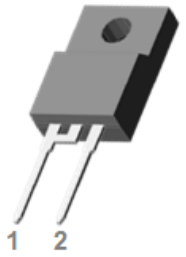
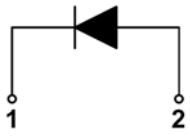
ULTRAFAST RECOVERY POWER RECTIFIER

Description

The SF5A300H is a silicon rectifier in a 2-Lead TO220 full-pack type package designed, and is specially suited for switching mode base drive and transistor circuit. This device is intended for use in low voltage, high frequency inverters, free-wheeling diode and polarity protection.





Pin Configuration
Pin 1: Cathode
Pin 2: Anode

TO-220F-2L

Feature

- Low forward voltage drop and leakage current
- Ultra fast reverse recovery time
- Low power loss and High efficiency
- Full lead (Pb)-free and RoHS compliant device

Product Characteristics

$I_{F(AV)}$	5A
V_{RRM}	300V
V_{FM} @ Tj=125℃	0.85V
t_{rr}	30ns

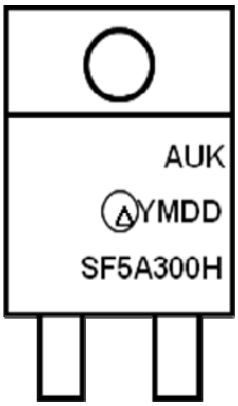
Applications

- Switching mode power supply
- Free-wheeling diode for motor application
- Polarity protection
- Power switching circuits

Ordering Information

Device	Marking Code	Package	Packaging
SF5A300H	SF5A300H	TO-220F-2L	Tube

Marking Information



AUK = Manufacture Logo
Δ = Control Code of Manufacture
YMDD = Date Code Marking
-. Y = Year Code
-. M = Monthly Code
-. DD = Daily Code
SF5A300H = Specific Device Code

Absolute Maximum Ratings (Limiting Values)

Characteristic	Symbol	Value	Unit
Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage	V_{RRM} V_{RWM} V_R	300	V
Maximum average forward rectified current	$I_{F(AV)}$	5	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	100	A
Storage temperature range	T_{stg}	-45℃ to +150℃	℃
Maximum operating junction temperature	T_j	150	℃

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to case	$R_{th(j-c)}$	4.0	℃/W

Electrical Characteristics (Per Diode)

Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Peak forward voltage drop	V_{FM} (1)	I_{FM} = 5A	T_j=25℃	-	-	1.30	V
			T_j=125℃	-	-	0.85	V
Reverse leakage current	I_{RM} (1)	$V_R = V_{RRM}$	T_j=25℃	-	-	10	uA
			T_j=125℃	-	-	200	uA
Reverse recovery time	t_{rr}	I_F = 1A, di/dt =-100 A/us		-	-	30	ns
Junction capacitance	C_j	$V_R = 5V_{DC}$, f=1MHz		-	40	-	pF

