

Ultrafast Recovery Power Rectifier

General Description

The SFN10A400 is ideally as boost diode in discontinuous or critical mode power factor corrections. The planar structure and the platinum doper life time control guarantee the best overall performance, ruggedness reliability characteristics. The device is also intended for use as a freewheeling diode in power supplies and other power switching applications.


TO-220F-2L

Features and Benefits

- Low forward drop voltage
- Ultrafast recovery time and high speed switching
- Full lead (Pb)-free device and RoHS compliant device

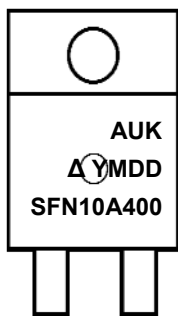
Applications

- Switching power supply
- Power inverters
- Power conversion system

Ordering Information


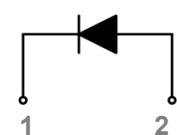
Part Number	Marking Code	Package	Packaging
SFN10A400	SFN10A400	TO-220F-2L	Tube

Marking Information



AUK = Manufacture Logo
Δ = Control Code of Manufacture
YMDD = Date Code Marking
 -. Y = Year Code
 -. M = Monthly Code
 -. DD = Daily Code
SFN10A400 = Specific Device Code

Pinning Information

Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode		
2	Anode		

Absolute Maximum Ratings (Limiting values at 25°C, unless otherwise specified)

Characteristic	Symbol	Ratings	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	$I_{F(AV)}$	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per 1 chip	I_{FSM}	120	A
Storage temperature range	T_{stg}	-45 to +150	°C
Maximum operating junction temperature	T_J	150	

Thermal Characteristics

Characteristic	Symbol	Ratings	Unit
Maximum thermal resistance	$R_{th(j-c)}$	4	°C/W
	$R_{th(j-a)}$	62.5	

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 10A$	$T_j = 25^\circ C$	-	1.15	1.4	V
			$T_j = 125^\circ C$	-	-	1.2	
Reverse leakage current	I_{RM}	$V_R = V_{RRM}$	$T_j = 25^\circ C$	-	-	5	uA
			$T_j = 125^\circ C$	-	-	200	
Reverse recovery time	t_{rr}	$I_F = 1A, di/dt = -100 A/us$	-	21	25	ns	
Junction capacitance	C_j	$V_R = 10V_{DC}, f=1MHz$	-	43	-	pF	

