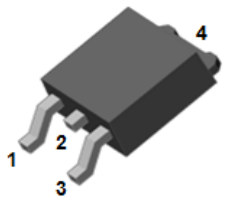
ULTRA FAST RECOVERY POWER RECTIFIER

Features

- High voltage and high reliability
- Ultrafast reverse recovery time
- High speed switching
- Low power loss and High efficiency
- Halogen-free component and RoHS compliant device



Pin Configuration
Pin 1, 3: Anode
Pin 2, 4: Cathode

TO-252

Applications

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

Product Characteristics

$I_{F(AV)}$	10A
V_{RRM}	400V
V_{FM} @ Tj=125℃	1.2V
t_{rr}	30ns

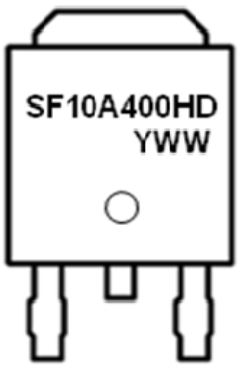
Description

The SF10A400HD is ideally as boost diode in discontinuous or critical mode power factor corrections. 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	Packaging
SF10A400HD	SF10A400HD	TO-252	Tape & Reel

Marking Information



SF10A400HD = Specific Device Code
YWW = Year & Week Code Marking
-. Y = Year Code
-. WW = Week 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	$I_{F(AV)}$	10	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	℃
Maximum operating junction temperature	T_J	150	

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Maximum thermal resistance	junction to case	$R_{th(j-c)}$	6.0	℃/W

Electrical Characteristics

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℃	-	-	1.20	
Reverse leakage current	I_{RM}	$V_R = V_{RRM}$	T_j=25℃	-	-	20	uA
			T_j=125℃	-	-	200	
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 : $t_P \leq 380$us, Duty cycle $\leq 2\%$