Note : (1) Pulse test : $t_p \leq 380\ \mu s$, Duty cycle $\leq 2\%$

Rating & Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics

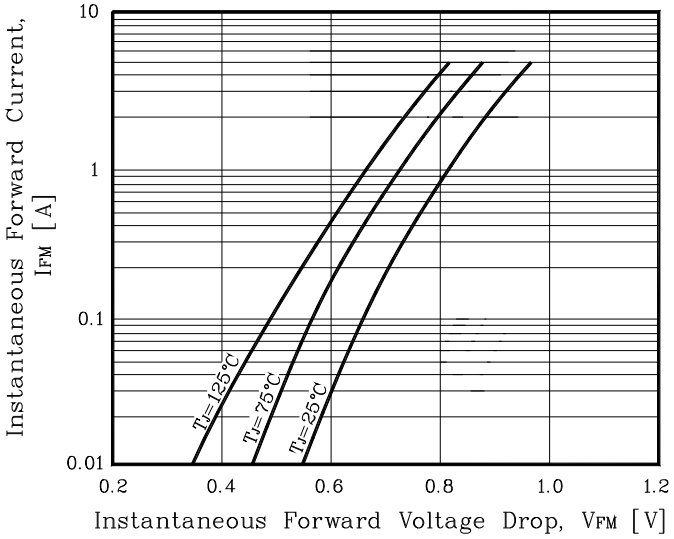


Fig. 2) Typical Reverse Characteristics

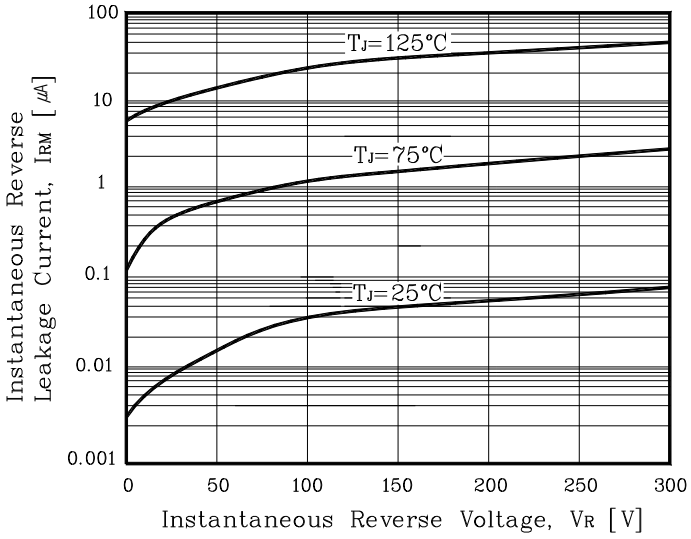


Fig. 3) Maximum Forward Derative Curve

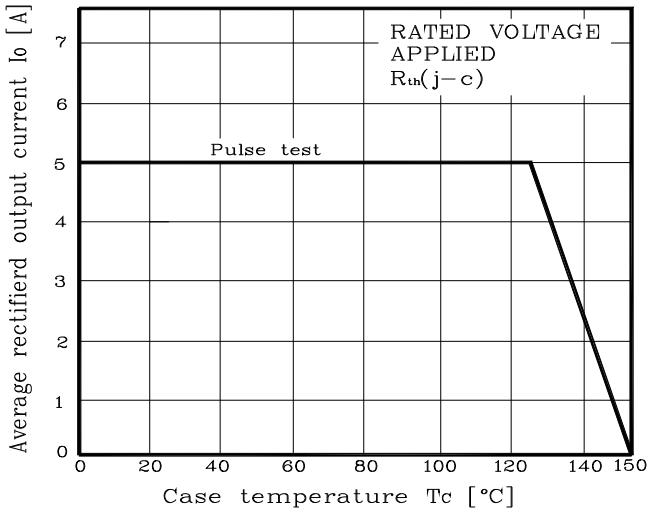


Fig. 4) Forward Power Dissipation (Per diode)

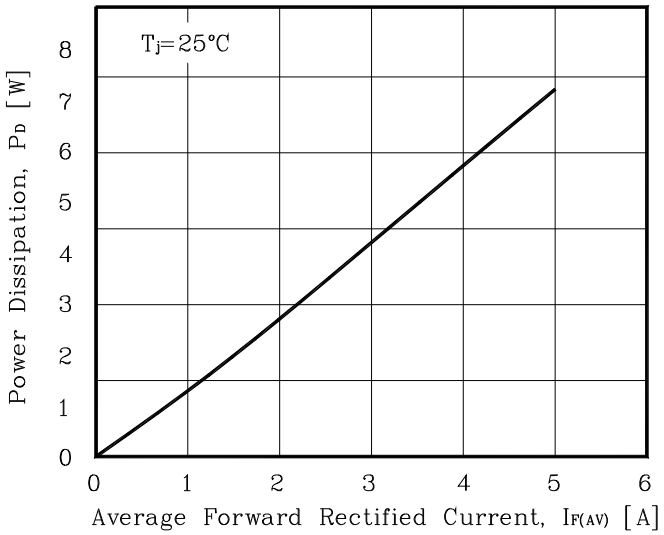


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current (Per diode)