¹⁾ Pulse test: $t_p \leq 380us$, Duty cycle $\leq 2\%$

Rating and Electrical Characteristics Curves

Fig. 1) Typical Forward Characteristics

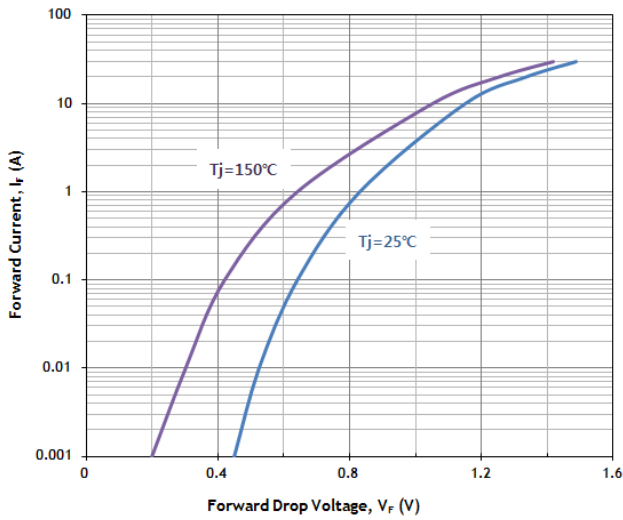


Fig. 2) Typical Reverse Characteristics

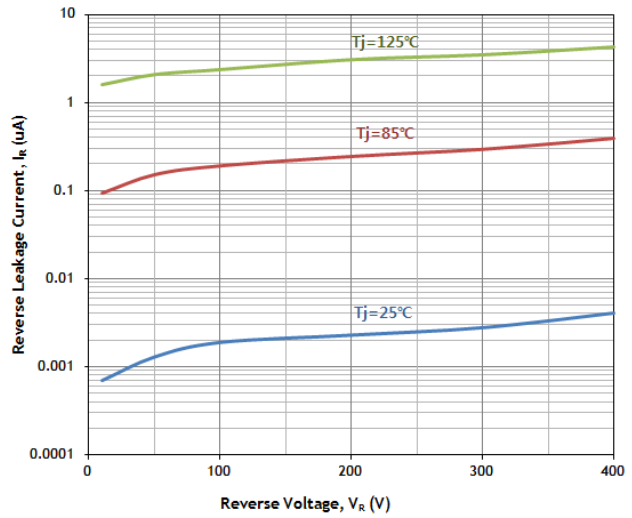


Fig. 3) Typical Junction Capacitance Characteristics

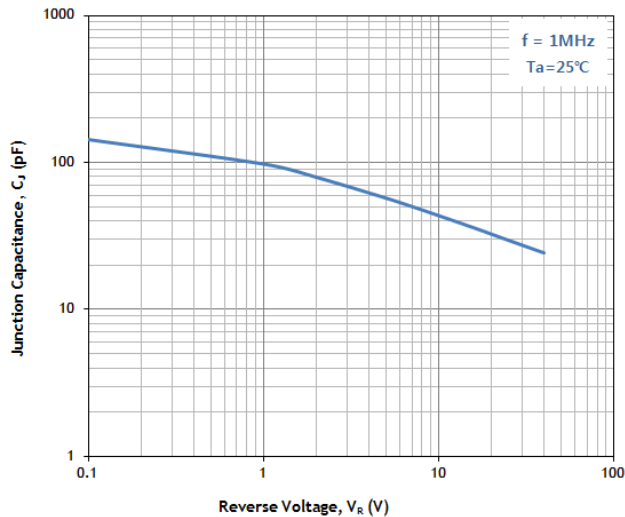


Fig. 4) Peak Forward Surge Current Characteristics

