

ULTRAFast RECOVERY POWER RECTIFIER

Features

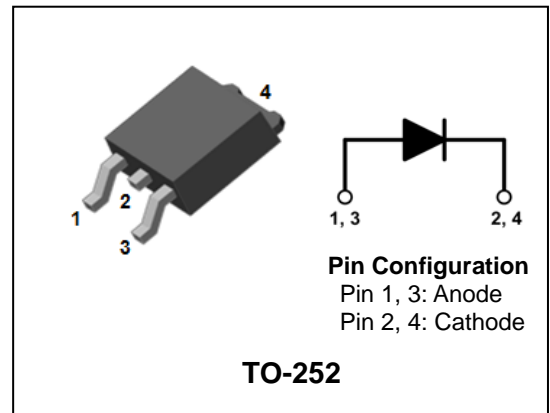
- Low forward voltage and leakage current
- Ultrafast reverse recovery time
- High speed switching
- Low power loss and High efficiency
- Halogen-free component and RoHS compliant device

Applications

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

Description

The SF5A200HD is specially suited for switching mode base drive and transistor circuits. This device is intended for use in low voltage, high frequency inverters, free wheeling and polarity protection.



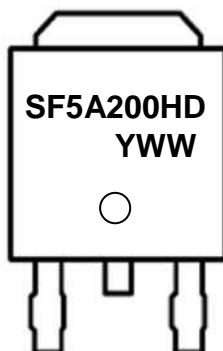
Product Characteristics

$I_{F(AV)}$	5A
V_{RRM}	200V
$V_{FM} @ T_j=125^\circ\text{C}$	0.83V
t_{rr}	30ns

Ordering Information

Device	Marking Code	Package	Packaging
SF5A200HD	SF5A200HD	TO-252	Tape & Reel

Marking Information



SF5A200HD = 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	200	V
Maximum average forward rectified current	$I_{F(AV)}$	5	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°C to +150°C	°C
Maximum operating junction temperature	T_J	150	°C

Thermal Characteristics

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

Electrical Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 5A$	$T_J = 25^\circ C$	-	-	0.98	V
			$T_J = 125^\circ C$	-	-	0.83	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_R = V_{RRM}$	$T_J = 25^\circ C$	-	-	10	uA
			$T_J = 125^\circ C$	-	-	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 : $t_p \leq 380 \mu s$, Duty cycle $\leq 2\%$

