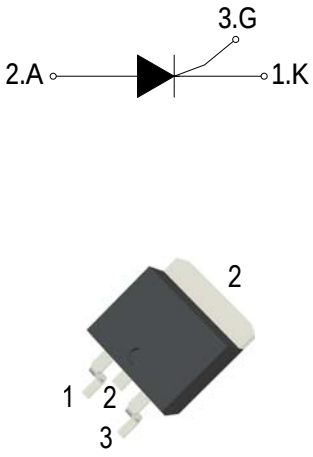
SCRs

General Description

The 20A 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.



TO-263-2

Features

- Repetitive Peak Off-State Voltage : 600V and 800V
- R.M.S On-State Current ($I_{T(RMS)}$= 20A)
- These are Pb-Free Devices

Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	Tj=25°C	ADT20A60G	600	V
V_{RRM}	Repetitive peak reverse voltage		ADT20A80G	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , Tc = 105°C		16	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , Tc = 105°C		20	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, tp=10ms(50Hz)Tj =25°C		300	A
I^2t	I^2t for Fusing	Tj =25°C,tp =10ms		312.5	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		ADT20A60G/80G		Unit
				S	Blank	
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current	$V_{DRM} = V_{RRM}$ Tj = 25°C	Max.	5		uA
		$V_{DRM} = V_{RRM}$ Tj = 125°C		4		mA
V_{TM}	Peak On-State Voltage	I_{TM} = 40A, t_p = 380 μs	Max.	1.6		V
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{DRM}$ R_L = 3.3 kΩ Tj = 125°C	Min.	0.2		V
V_{GT}	Gate Trigger Voltage	V_D = 12V ， R_L = 33Ω	Max.	1.3		V
I_{GT}	Gate Trigger Current		Max.	15	30	mA
I_H	Holding Current	I_T = 0.5A	Max.	30	40	mA
I_L	Latching Current	I_G = 1.2 I_{GT}	Max.	50	50	mA
dV/dt	Critical Rate of Rise of Off-State Voltage	V_D = 2/3V_{DRM} gate open Tj = 125°C	Min.	1000	1500	V/μs
$R_{th(j-c)}$	Junction to case (AC)		Max.	1.05		°C/W
$R_{th(j-a)}$	Junction to ambient(Copper surface under tab:S=1cm^2)		Max.	45		°C/W

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

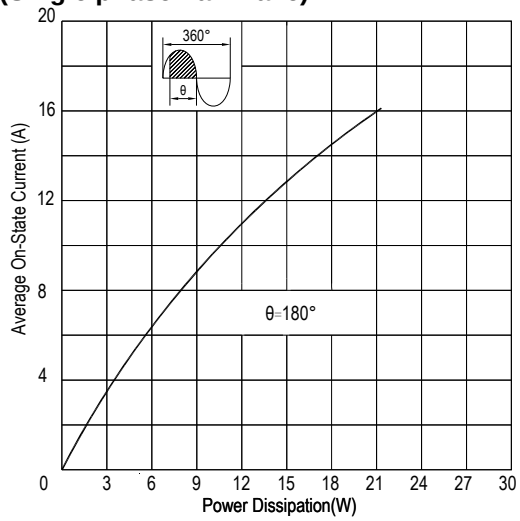


FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)

