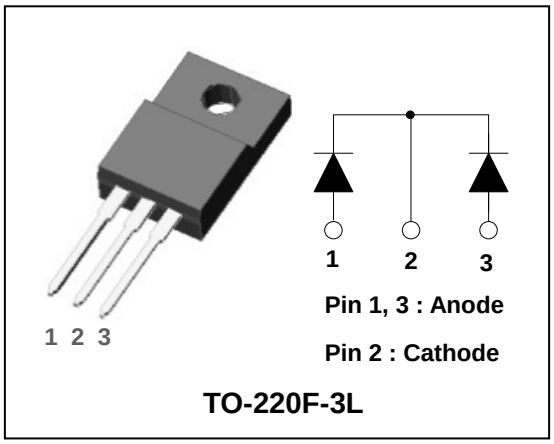
400V, 20A ULTRAFAST DUAL RECTIFIERS

Features

- Low forward voltage drop and leakage current
- Ultrafast reverse recovery time (trr<30ns)
- Low power loss and high efficiency
- Dual common cathode rectifier construction
- Full lead (Pb)-free and RoHS compliant device



TO-220F-3L

Applications

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

Product Characteristics

$I_{F(AV)}$	2 X 10A
V_{RRM}	400V
V_{FM} at 125℃	1.25V
t_{rr}	30ns

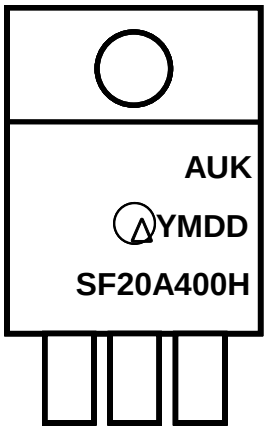
Description

The SF20A400HPI is an ultrafast rectifier. It has a low forward voltage drop and reverse recovery time (trr<30ns). The device is intended for use as a free wheeling, clamping rectifier in a variety of switching power supplies and other power switching applications.

Ordering Information

Device	Marking Code	Package	Packaging
SF20A400HPI	SF20A400H	TO-220F-3L	Tube

Marking Information



AUK = Manufacture Logo

Δ = Control Code of Manufacture

YMDD = Date Code Marking

-. Y = Year Code

-. M = Monthly Code

-. DD = Daily Code

SF20A400H = 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	400	V
Maximum average forward rectified current	per diode	$I_{F(AV)}$	10	A
	total device		20	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode		I_{FSM}	120	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	per diode	$R_{th(j-c)}$	4.0	℃/W
	total device		3.6	

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℃	-	-	1.40	V
			T_j=125℃	-	-	1.25	V
Reverse leakage current	I_{RM} (1)	$V_R = V_{RRM}$	T_j=25℃	-	-	20	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 = 10V_{DC}, f=1MHz		-	65	-	pF

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

Rating & Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics (Per diode)

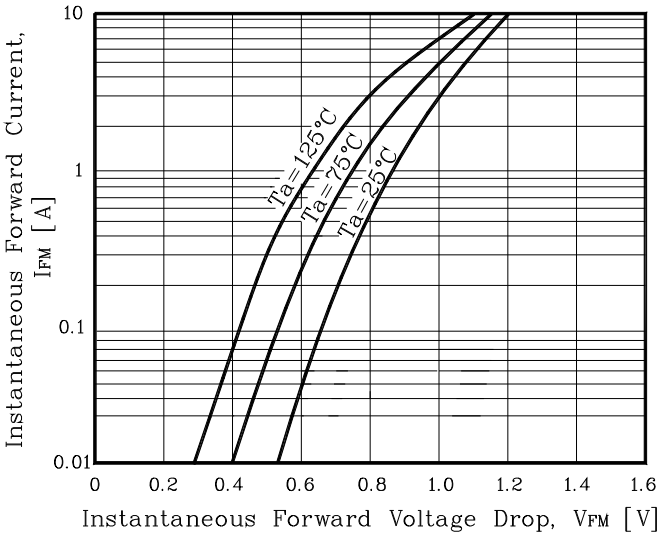


Fig. 2) Typical Reverse Characteristics (Per diode)

