

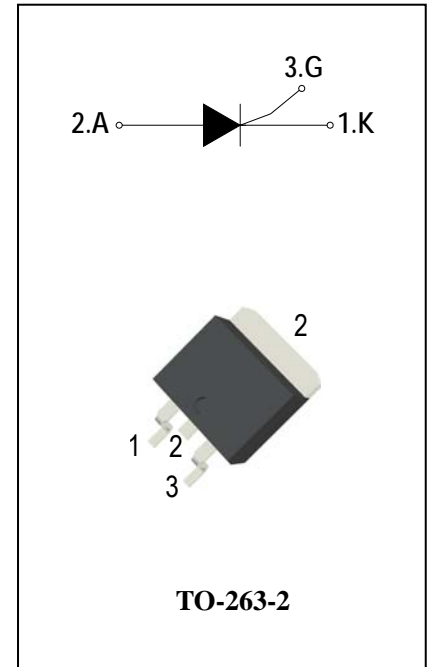
SCRs

General Description

The 16A SCR series of silicon controlled rectifiers, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc.

Features

- ◆ Repetitive Peak Off-State Voltage : 600V and 800V
- ◆ R.M.S On-State Current ($I_{T(RMS)}$) = 16A)
- ◆ These are Pb-Free Devices



Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	$T_j = 25^\circ\text{C}$	ADT16A60G	600	V
V_{RRM}	Repetitive peak reverse voltage		ADT16A80G	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , $T_c = 110^\circ\text{C}$		13	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , $T_c = 110^\circ\text{C}$		16	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, $t_p = 10\text{ms}(50\text{Hz}) T_j = 25^\circ\text{C}$		200	A
I^2t	I^2t for Fusing	$T_j = 25^\circ\text{C}, t_p = 10\text{ms}$		180	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		ADT16A60G/80G		Unit
				S	Blank	
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current	$V_{DRM} = V_{RRM}$ $T_j = 25^\circ\text{C}$	Max.	5		uA
		$V_{DRM} = V_{RRM}$ $T_j = 125^\circ\text{C}$		2		mA
V_{TM}	Peak On-State Voltage	$I_{TM} = 32\text{A}$, $t_p = 380 \mu\text{s}$	Max.	1.6		V
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{DRM}$ $R_L = 3.3 \text{ k}\Omega$ $T_j = 125^\circ\text{C}$	Min.	0.2		V
V_{GT}	Gate Trigger Voltage	$V_D = 12\text{V}$, $R_L = 33\Omega$	Max.	1.3		V
I_{GT}	Gate Trigger Current		Max.	15	30	mA
I_H	Holding Current	$I_T = 0.5\text{A}$	Max.	30	40	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}$	Max.	50	60	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	$V_D = 2/3 V_{DRM}$ gate open $T_j = 125^\circ\text{C}$	Min.	500	600	V/ μs
$R_{th(j-c)}$	Junction to case (AC)		Max.	1.1		$^\circ\text{C/W}$
$R_{th(j-a)}$	Junction to ambient(Copper surface under tab:S=1cm ²)		Max.	45		$^\circ\text{C/W}$

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

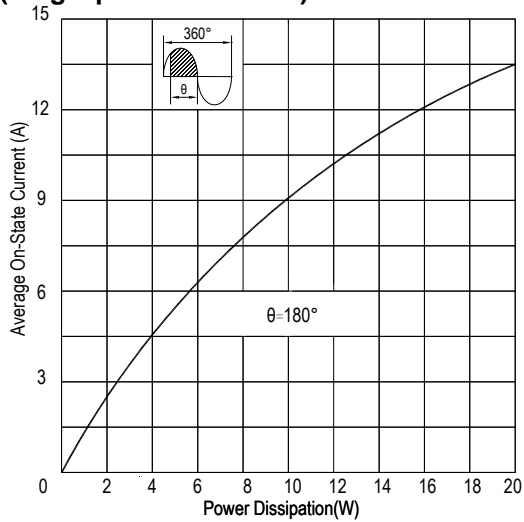


FIG.2: Average on-state current VS Allowable case Temperature (Single phase half wave)

