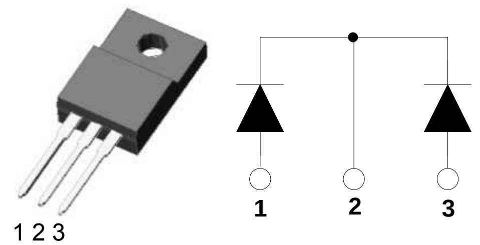
KODENSHI AUK

SF10A400HPI

Ultrafast Recovery Rectifier

400V, 10A ULTRAFAST DUAL RECTIFIERS



Pin : 1, 3 : Anode

Pin 2 : Cathode

TO-220F-3L

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

Applications

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

Product Characteristics

$I_{F(AV)}$	2 X 5A
V_{RRM}	400V
V_{FM} @ Tj=125℃	1.2V
t_{rr}	30ns

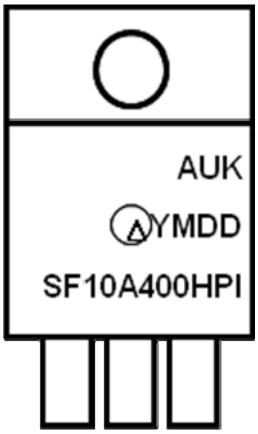
Description

The SF10A400HPI 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
SF10A400HPI	SF10A400HPI	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
SF10A400HPI = 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	$I_{F(AV)}$	5	A
	total device		10	
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	per diode	$R_{th(j-c)}$	5	℃/W
	total device		4.6	

Electrical Characteristics

Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Peak forward voltage drop	V_{FM} (1)	I_{FM} = 5A	T_j=25℃	-	-	1.40	V
			T_j=125℃	-	-	1.20	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 = 4V_{DC}, f=1MHz		-	50	-	pF

Note : (1) Pulse test : t_P≤380 μs, Duty cycle≤2%

Electrical Characteristic Curves

Fig.1 I_F - V_F (Per Diode)

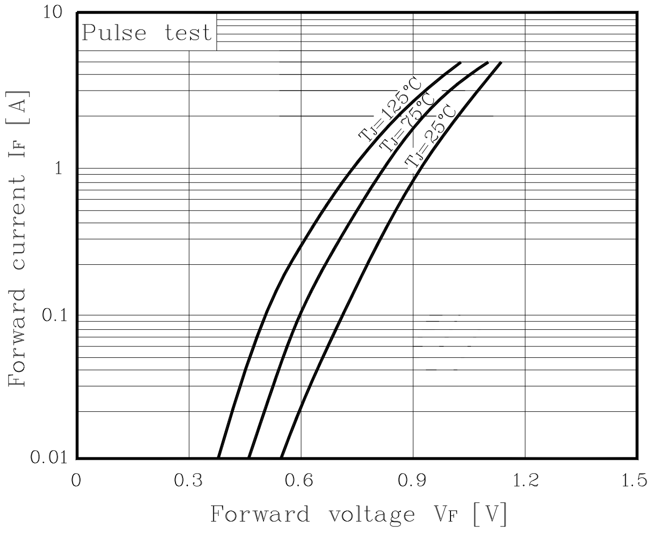


Fig. 2 I_R - V_R (Per Diode)

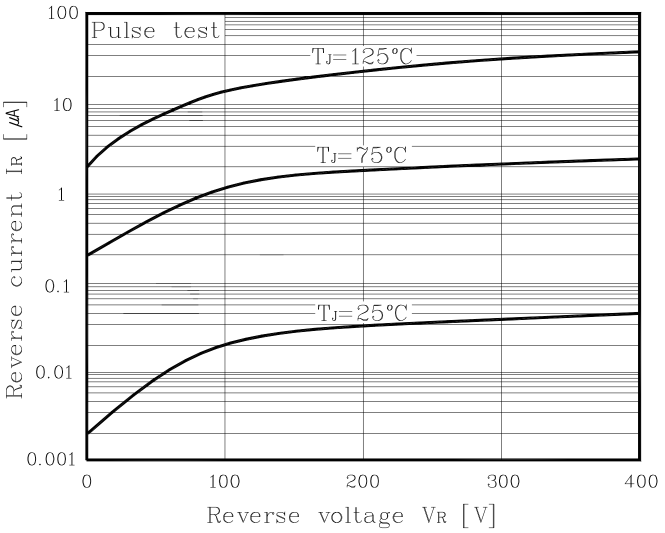


Fig. 3 P_F - I_O (Per Diode)