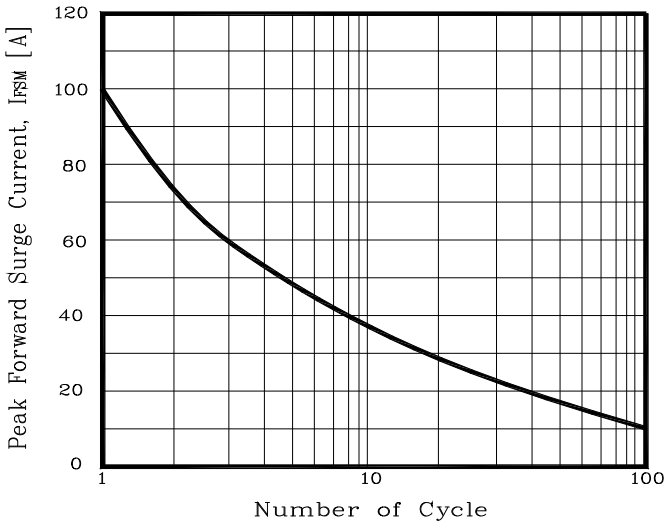
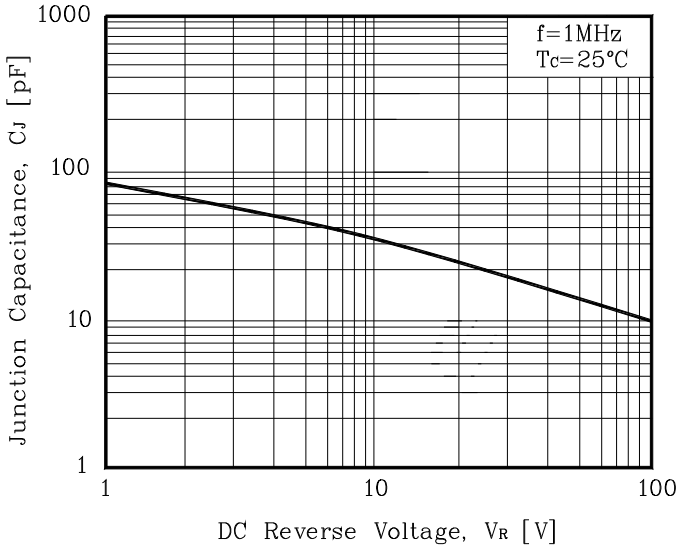
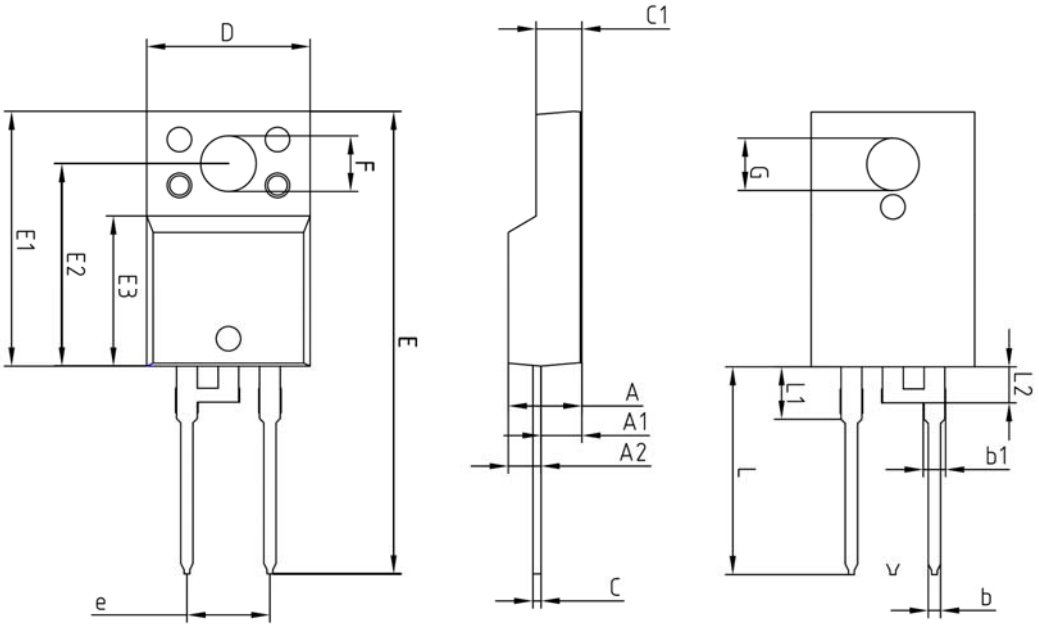


Fig. 6) Typical Junction Capacitance (Per diode)



Package Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	–	–	4.60	
A1	2.45	2.50	2.55	
A2	1.95	2.00	2.05	
b	0.65	0.75	0.85	
b1	1.07	1.27	1.47	
C	0.40	0.50	0.60	
C1	2.70	2.80	2.90	
D	9.90	10.00	10.10	
E	28.00	–	28.60	
E1	15.50	15.60	15.70	
E2	12.30	12.40	12.50	
E3	9.15	9.20	9.25	
F	3.30	3.40	3.50	
G	3.10	3.20	3.30	
e	5.08 BSC			
L	12.40	–	13.00	
L1	3.46 BSC			
L2	2.21 BSC			

The AUK Corp. products are intended for the use as components in general electronic equipment (Office and communication equipment, measuring equipment, home appliance, etc.).

Please make sure that you consult with us before you use these AUK Corp. products in equipments which require high quality and / or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, transportation, combustion control, all types of safety device, etc.). AUK Corp. cannot accept liability to any damage which may occur in case these AUK Corp. products were used in the mentioned equipments without prior consultation with AUK Corp..

Specifications mentioned in this publication are subject to change without notice.