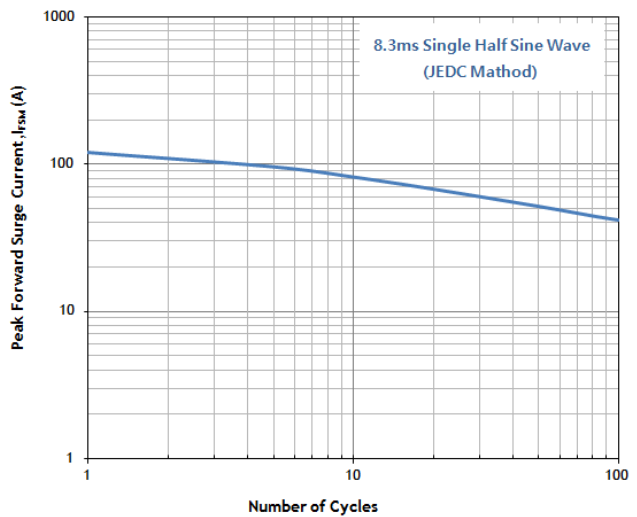


Fig. 5) Thermal Impedance Characteristics

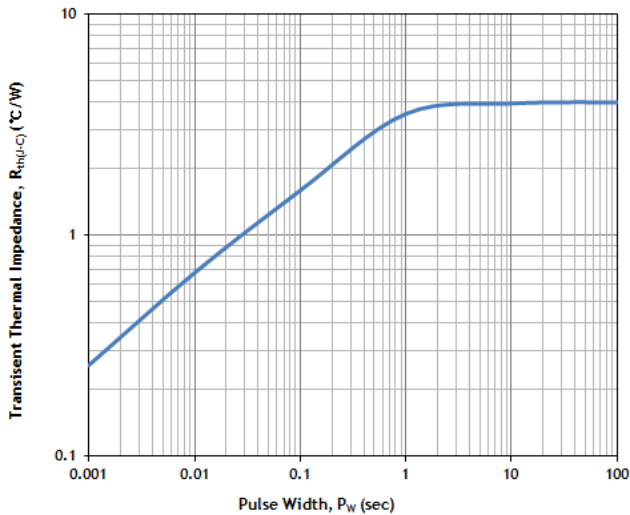
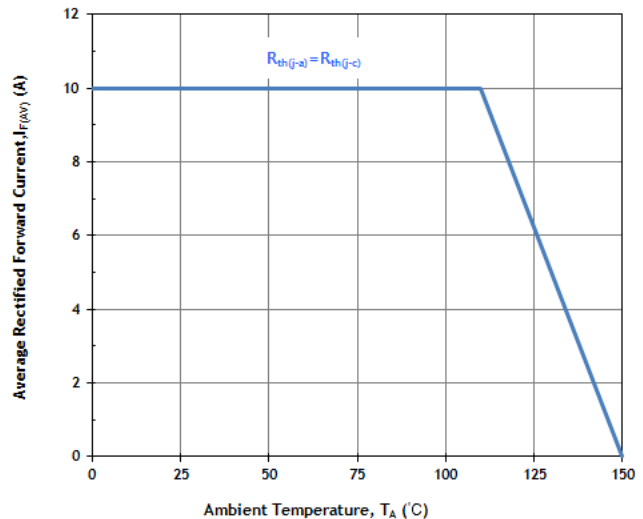
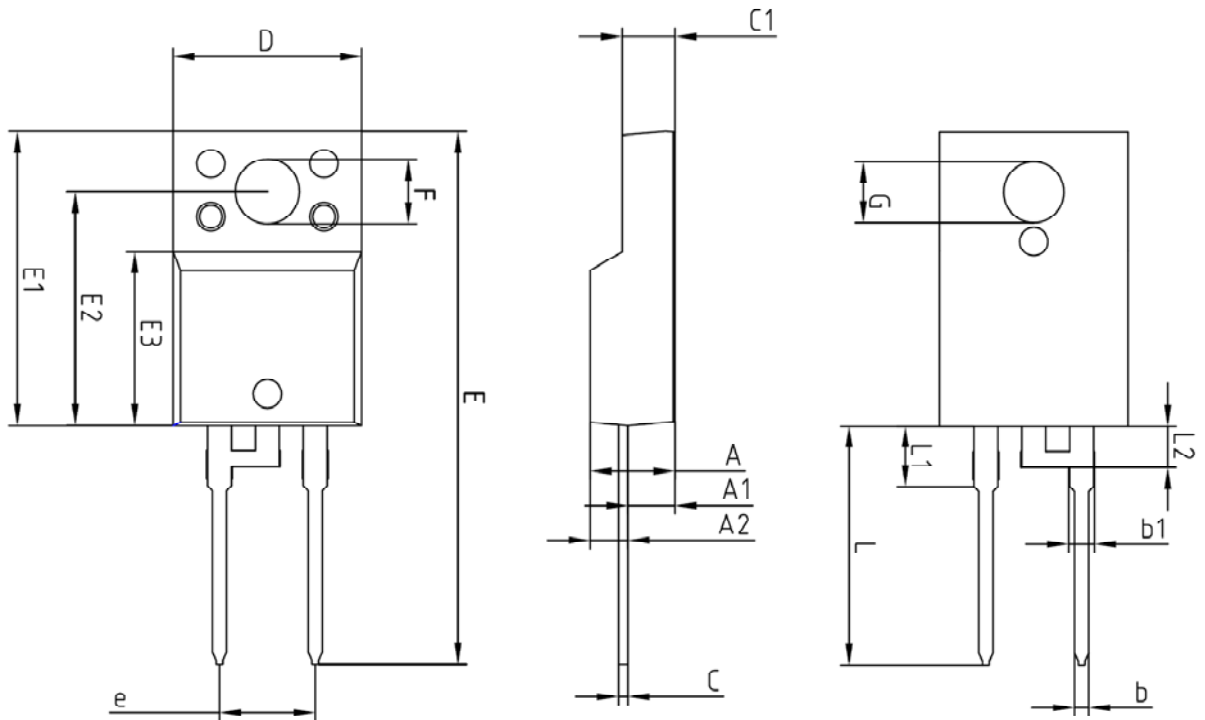


Fig. 6) Average Forward Current Characteristics



Package Outline Dimensions



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			

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