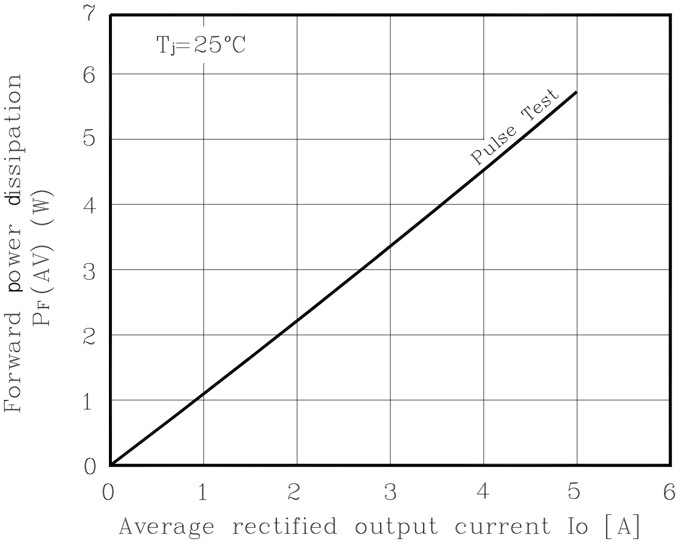


Fig. 4 C_T - V_R (Per Diode)

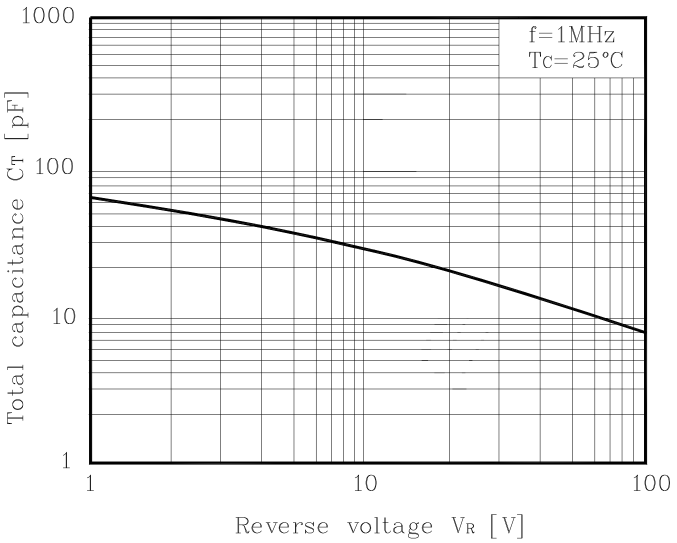


Fig. 5 I_{FSM} – Number of cycle (Per Diode)

