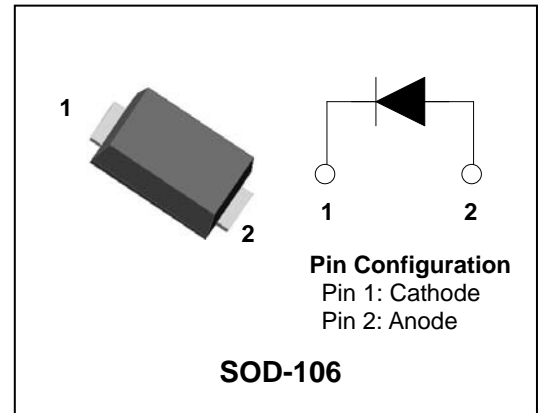


ULTRA FAST RECOVERY POWER RECTIFIER
Features

- Low forward voltage drop
- Ultrafast reverse recovery time : $t_{rr}(\text{Typ.}) = 20\text{ns}$
- High speed switching
- Low power loss and High efficiency
- Full lead (Pb)-free and RoHS compliant device

Applications

- General purpose
- Switching mode power supply
- Free-wheeling diode for motor application
- Power switching circuits
- DC-DC converter systems


Product Characteristics

$I_{F(AV)}$	3A
V_{RRM}	400V
$V_{FM} @ T_j=125^\circ\text{C}$	1.05V
$t_{rr}(\text{Typ.})$	20ns

Description

The SF3A400H is specially suited for switching mode base drive & transistor circuits. The device is also intended for use as a freewheeling diode in power supplies and other power switching applications.

Ordering Information

Device	Marking Code	Package
SF3A400H	3A4H	SOD-106

Marking Information


- 3A4H = Specific Device Code
- YWW = Year & Week Code Marking
 - . Y = Year Code
 - . WW = Week Code
- = Color band denote cathode

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	400	V
Maximum average forward rectified current	$I_{F(AV)}$	3	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	60	A
Storage temperature range	T_{stg}	-45 to +150	°C
Maximum operating junction temperature	T_J	150	°C

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to ambient	$R_{th(j-a)}$	76	°C/W

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 3A$	$T_J = 25^\circ C$	-	-	1.30	V
			$T_J = 125^\circ C$	-	-	1.05	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_R = V_{RRM}$	$T_J = 25^\circ C$	-	-	5	uA
			$T_J = 125^\circ C$	-	-	200	uA
Reverse recovery time	t_{rr}	$I_F = 0.5A, di/dt = -100 A/us$	-	20	30	ns	
Junction capacitance	C_j	$V_R = 4V_{DC}, f=1MHz$	-	40	100	pF	