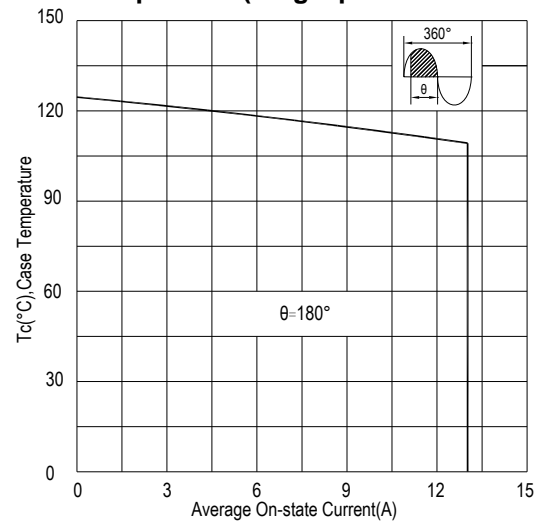


FIG.3: Gate trigger current VS Junction temperature

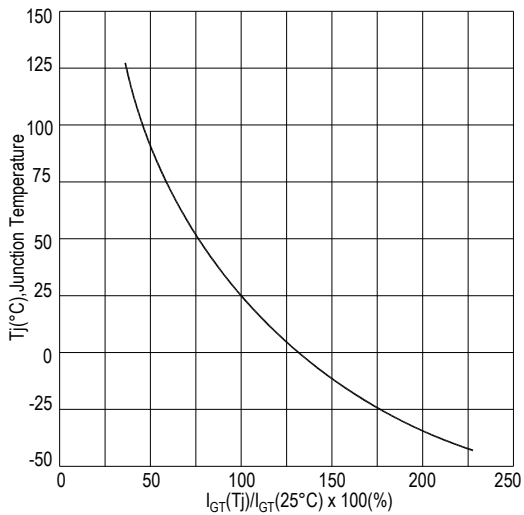


FIG.4: Rated surge on-state current (Non-Repetitive)

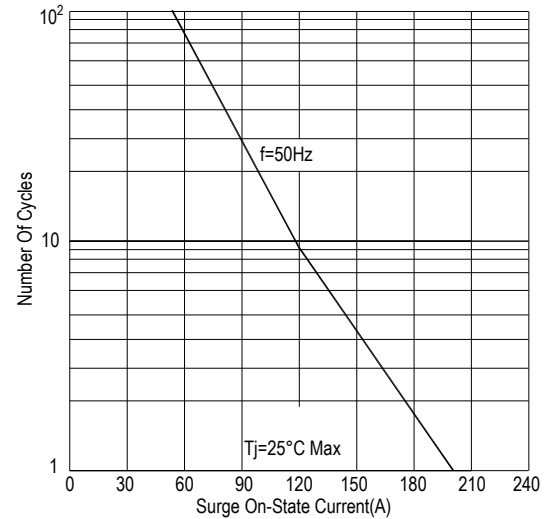


FIG.5: On-state characteristics (Max)