Electrical Characteristic Curves

Fig.1 I_F - V_F

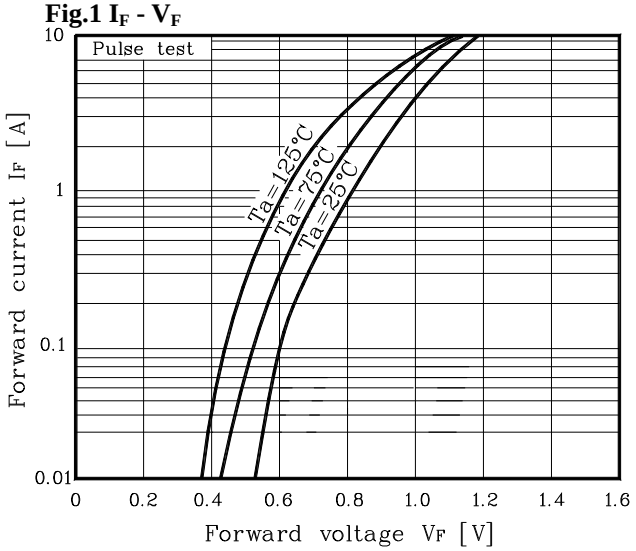


Fig. 2 I_R - V_R

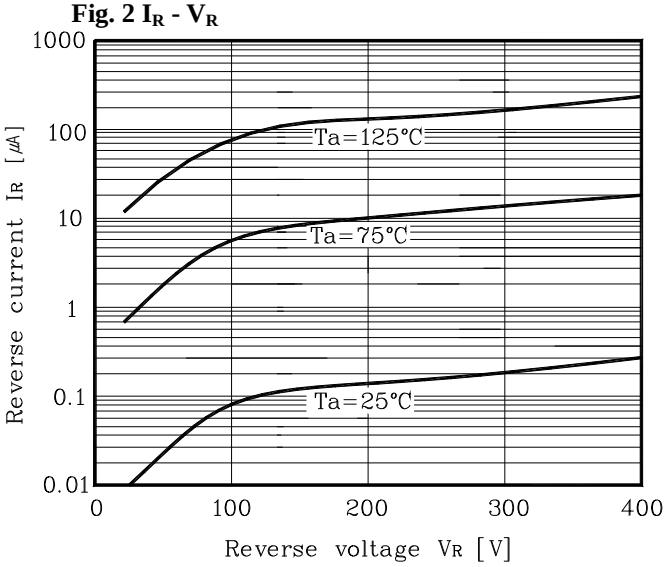


Fig. 3 P_F - I_O

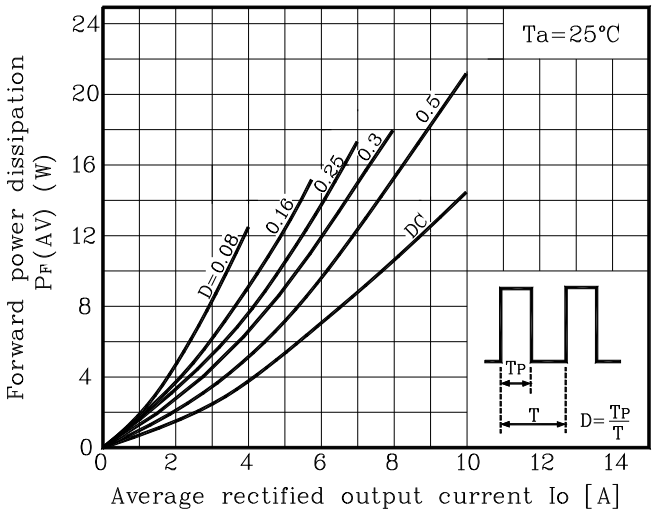


Fig. 4 C_T - V_R

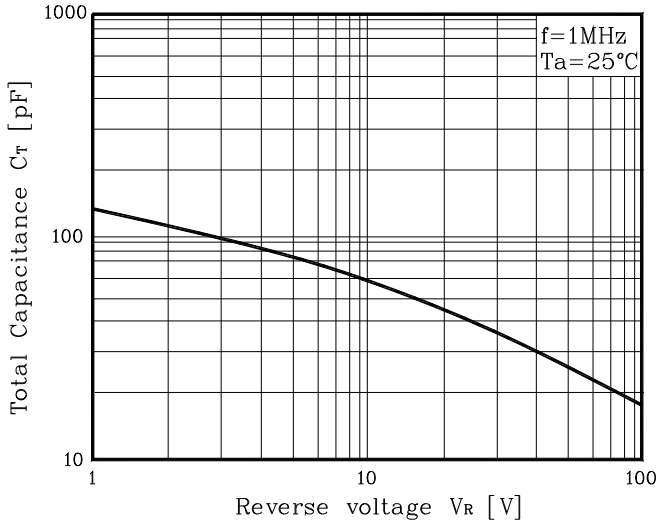


Fig. 5 I_{FSM} – Number of cycle

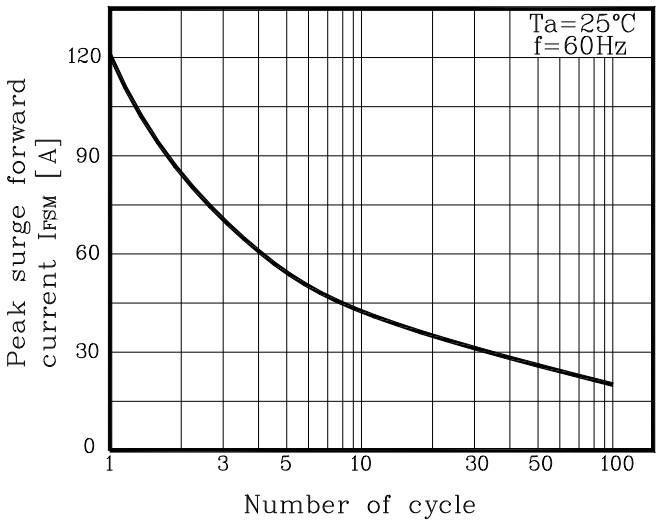
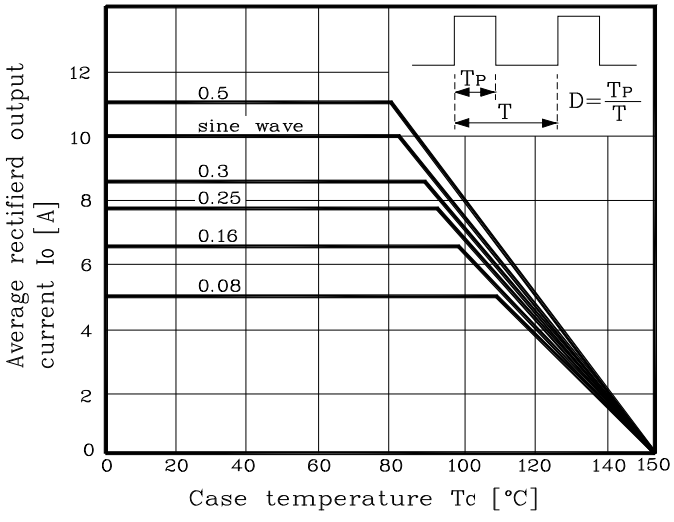
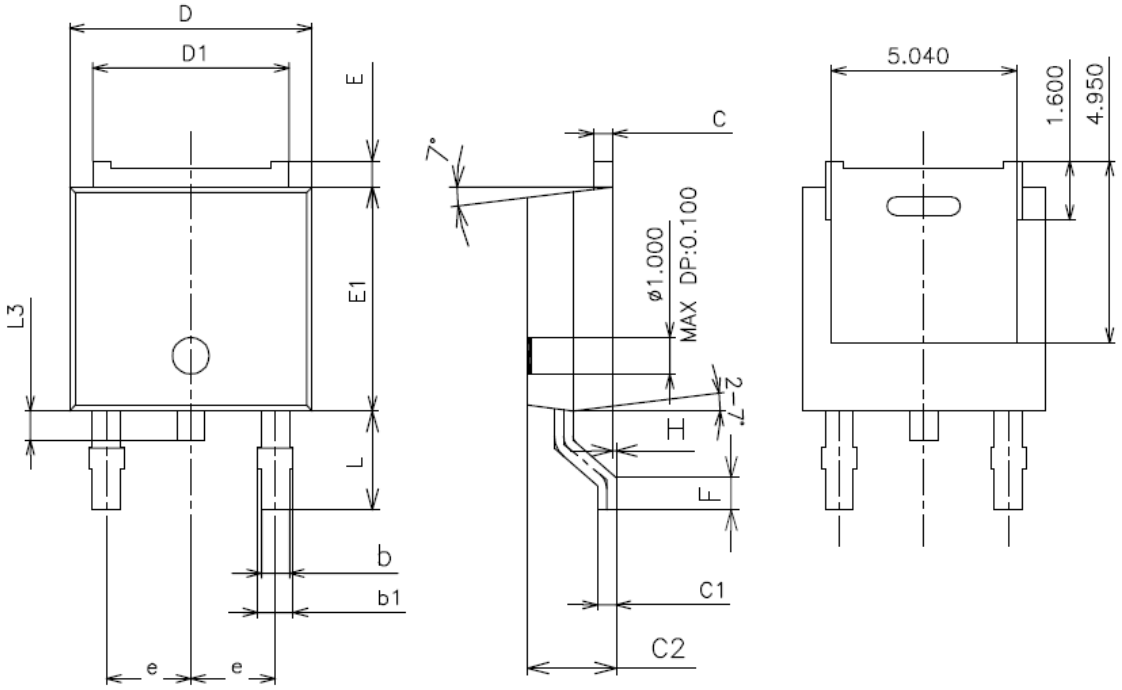
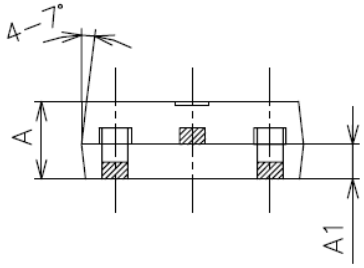


Fig. 6 I_O derating - T_C



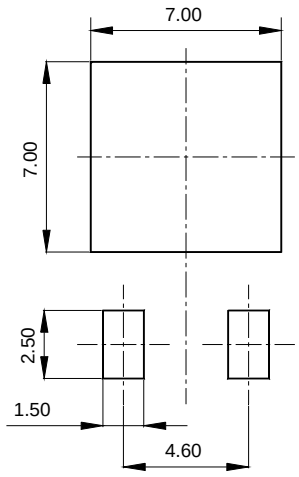
Package Outline Dimension (Unit: mm)





SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
D	6.40	6.60	6.80	
D1	5.14	5.34	5.54	
E	0.50	0.70	0.90	
E1	5.90	6.10	6.30	
A	2.20	2.30	2.40	
A1	0.87	1.07	1.27	
C	0.40	0.50	0.60	
C1	0.40	0.50	0.60	
C2	2.10	2.30	2.50	
L	2.50	2.70	2.90	
L3	0.60	0.80	1.00	
b	0.66	0.76	0.86	
b1	0.96 MAX			
e	2.10	2.30	2.50	
F	0.80 Min			
H	0	–	0.100	

※ Recommended Land Pattern (unit: mm]



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