

600V, 10A ULTRAFast RECOVERY RECTIFIERS

Features

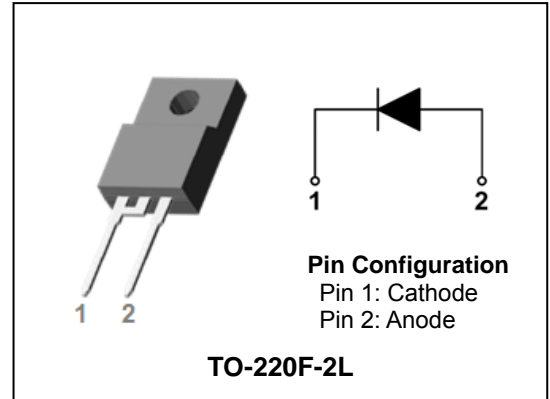
- High voltage and high reliability
- Ultrafast reverse recovery time
- High speed switching
- Low power loss and High efficiency
- Full lead (Pb)-free and RoHS compliant device

Applications

- Switching power supply
- Power inverters
- Free-wheeling diode
- Power conversion system
- Motor drives

Description

The SF10A600H is an ultrafast rectifier. It has a low forward voltage drop and reverse recovery time ($t_{rr} < 35\text{ns}$). The device is intended for use as a free wheeling, clamping rectifier in a variety of switching power supplies and other power switching applications.



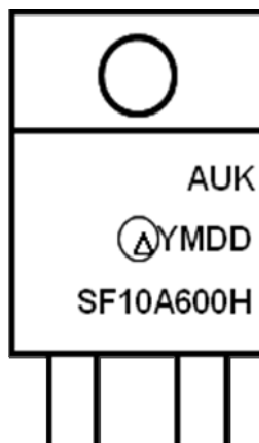
Product Characteristics

$I_{F(AV)}$	10A
V_{RRM}	600V
$V_{FM} @ T_j=125^\circ\text{C}$	1.68V
t_{rr}	35ns

Ordering Information

Device	Marking Code	Package	Packaging
SF10A600H	SF10A600H	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

SF10A600H = 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	600	V
Maximum average forward rectified current	$I_{F(AV)}$	10	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°C to +150°C	°C
Maximum operating junction temperature	T_j	150	°C

Thermal Characteristics

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

Electrical Characteristics (Per Diode)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 10A$	$T_j = 25^\circ C$	-	-	1.90	V
			$T_j = 125^\circ C$	-	-	1.68	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_R = V_{RRM}$	$T_j = 25^\circ C$	-	-	20	uA
			$T_j = 125^\circ C$	-	-	200	uA
Reverse recovery time	t_{rr}	$I_F = 1A, di/dt = -100 A/us$	-	-	35	ns	
Junction capacitance	C_j	$V_R = 4V_{DC}, f=1MHz$	-	70	-	pF	

