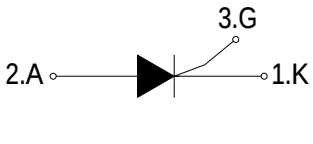
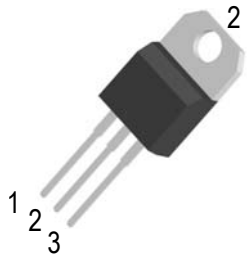
SCRs

General Description

The 40A 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-220

Features

- Repetitive Peak Off-State Voltage : 600V and 800V
- R.M.S On-State Current ($I_{T(RMS)}$=40 A)
- These are Pb-Free Devices

Absolute Maximum Ratings

Symbol	Items	Conditions		Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	Tj=25°C	ADS40A60	600	V
V_{RRM}	Repetitive peak reverse voltage		ADS40A80	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , Tc = 95°C		25	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , Tc = 95°C		40	A
I_{TSM}	Surge On-State Current	1/2 Cycle, Sine Wave Non-Repetitive, tp=10ms(50Hz)Tj =25°C		460	A
I^2t	I^2t for Fusing	Tj =25°C,tp =10ms		1060	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		ADS40A60/80		Unit
				S	Blank	
I_{DRM} I_{RRM}	Peak Forward Reverse Blocking Current	$V_{DRM} = V_{RRM}$ Tj = 25°C	Max.	10		uA
		$V_{DRM} = V_{RRM}$ Tj = 125°C		4		mA
V_{TM}	Peak On-State Voltage	I_{TM} = 80A, 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.	0.8		°C/W
$R_{th(j-a)}$	Junction to ambient		Max.	60		°C/W

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

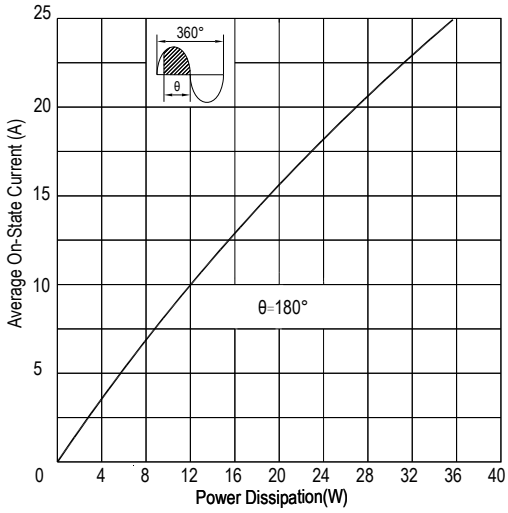


FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)

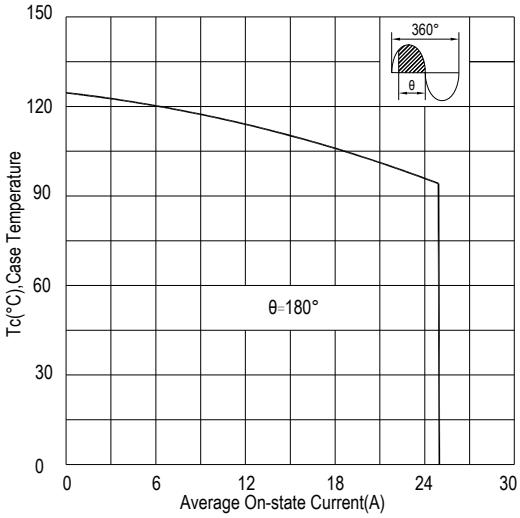


FIG.3: Gate trigger current VS Junction temperature

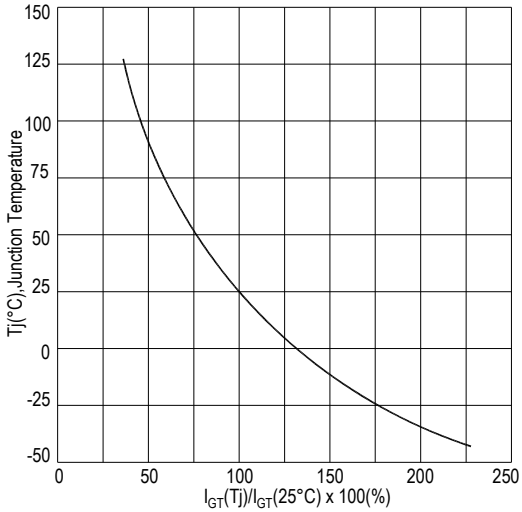


FIG.4: Rated surge on-state current (Non-Repetitive)