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

Rating & Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics

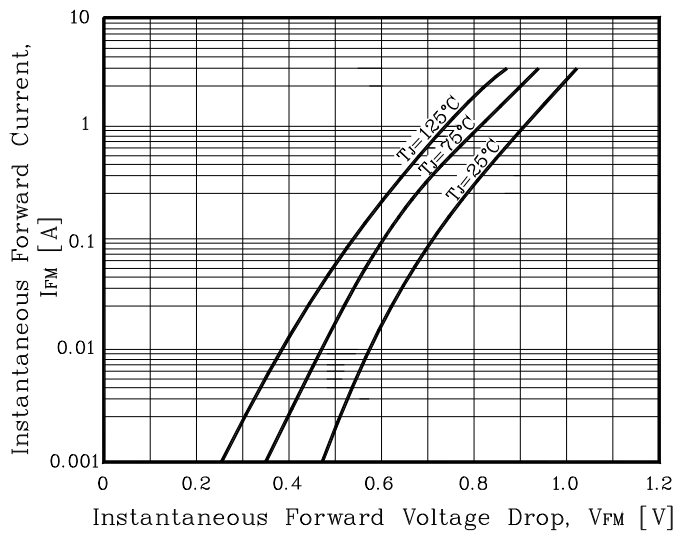


Fig. 2) Typical Reverse Characteristics

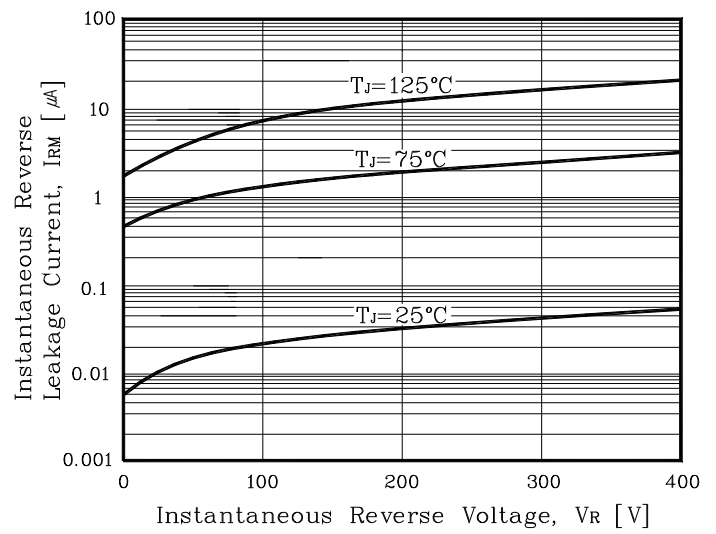


Fig. 3) Maximum Forward Derivative Curve

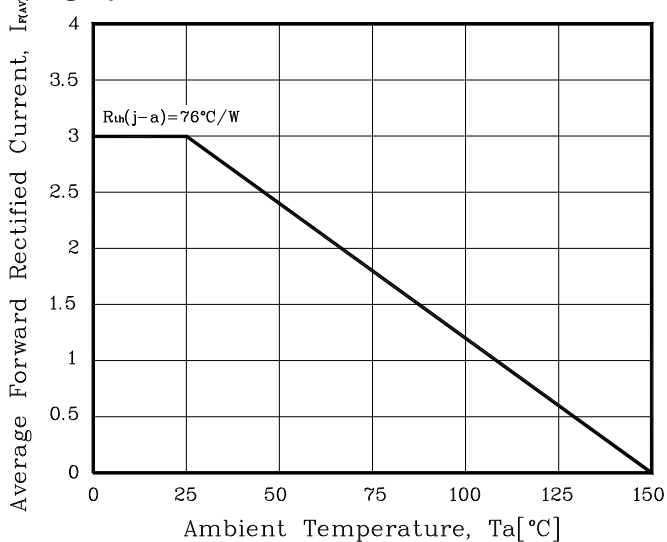


Fig. 4) Forward Power Dissipation

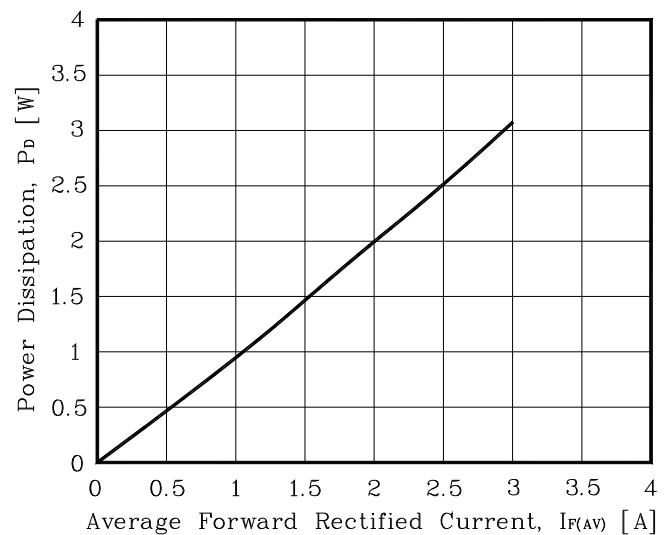


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

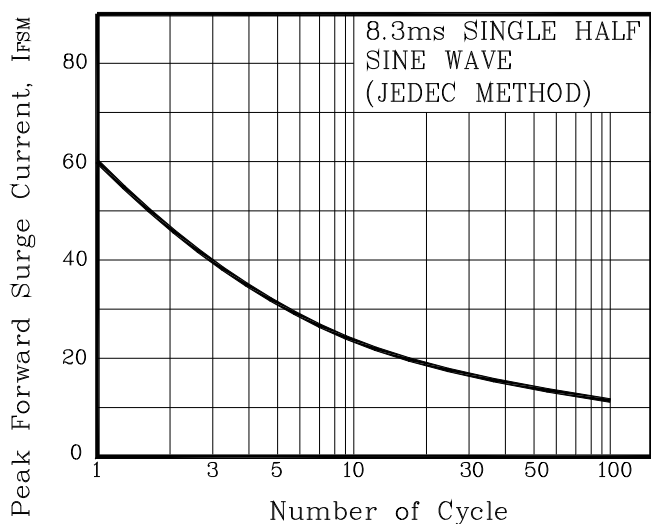