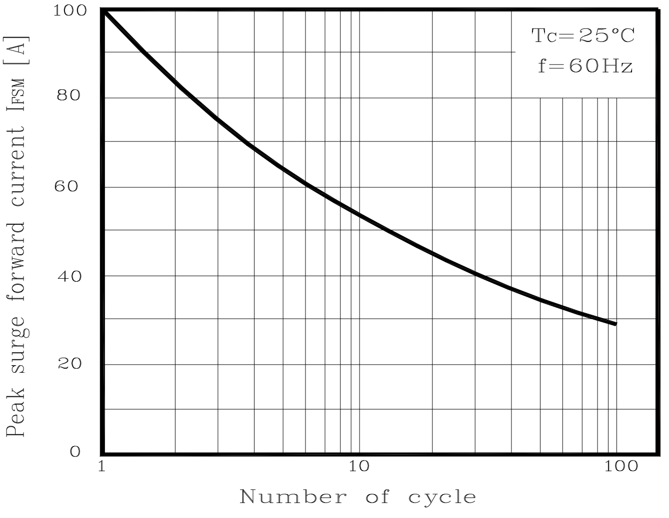
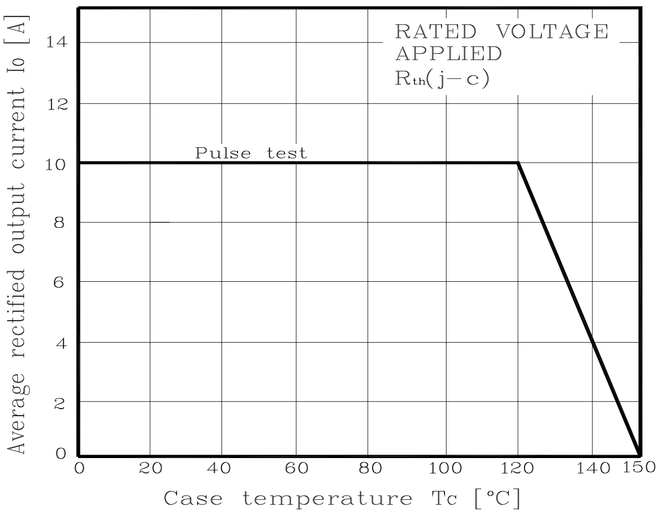
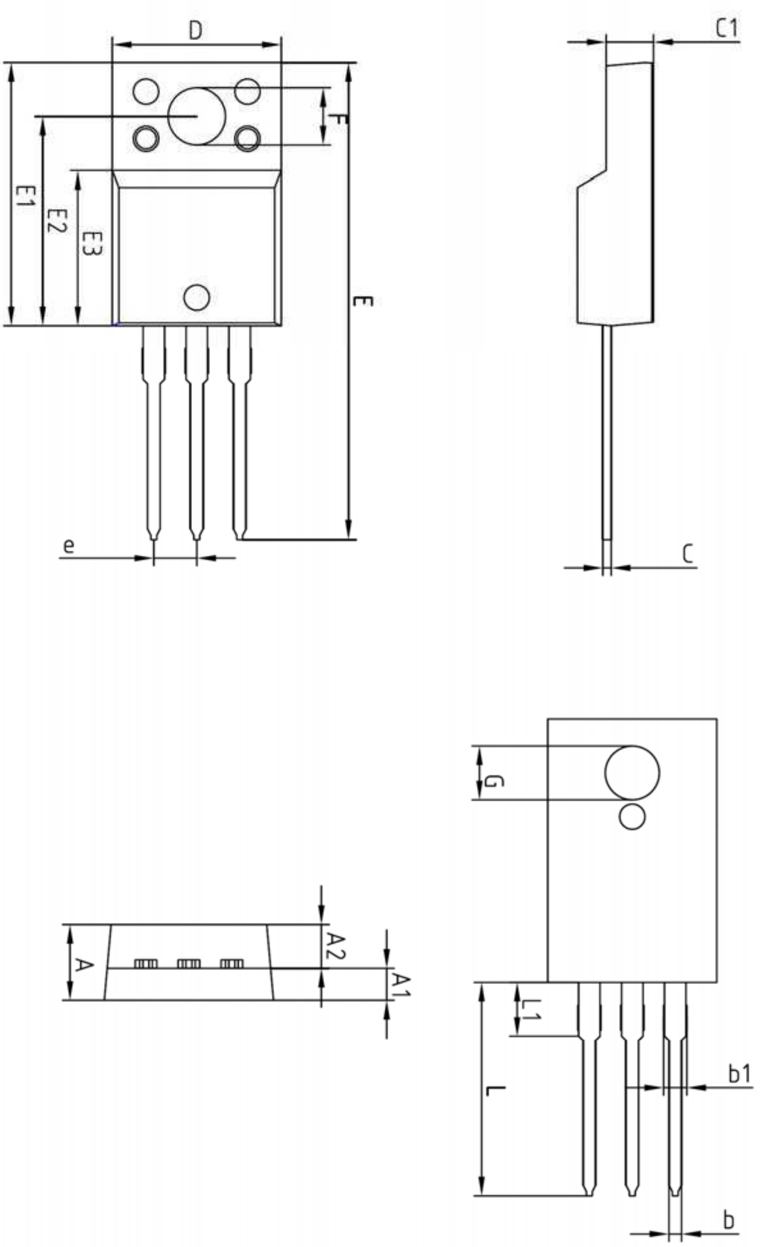


Fig. 6 I_O derating - T_C (Total)



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			