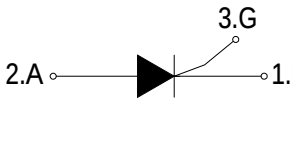
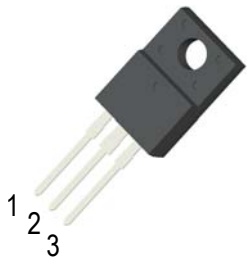
SCRs

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-220F

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	ADS40A60F	600	V
V_{RRM}	Repetitive peak reverse voltage		ADS40A80F	800	V
$I_{T(AV)}$	Average On-State Current	Half Sine Wave , Tc = 85°C		25	A
$I_{T(RMS)}$	R.M.S On-State Current	Half Sine Wave , Tc = 85°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		ADS40A60F/80F		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.	1.0		°C/W
$R_{th(j-a)}$	Junction to ambient		Max.	60		°C/W

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

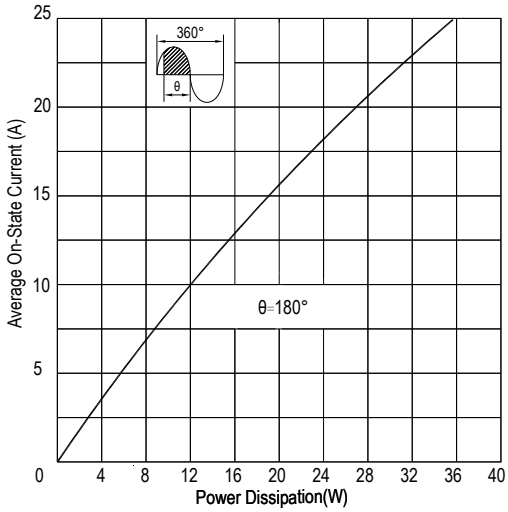


FIG.2: Average on-state current VS Allowable case Temperature(Single phase half wave)

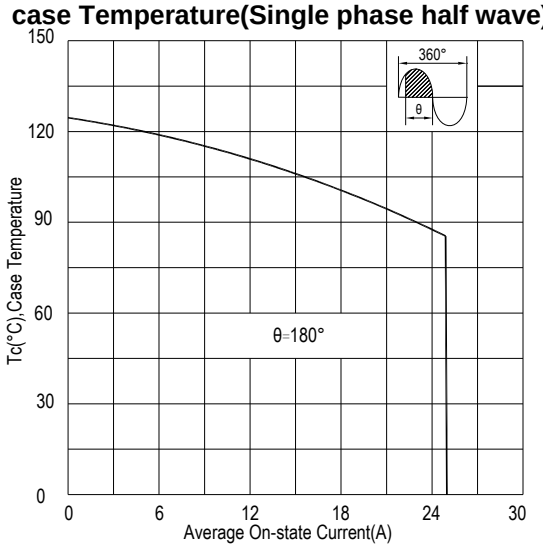


FIG.3: Gate trigger current VS Junction temperature

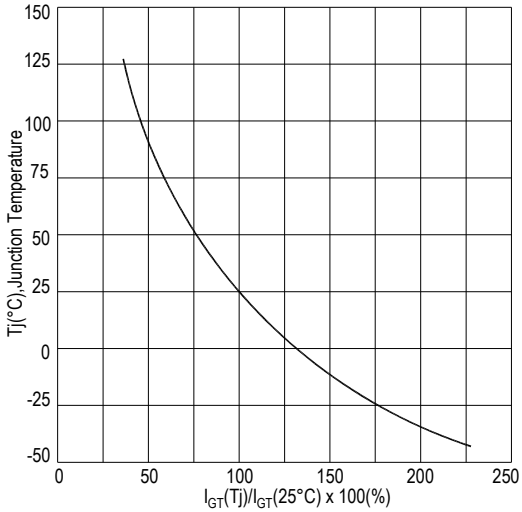


FIG.4: Rated surge on-state current (Non-Repetitive)

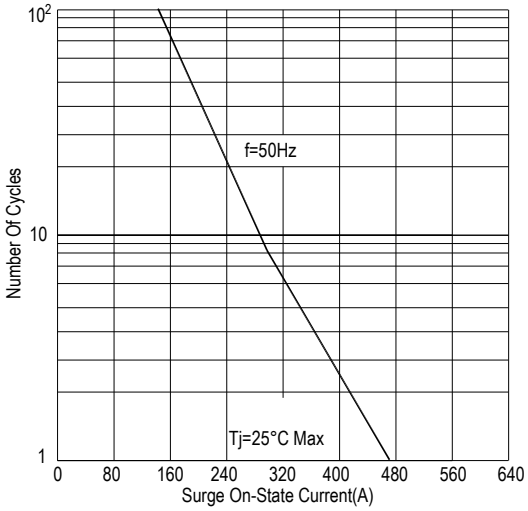


FIG.5: On-state characteristics(Max)

