

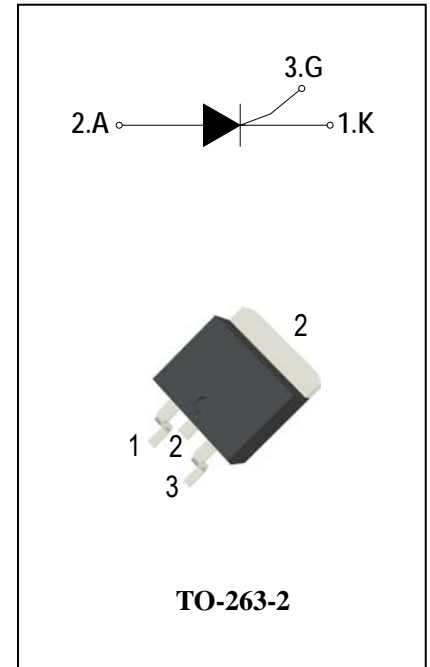
SCRs

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 ($I_{T(RMS)} = 12\text{ A}$)
- ◆ These are Pb-Free Devices



Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	$T_j = 25^\circ\text{C}$	ADT12A60G	600	V
V_{RRM}	Repetitive peak reverse voltage		ADT12A80G	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , $T_c = 110^\circ\text{C}$		10	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , $T_c = 110^\circ\text{C}$		12	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, $t_p = 10\text{ms}(50\text{Hz}) T_j = 25^\circ\text{C}$		190	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	$T_j = 125^\circ\text{C}, \text{Pulse Width} \leq 20\mu\text{s}$		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		ADT12A60G/80G			Unit
				T	S	Blank	
I_{DRM}	Peak Forward Reverse	$V_{DRM} = V_{RRM}, R_{GK} = 1K\Omega$ $T_j = 25^\circ\text{C}$	Max.	5			μA
I_{RRM}	Blocking Current	$V_{DRM} = V_{RRM}, R_{GK} = 1K\Omega$ $T_j = 125^\circ\text{C}$		2			mA
V_{TM}	Peak On-State Voltage	$I_{TM} = 24\text{A}, t_p = 380 \mu\text{s}$	Max.	1.55			V
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{DRM} \quad R_L = 3.3 k\Omega$ $R_{GK} = 1K\Omega \quad T_j = 125^\circ\text{C}$	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	$I_T = 0.5\text{A} \quad R_{GK} = 1K\Omega$	Max.	5	30	40	mA
I_L	Latching Current	$I_G = 1.2 I_{GT} \quad R_{GK} = 1K\Omega$	Max.	7	50	60	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	$V_D = 2/3V_{DRM} \quad \text{gate open}$ $R_{GK} = 1K\Omega \quad T_j = 125^\circ\text{C}$	Min.	200	500	600	$\text{V}/\mu\text{s}$
$R_{th(j-c)}$	Junction to case (AC)		Max.	1.3			$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient(Copper surface under tab:S=1cm ²)		Max.	45			$^\circ\text{C}/\text{W}$

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

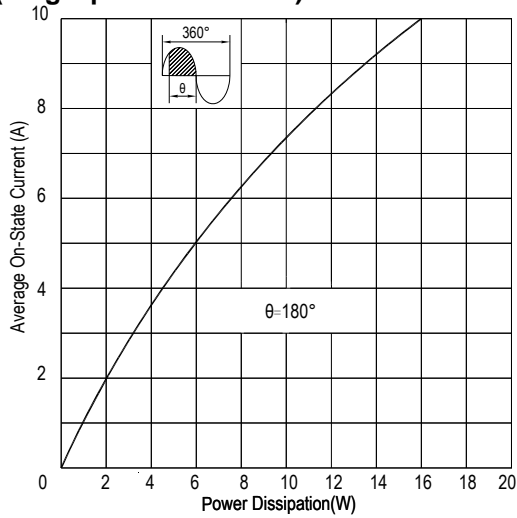


FIG.2: Average on-state current VS Allowable case Temperature (Single phase half wave)