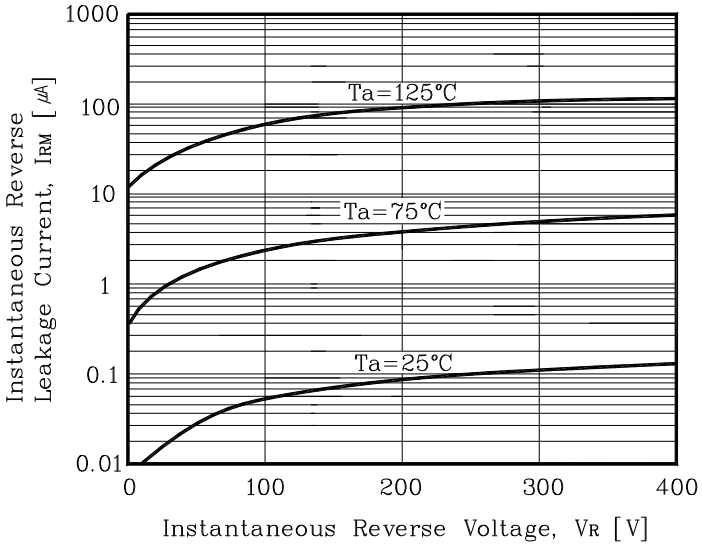


Fig. 3) Maximum Forward Derative Curve

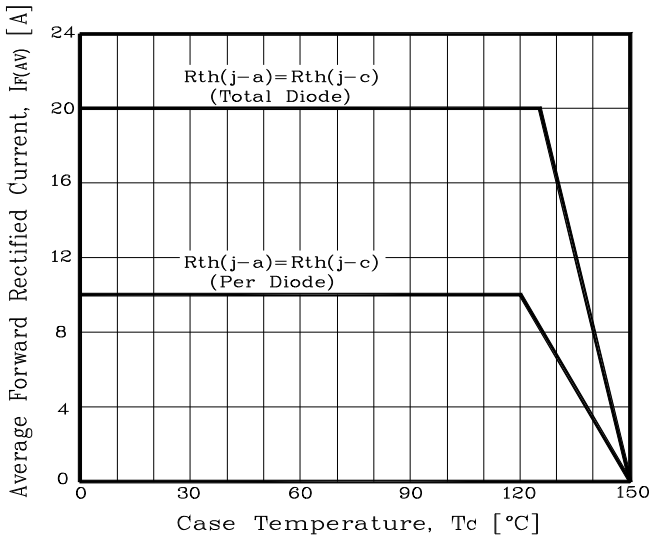


Fig. 4) Forward Power Dissipation (Per diode)

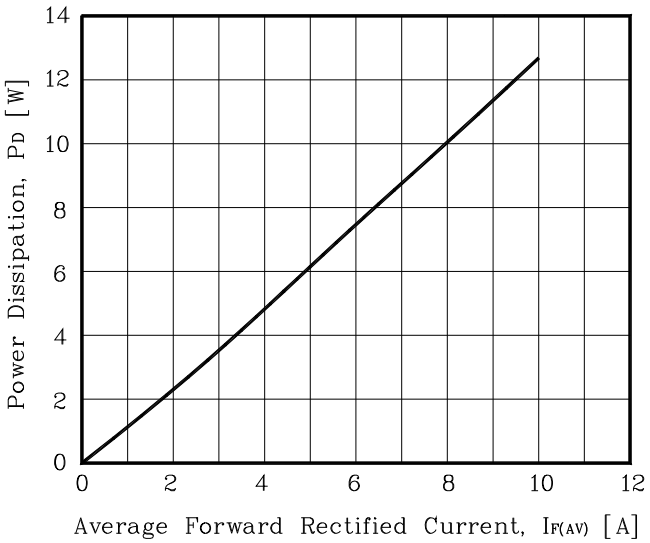


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current (Per diode)

