADT12A80DS:Part number
X:Internal control code
H:Halogen Free

AD T 12 A 80 D 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:D=TO-251

Ordering information

Part number	Package	Marking	Packing	Quantity
ADT12A60D#	TO-251	ADT12A60D#	Tube	80pcs
ADT12A80D#	TO-251	ADT12A80D#	Tube	80pcs
Note:# = Gate Trigger Current Sensitivity and type				

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