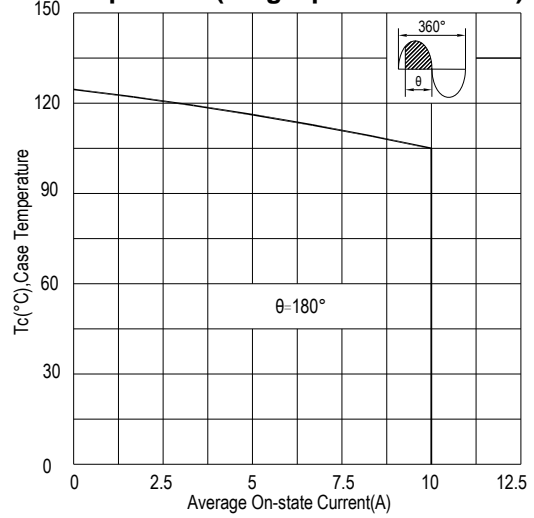


FIG.3: Gate trigger current VS Junction temperature

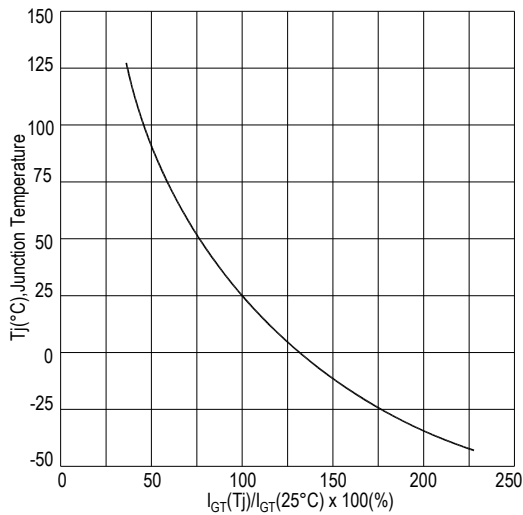


FIG.4: Rated surge on-state current (Non-Repetitive)

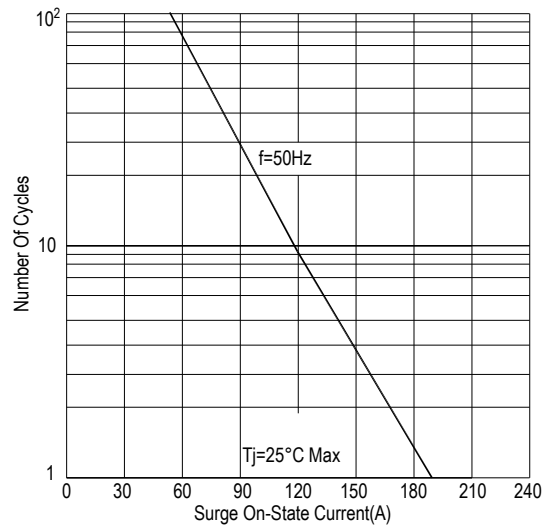


FIG.5: On-state characteristics(Max)