Rating & Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics

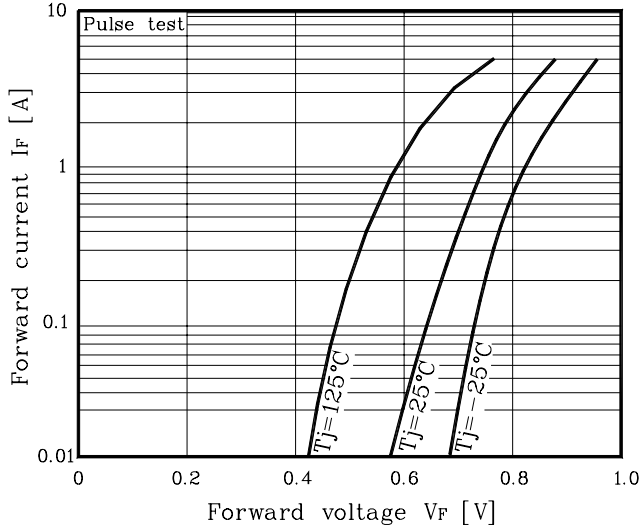


Fig. 2) Typical Reverse Characteristics

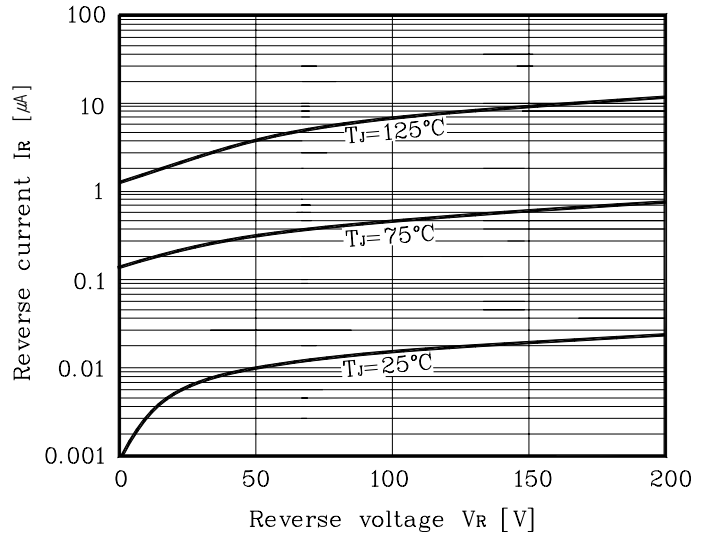


Fig. 3) Maximum Forward Derivative Curve

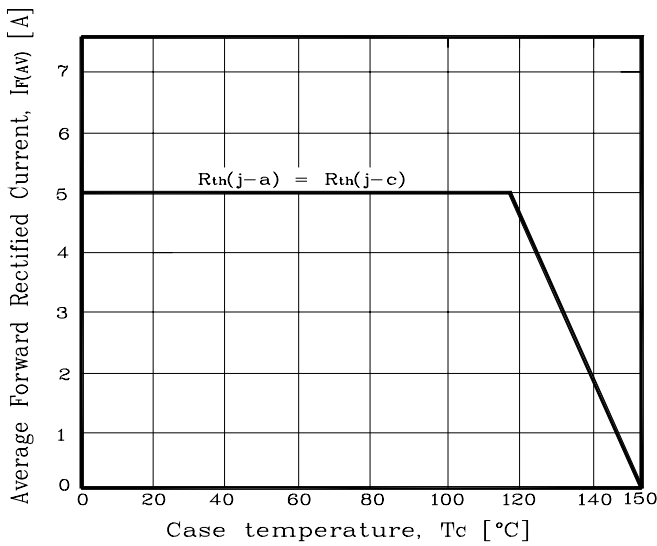


Fig. 4) Forward Power Dissipation

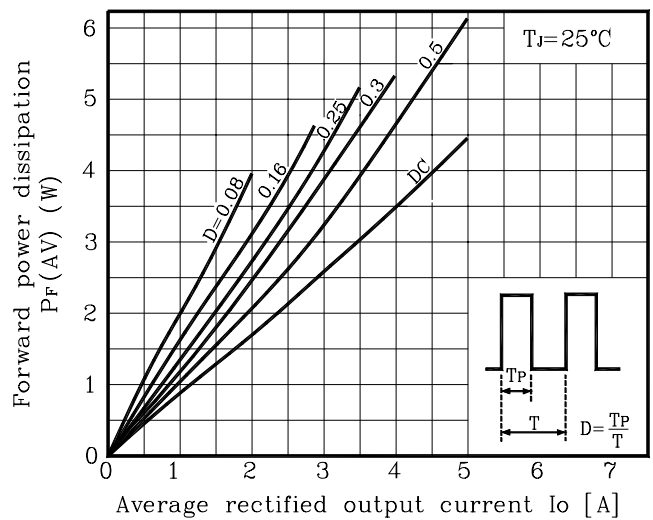


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

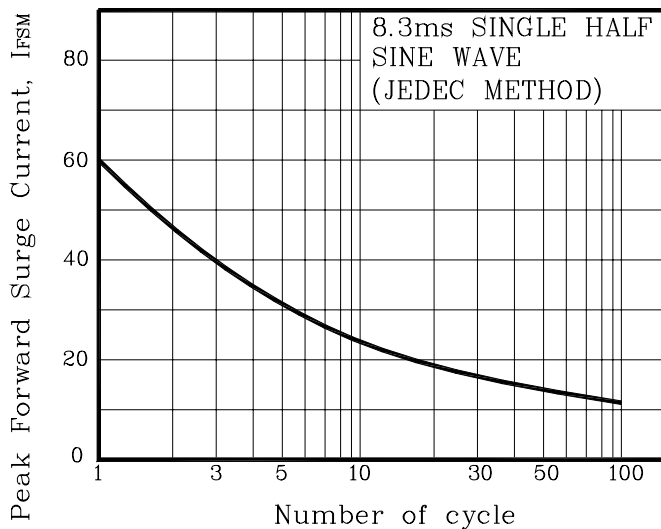
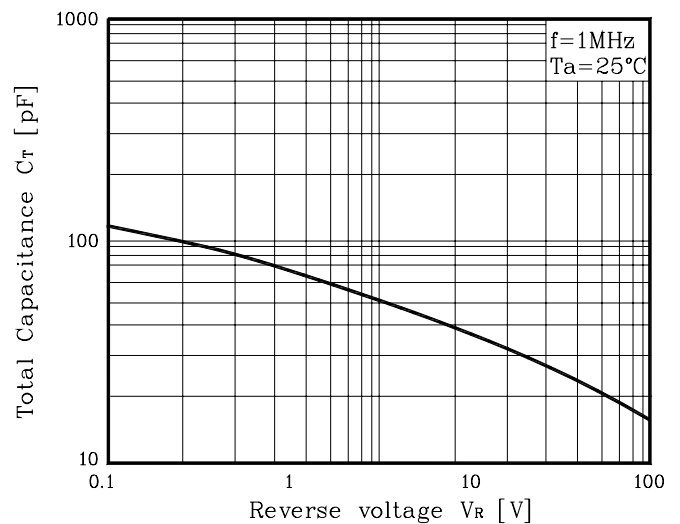
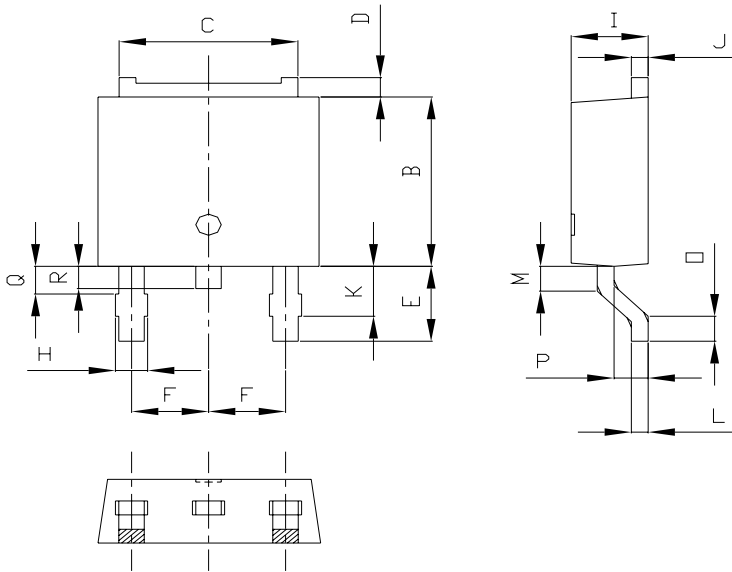


Fig. 6) Typical Junction Capacitance

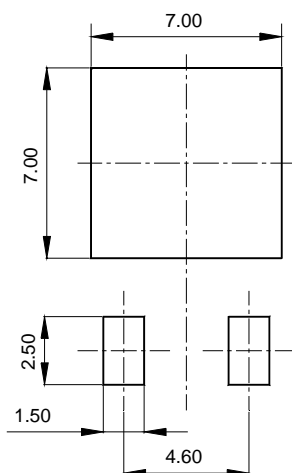


Package Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	6.40	6.60	6.80	
B	5.90	6.10	6.30	
C	5.04	5.34	5.64	
D	0.50	0.70	0.90	
E	2.50	2.70	2.90	
F	2.10	2.30	2.50	
H	0.96 MAX			
I	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	
M	0.81	0.91	1.01	
O	0.80	0.90	1.00	
P	0.90	1.00	1.10	
Q	0.95 MAX			
R	0.60	0.80	1.00	

※ Recommended Land Pattern (unit: mm)



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