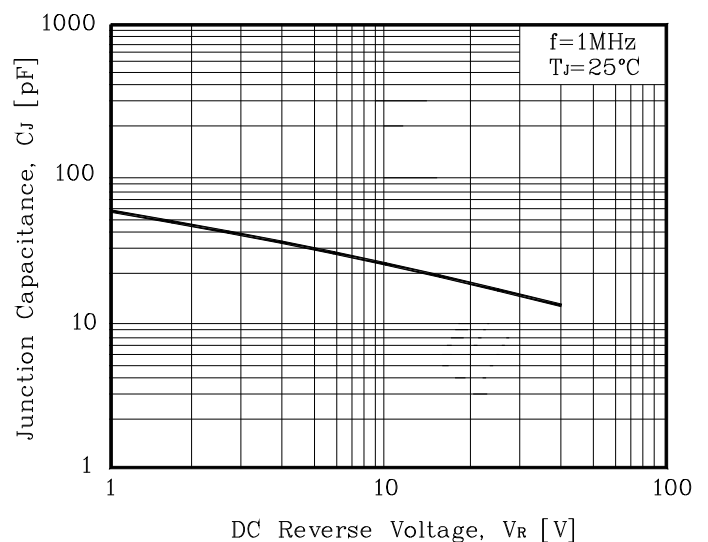
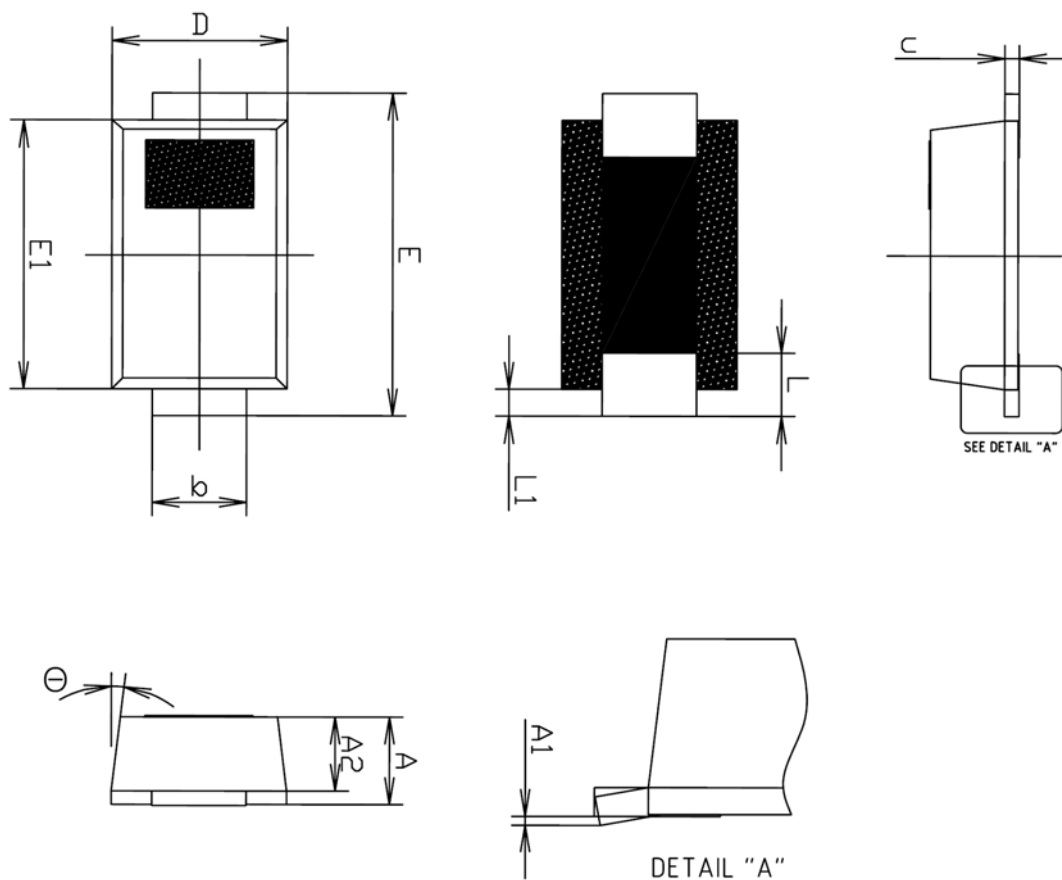


Fig. 6) Typical Junction Capacitance

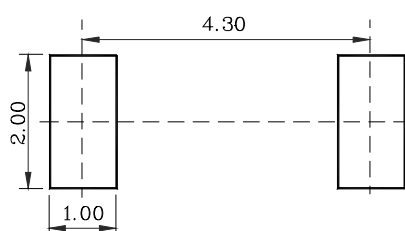


Package Outline Dimension (Unit: mm)



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	1.25	1.30	1.35	
A1	0.00	—	0.10	
A2	1.05	1.10	1.15	
b	1.35	1.42	1.49	
c	0.17	0.22	0.27	
D	2.50	2.60	2.70	
E	4.60	4.80	5.00	
E1	3.90	4.00	4.10	
L	0.79	0.94	1.09	
L1	0.30	0.40	0.50	
Θ	4°	—	10°	

※ Recommend PCB solder land (Unit: mm)



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.