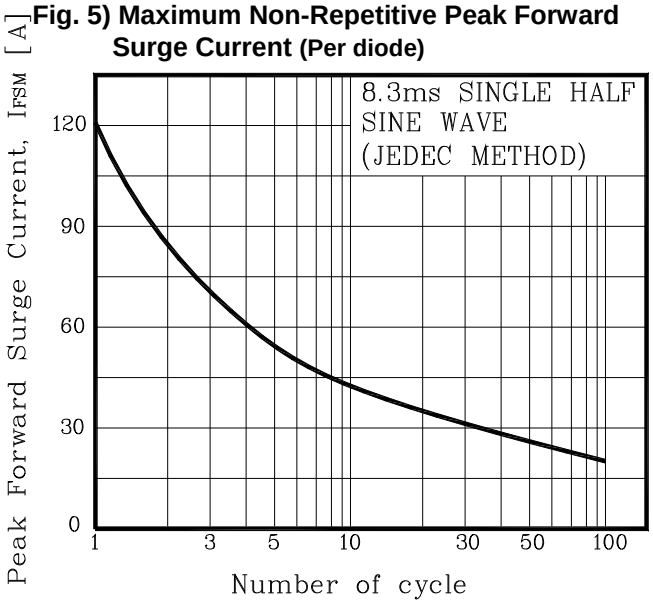
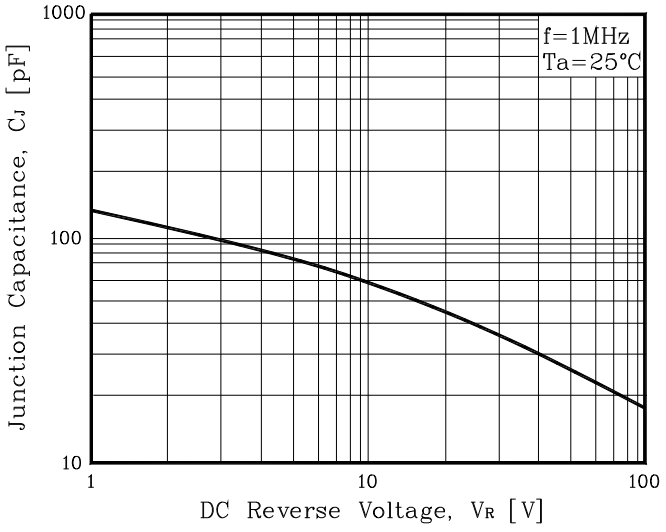
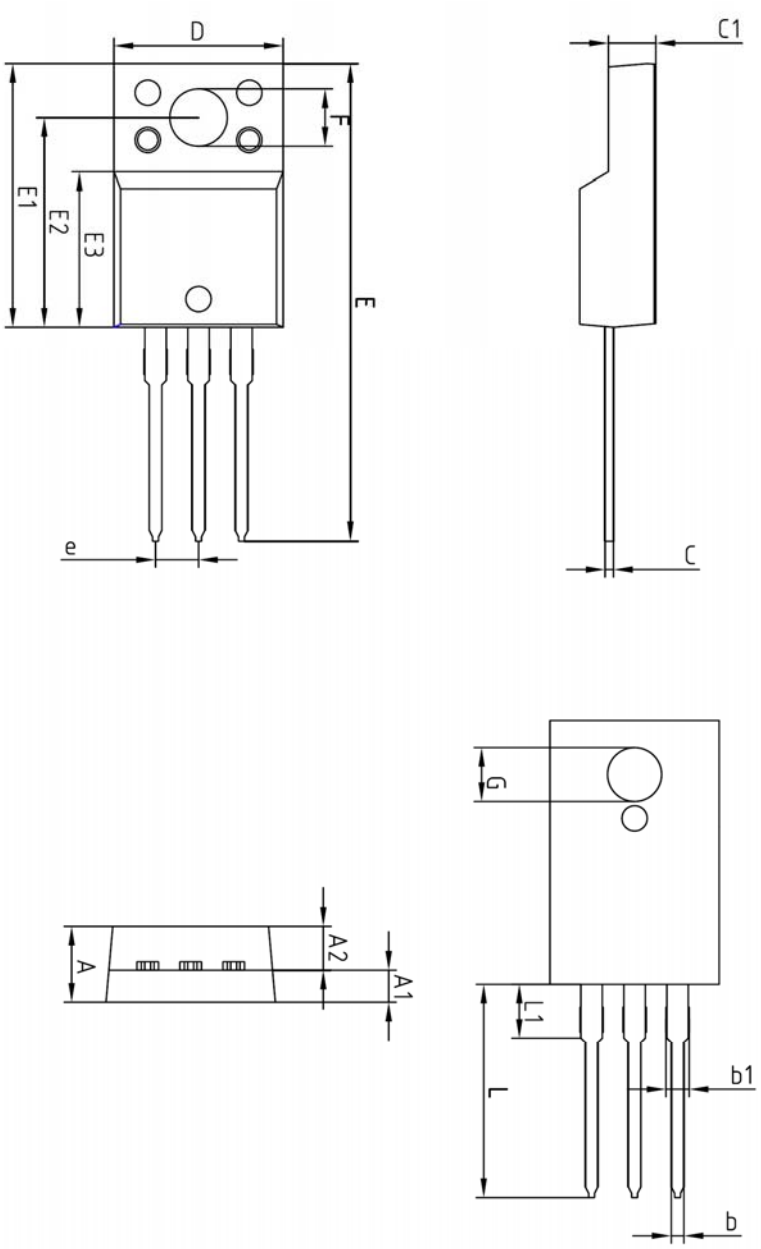


Fig. 6) Typical Junction Capacitance (Per diode)



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	2.54 BSC			
L	12.40	–	13.00	
L1	3.46 BSC			

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