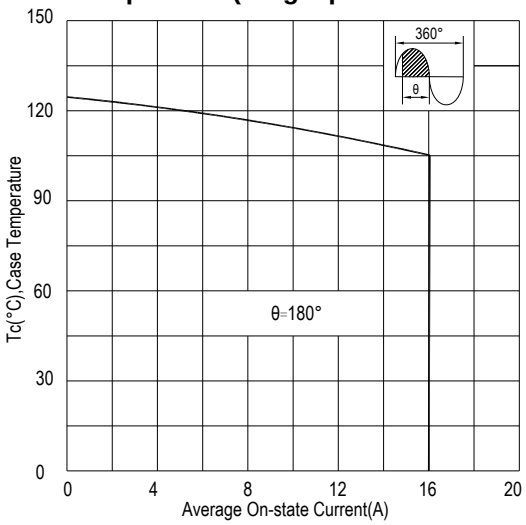


FIG.3: Gate trigger current VS Junction temperature

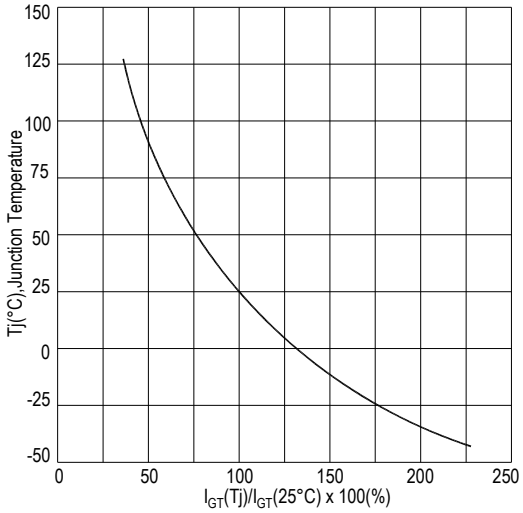


FIG.4: Rated surge on-state current (Non-Repetitive)

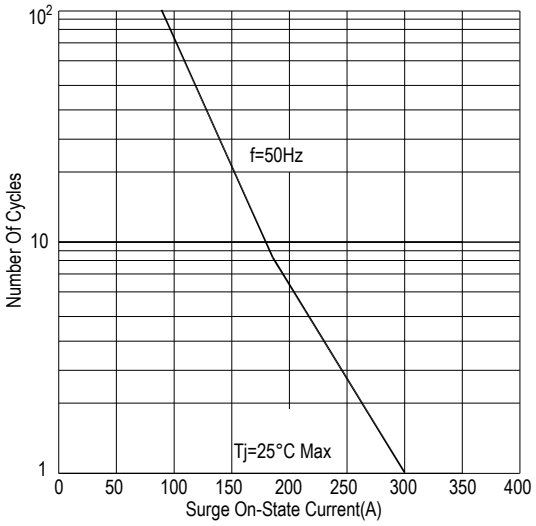


FIG.5: On-state characteristics(Max)