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

Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

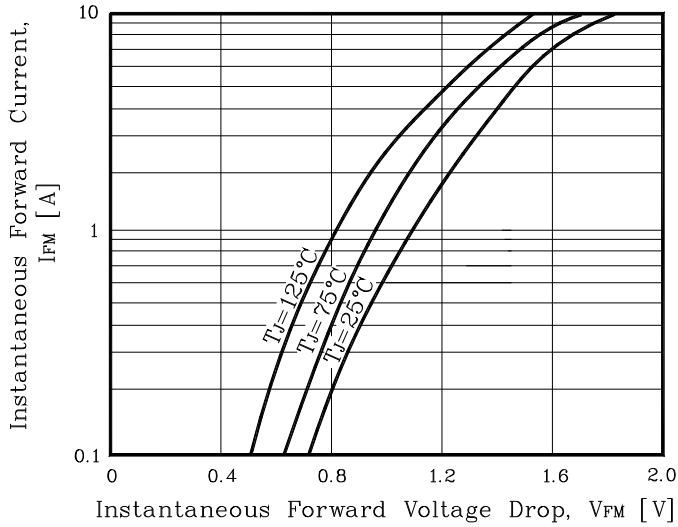


Fig. 2) Typical Reverse Characteristics

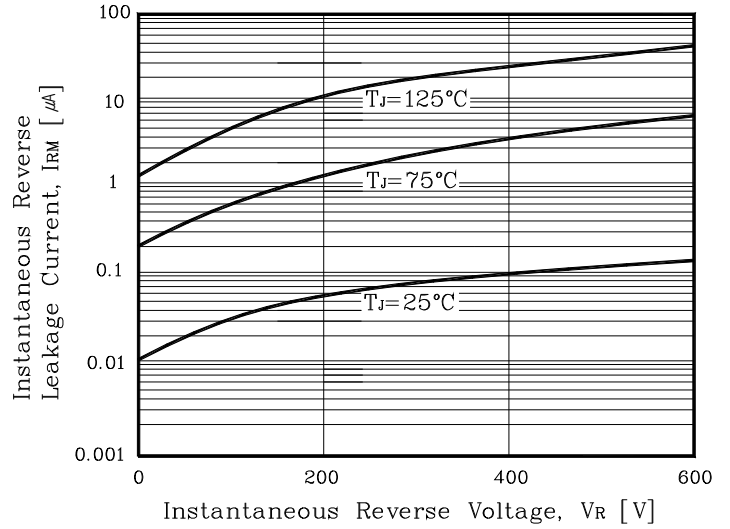


Fig. 3) Maximum Forward Derivative Curve

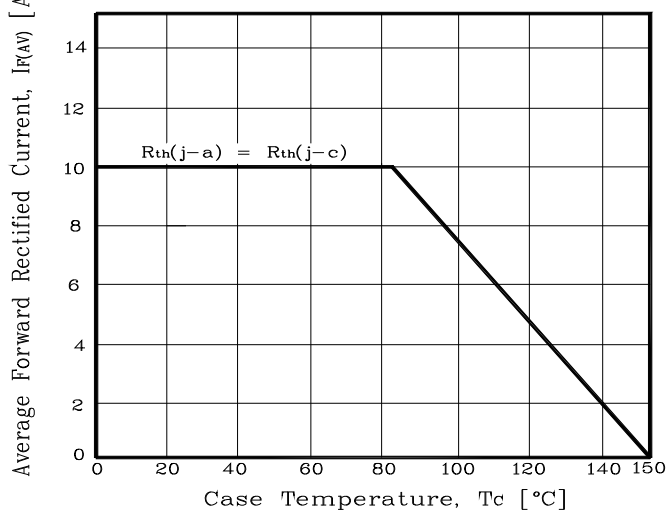


Fig. 4) Forward Power Dissipation

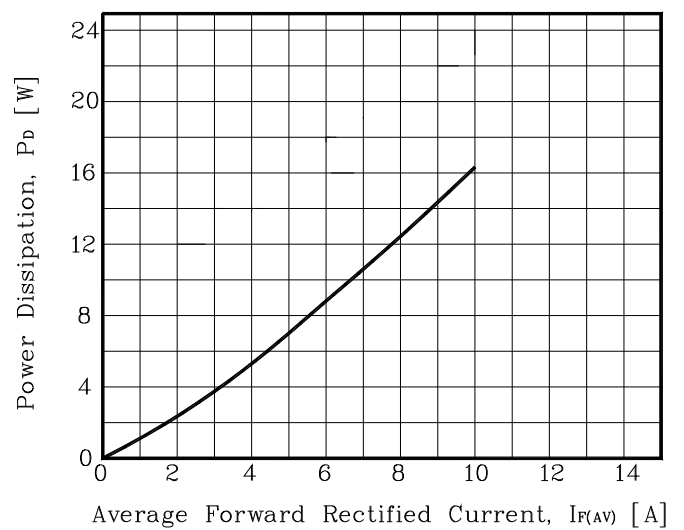


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

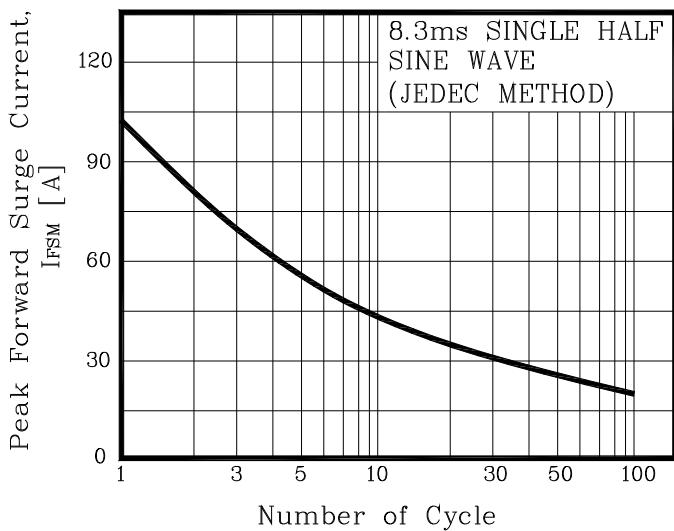
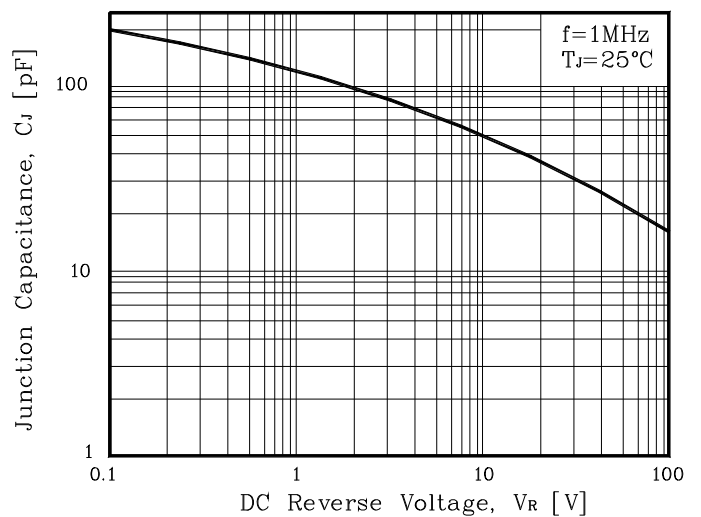