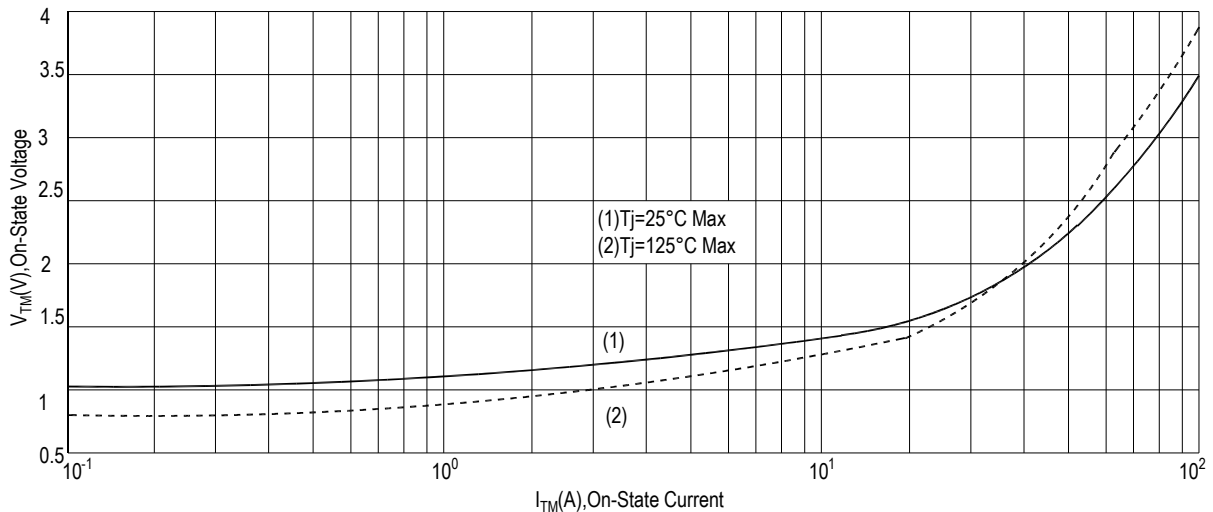


FIG.6: Holding current and Latching current VS Junction temperature

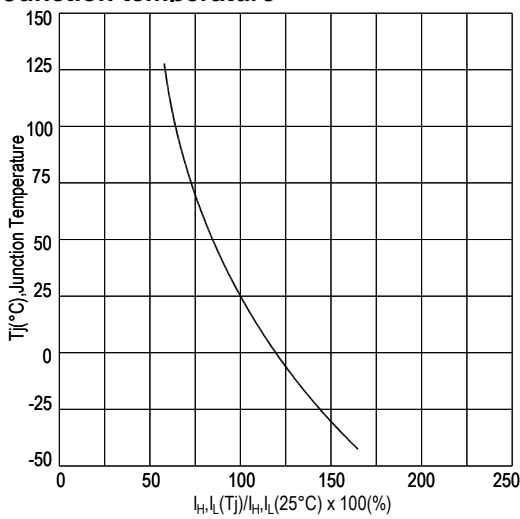


FIG.7: Gate trigger voltage VS Junction temperature

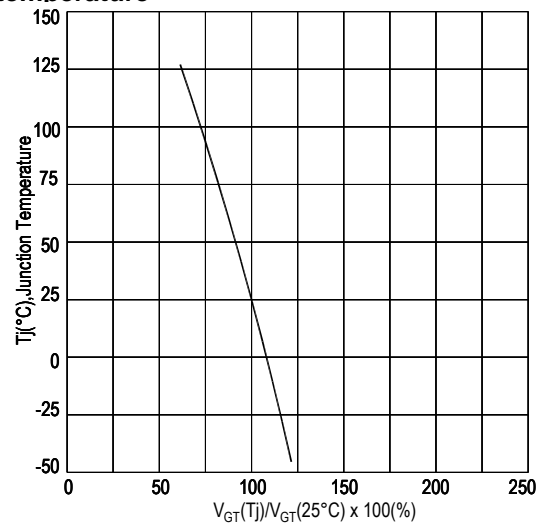


FIG.8: Gate trigger current VS Junction temperature for type T gate triggering

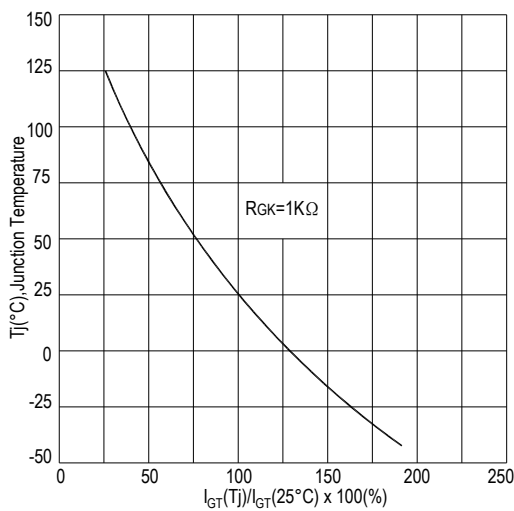
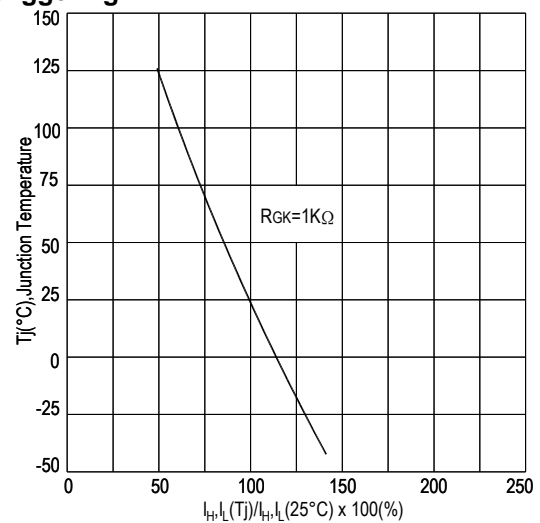
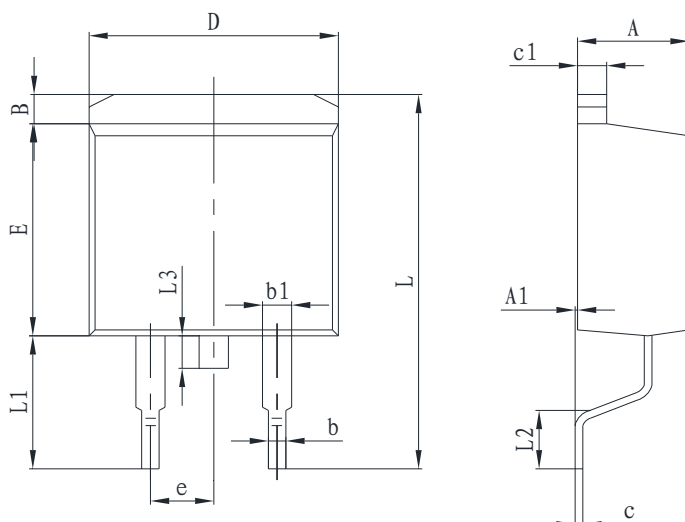


FIG.8: Holding current and Latching current VS Junction temperature for type T gate triggering



PACKAGE MECHANICAL DATA

TO-263-2 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.400	4.700	0.173	0.185
A1	0.000	0.250	0.000	0.010
B	1.300	1.600	0.051	0.063
b	0.710	0.910	0.028	0.036
b1	1.170	1.400	0.046	0.055
c	0.310	0.550	0.012	0.022
c1	1.170	1.370	0.046	0.054
D	9.900	10.200	0.390	0.402
E	9.400	9.600	0.370	0.378
e	2.540 TYP		0.100 TYP	
L	14.700	15.800	0.579	0.622
L1	3.800	4.360	0.149	0.171
L2	2.050	2.600	0.081	0.102
L3		1.750		0.069

Making Diagram

ADV XXXX ADV:Logo
 ADT12A80GS ADT12A80GS:Part number
 XXXH XX X:Internal control code
 H:Halogen Free

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

ADVANCED	Internal control code	Sensitivity and type: T=0.2mA S=15mA Blank=30mA W=80mA
Current:12=12A	SCR Series	Package explain:G=TO263-2
Voltage:60=600V 80=800V		

Ordering information

Part number	Package	Marking	Packing	Quantity
ADT12A60G#	TO-263-2	ADT12A60G#	Tube	50pcs
			Embossed tape	800pcs
ADT12A80G#	TO-263-2	ADT12A80G#	Tube	50pcs
			Embossed tape	800pcs

Note:# = Gate Trigger Current Sensitivity and type

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