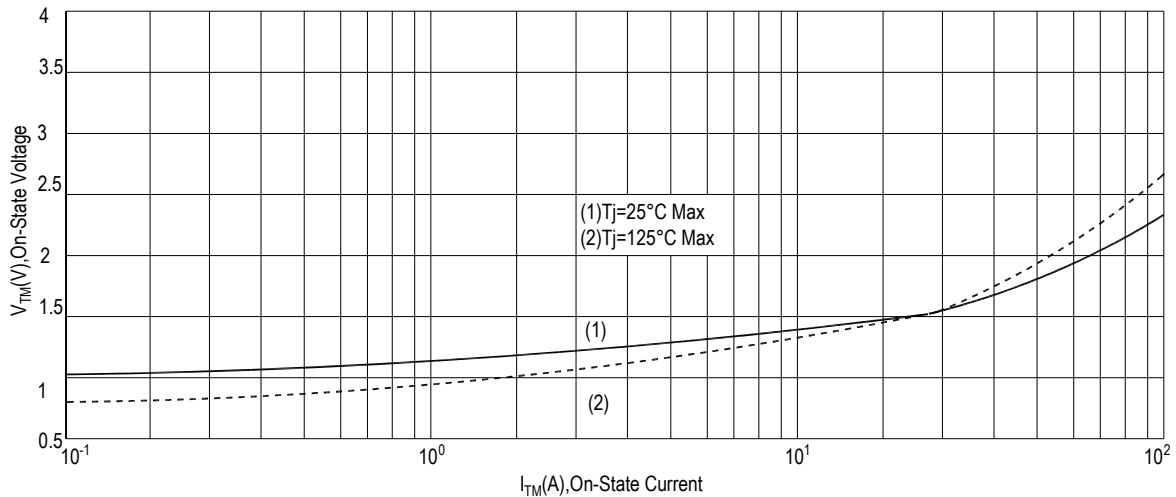


FIG.6: Holding current and Latching current VS Junction temperature

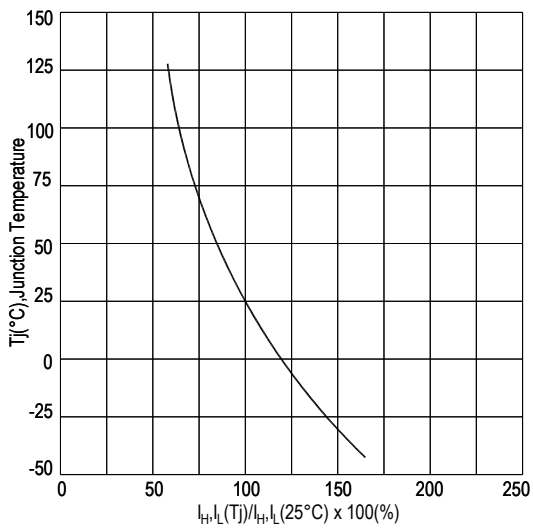
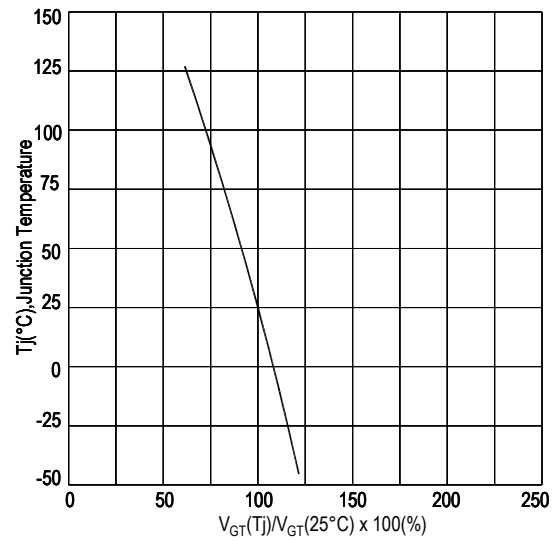
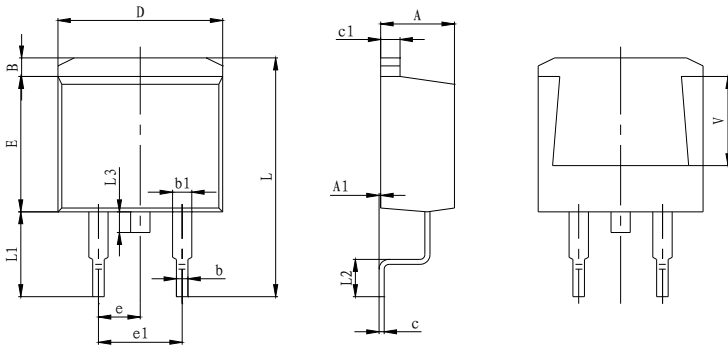


FIG.7: Gate trigger voltage VS Junction temperature



PACKAGE MECHANICAL DATA

TO-263-2 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.170	1.370	0.046	0.054
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
L	15.050	15.450	0.593	0.608
L1	5.080	5.480	0.200	0.216
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
V	5.600 REF		0.220 REF	

Making Diagram

ADV XXXX
 ADT16A80GS
 XXXH XX

ADV:Logo
 ADT16A80GS:Part number
 X:Internal control code
 H:Halogen Free

AD T 16 A 80 G T(S)(W)

ADVANCED			
Internal control code			
Current:16=16A			
SCR Series			
Voltage:60=600V 80=800V			

Sensitivity and type:
 T=0.2mA
 S=15mA
 Blank=30mA
 W=80mA
 Package explain:G=TO263-2

Ordering information

Part number	Package	Marking	Packing	Quantity
ADT16A60G#	TO-263-2	ADT16A60G#	Tube	50pcs
			Embossed tape	800pcs
ADT16A80G#	TO-263-2	ADT16A80G#	Tube	50pcs
			Embossed tape	800pcs

Note:# = Gate Trigger Current Sensitivity and type

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