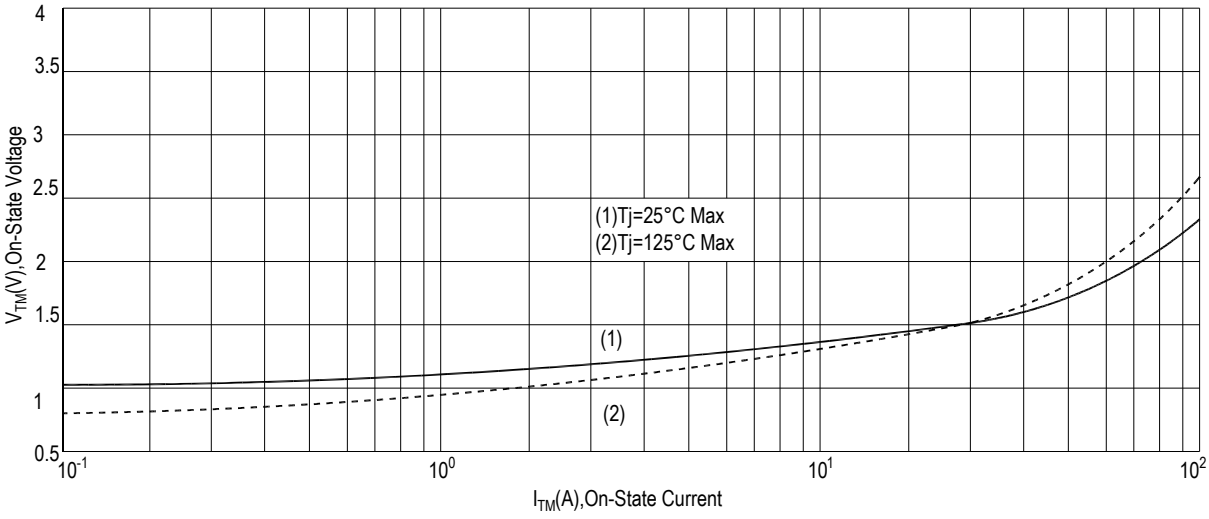


FIG.6:Holding current and Latching current VS Junction temperature

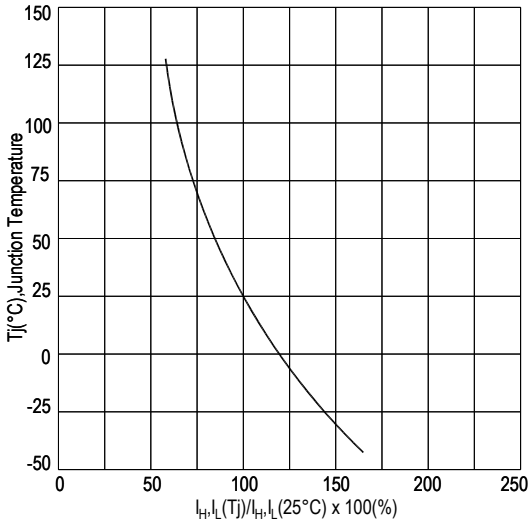
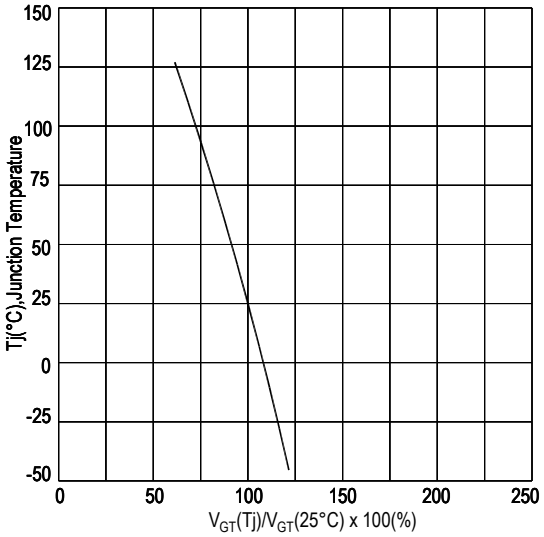
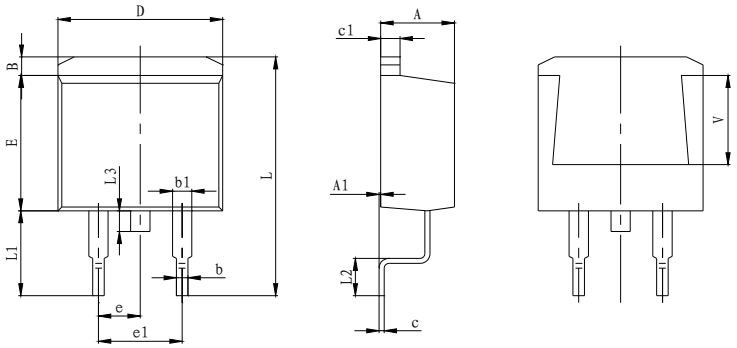


FIG.7: Gate trigger voltage VS Junction temperature



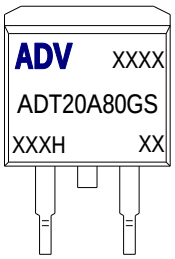
PACKAGE MECHANICAL DATA

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:Logo
ADT20A80GS:Part number
X:Internal control code
H:Halogen Free

AD T 20 A 80 G T(S)(W)

- AD: ADVANCED
- T: Internal control code
- 20: Current:20=20A
- A: SCR Series
- 80: Voltage:60=600V 80=800V
- G: Package explain:G=TO263-2
- T(S)(W): Sensitivity and type: T=0.2mA, S=15mA, Blank=30mA, W=80mA

Ordering information

Part number	Package	Marking	Packing	Quantity
ADT20A60G#	TO-263-2	ADT20A60G#	Tube	50pcs
			Embossed tape	800pcs
ADT20A80G#	TO-263-2	ADT20A80G#	Tube	50pcs
			Embossed tape	800pcs

Note:# = Gate Trigger Current Sensitivity and type

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