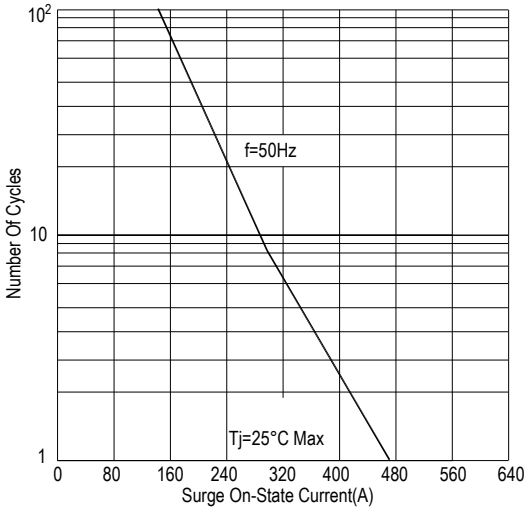


FIG.5: On-state characteristics(Max)

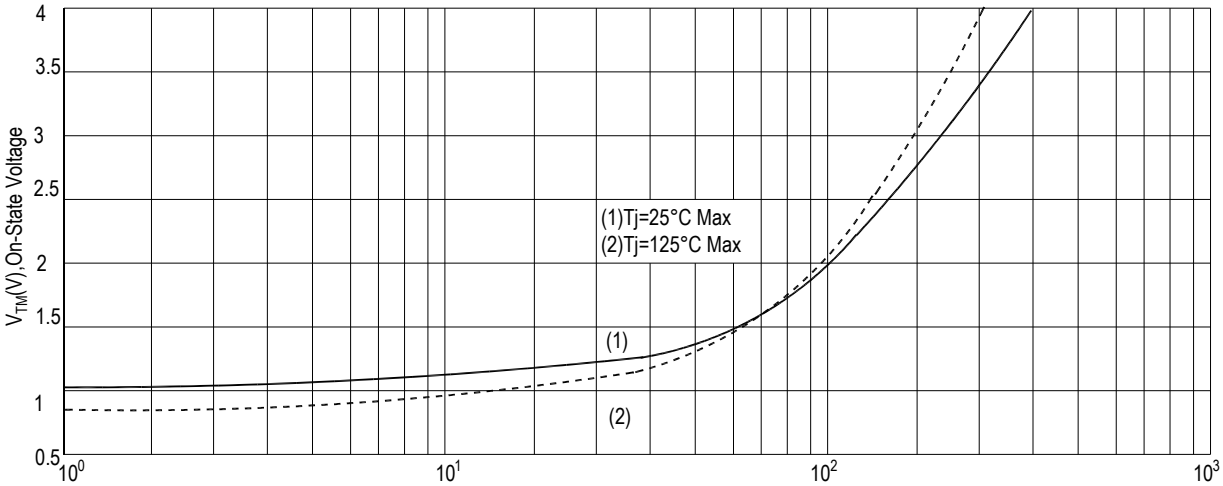


FIG.6:Holding current and Latching current VS Junction temperature

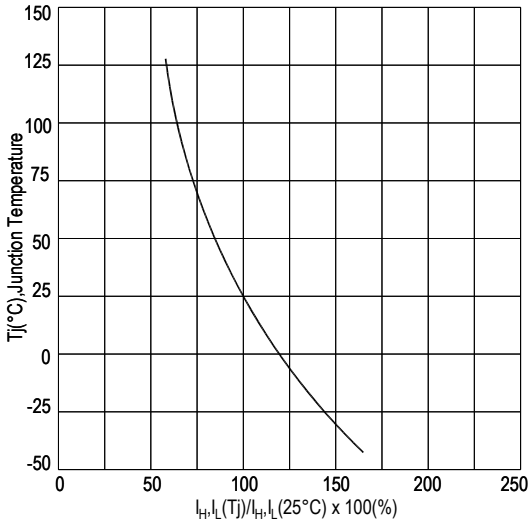
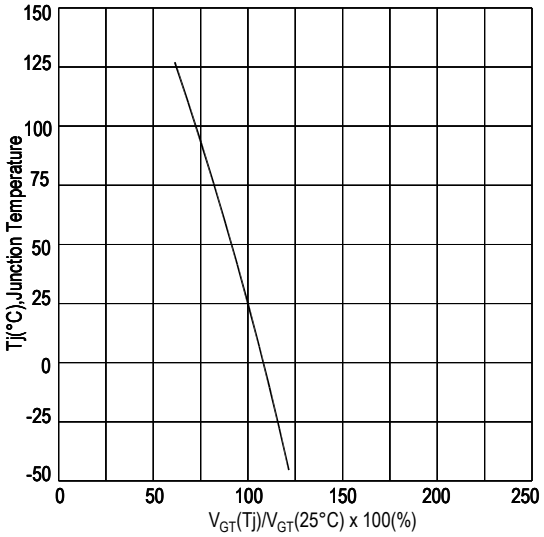
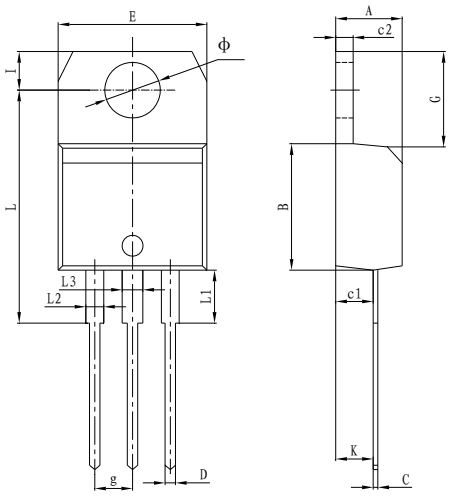


FIG.7: Gate trigger voltage VS Junction temperature



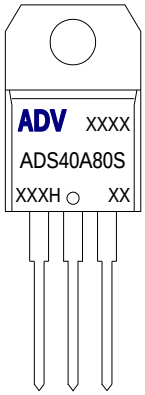
PACKAGE MECHANICAL DATA

TO-220 Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.40	4.60	0.173	0.181
B	9.00	9.30	0.354	0.366
C	0.40	0.60	0.015	0.023
c1	2.00	2.60	0.078	0.102
c2	1.23	1.32	0.048	0.051
D	0.70	1.00	0.027	0.039
E	10.00	10.40	0.393	0.409
g	2.40	2.70	0.094	0.106
G	6.20	6.80	0.244	0.267
I	2.65	2.95	0.104	0.116
L	15.80	16.80	0.622	0.661
L1	3.75		0.147	
L2	1.14	1.70	0.044	0.066
L3	1.14	1.70	0.044	0.066
Φ	3.60	3.90	0.141	0.153
K	2.60TYP		0.102TYP	

Making Diagram



ADV:Logo
ADS40A80S:Part number
X:Internal control code
H:Halogen Free

AD S 40 A 80 # T(S)(W)

- AD: ADVANCED
- S: Internal control code
- 40: Current:40=40A
- A: SCR Series
- 80: Voltage:60=600V 80=800V
- #: Sensitivity and type: T=0.2mA, S=15mA, Blank=30mA, W=80mA
- T(S)(W): Package explain:Blank=TO-220

Ordering information

Part number	Package	Marking	Packing	Quantity
ADS40A60#	TO-220	ADS40A60#	Tube	50pcs
ADS40A80#	TO-220	ADS40A80#	Tube	50pcs
Note:# = Gate Trigger Current Sensitivity and type				

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