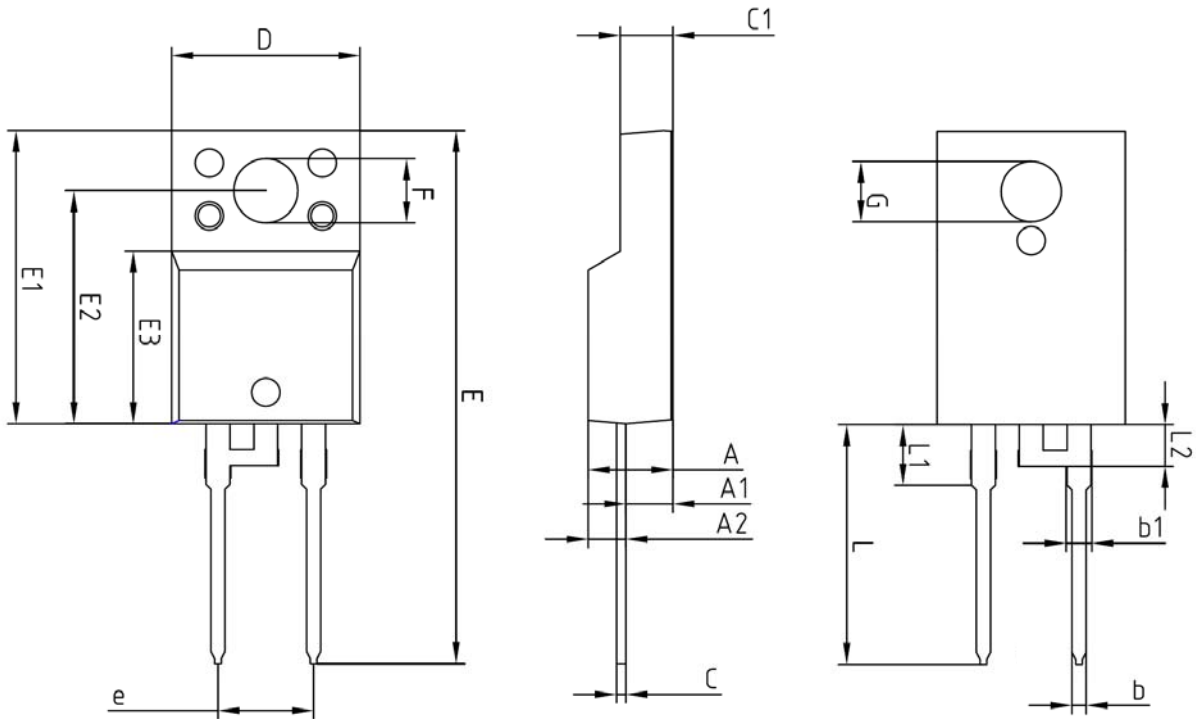


Fig. 6) Typical Junction Capacitance



Package Outline Dimension



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 KODENSHIAUK 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 KODENSHIAUK 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.). KODENSHIAUK Corp. cannot accept liability to any damage which may occur in case these KODENSHIAUK Corp. products were used in the mentioned equipments without prior consultation with KODENSHIAUK Corp..

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