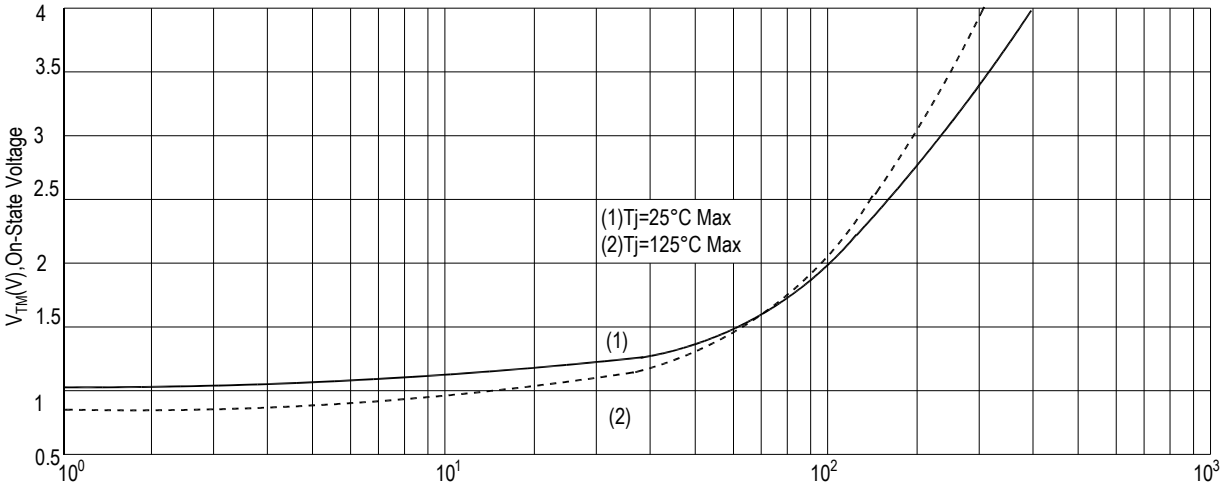


FIG.6:Holding current and Latching current VS Junction temperature

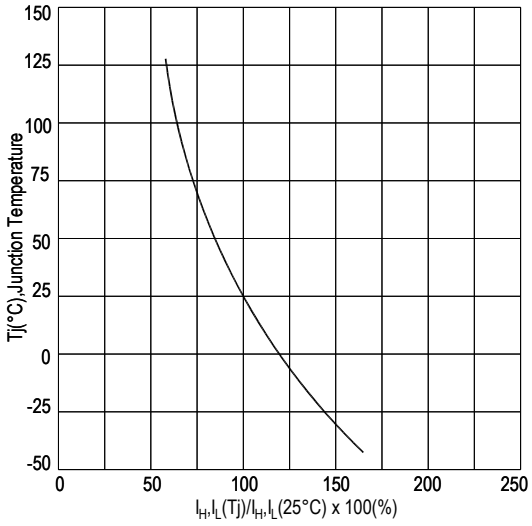
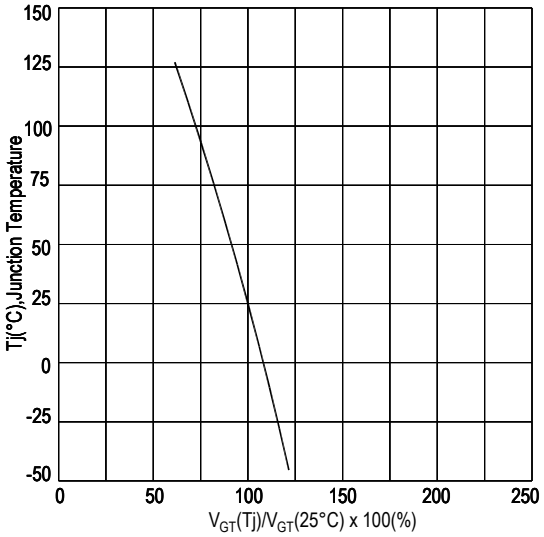
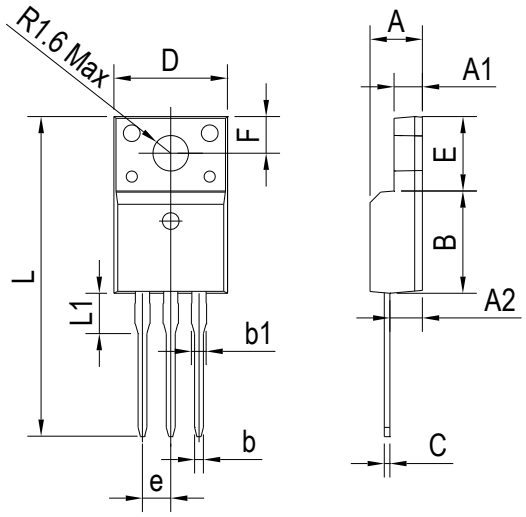


FIG.7: Gate trigger voltage VS Junction temperature



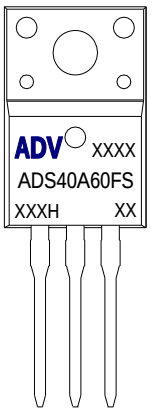
PACKAGE MECHANICAL DATA

TO-220F Package Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.300	4.800	0.169	0.189
A1	2.400	2.700	0.094	0.106
A2	2.500	3.000	0.098	0.118
B	8.800	9.300	0.346	0.367
b	0.600	0.950	0.023	0.037
b1	1.100	1.700	0.043	0.067
C	0.500	0.750	0.020	0.030
D	9.700	10.360	0.382	0.408
E	6.400	6.800	0.252	0.268
e	2.540 TYP		0.100 TYP	
F	3.300 REF		0.130 REF	
L	28.000	30.000	1.102	1.181
L1	2.900	3.630	0.114	0.143

Making Diagram



ADV:Logo
ADS40A60FS:Part number
X:Internal control code
H:Halogen Free

AD S 40 A 60 F T(S)(W)

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

Ordering information

Part number	Package	Marking	Packing	Quantity
ADS40A60F#	TO-220F	ADS40A60F#	Tube	50pcs
ADS40A80F#	TO-220F	ADS40A80F#	Tube	50pcs
Note:# = Gate Trigger Current Sensitivity and type				

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