

SF5A600HD

Ultrafast Recovery Rectifier

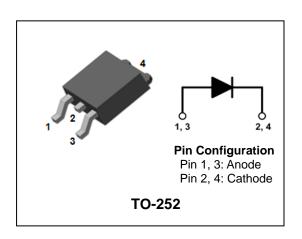
ULTRA FAST RECOVERY POWER RECTIFIER

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

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)}	5A
V_{RRM}	600V
V _{FM} @ Tj=125℃	1.75V
t _{rr}	30ns

Description

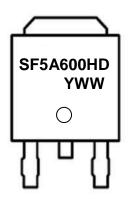
The SF5A600HD is ideally as boost diode in discontinuous or critical mode power factor corrections.

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
SF5A600HD	SF5A600HD	TO-252	Tape & Reel

Marking Information



SF5A600HD = Specific Device Code YWW = Year & Week Code Marking

-. Y = Year Code

-. WW = Week Code

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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)}	5	Α
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I _{FSM}	60	А
Storage temperature range	T _{stg}	-45℃ to +150℃	$^{\circ}$ C
Maximum operating junction temperature	TJ	150	$^{\circ}$ C

Thermal Characteristics

Characteri	Symbol	Value	Unit	
Maximum thermal resistance	junction to case	$R_{\text{th(j-c)}}$	6.0	°C/W

Electrical Characteristics

Characteristic	Symbol	Test Condition		Min.	Тур.	Max.	Unit
Peak forward voltage drap	eak forward voltage drop $V_{FM}^{\ (1)}$ I_{FM}	I - 5A	T _j =25 ℃	-	-	1.90	V
Peak forward voltage drop		$I_{FM} = 5A$	T _j =125℃	-	-	1.75	V
Reverse leakage current	I _{RM} ⁽¹⁾	$V_R = V_{RRM}$	T _j =25℃	-	ı	10	uA
			T _j =125℃	ı	ı	200	uA
Reverse recovery time	t _{rr}	I _F = 1A, di/dt =-100 A/us		-	-	30	ns
Junction capacitance	C _j	$V_R = 10V_{DC}$, $f=1MHz$		-	-	50	pF

Note : (1) Pulse test : $t_P \le 380~\mu\text{s}$, Duty cycle $\le 2\%$

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Rating & Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics

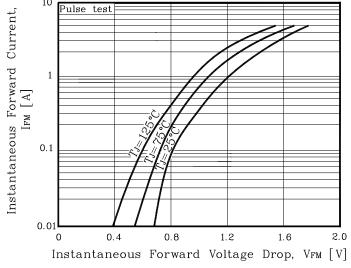


Fig. 2) Typical Reverse Characteristics

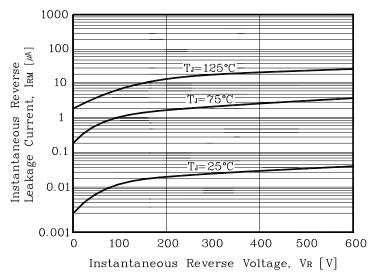


Fig. 3) Maximum Forward Derative Curve

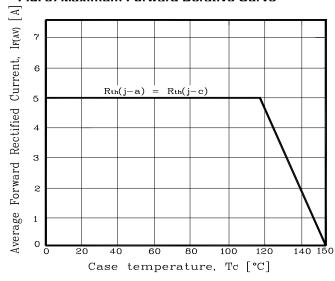


Fig. 4) Forward Power Dissipation

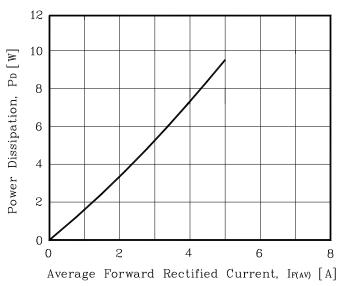


Fig. 5) Maximum Non-Repetitive Peak Forward **Surge Current**

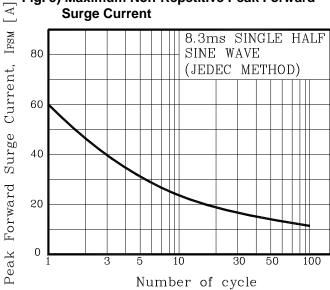
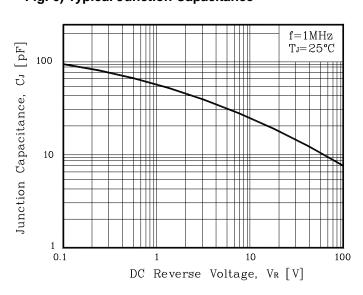
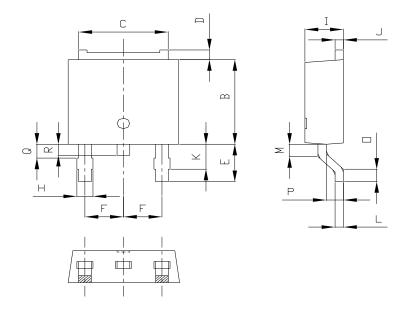


Fig. 6) Typical Junction Capacitance

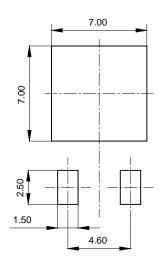


Package Outline Dimension



	1	NOTE		
SYMBOL	MINIMUM	NOMINAL	MAXIMUM	NOTE
А	6.40	6.60	6.80	
В	5.90	6.10	6.30	
C	5.04	5.34	5.64	
D	0.50	0.70	0.90	
Е	2.50	2.70	2.90	
F	2.10	2.30	2.50	
Н		0.96 MAX		
	2.20	2.30	2.40	
J	0.40	0.50	0.60	
K	1.60	1.80	2.00	
L	0.40	0.50	0.60	
М	0.81	0.91	1.01	
0	0.80	0.90	1.00	
Р	0.90	1.00	1.10	
Q		0.95 MAX		
R	161	181	1.00	

*** Recommended Land Pattern** (Unit: mm)



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