

**Surface Mount Superfast Recovery Rectifier**

**Reverse Voltage - 100 to 600 V**

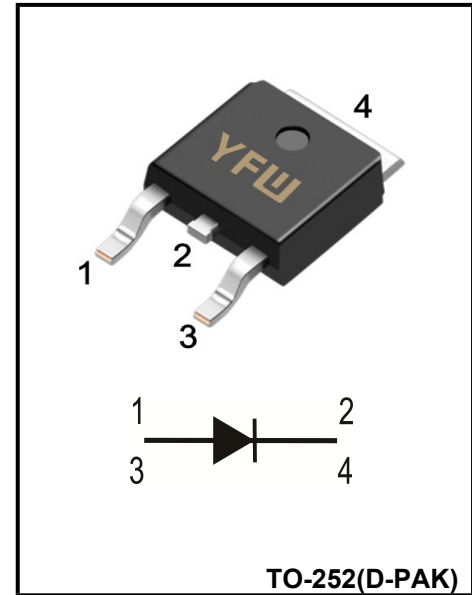
**Forward Current - 5 A**

**FEATURES**

- ◆ Glass Passivated Chip Junction
- ◆ High current capability
- ◆ Low forward voltage drop
- ◆ Low power loss, high efficiency
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

**MECHANICAL DATA**

- ◆ Case: TO-252(D-PAK)
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 0.32g / 0.011oz



**Absolute Maximum Ratings and characteristics**

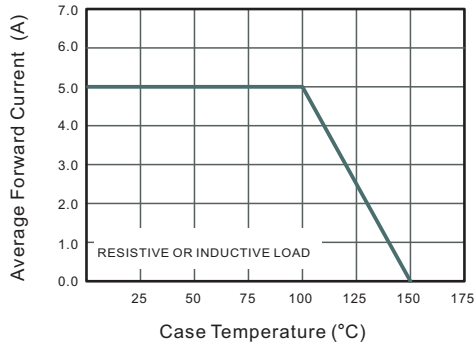
Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbols	SF501DS	SF502DS	SF503DS	SF504DS	SF505DS	SF506DS	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	100	200	300	400	500	600	V
Maximum RMS voltage	$V_{RMS}$	70	140	210	280	350	420	V
Maximum DC Blocking Voltage	$V_{DC}$	100	200	300	400	500	600	V
Maximum Average Forward Rectified Current at $T_c = 125\text{ }^\circ\text{C}$	$I_{F(AV)}$	5						A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load(JEDEC method)	$I_{FSM}$	150						A
Maximum Instantaneous Forward Voltage at 5 A	$V_F$	0.95		1.25		1.65		V
Maximum DC Reverse Current $T_a = 25\text{ }^\circ\text{C}$ at Rated DC Blocking Voltage $T_a = 125\text{ }^\circ\text{C}$	$I_R$	1 300						$\mu\text{A}$
Typical Junction Capacitance at $V_R=4\text{V}, f=1\text{MHz}$	$C_j$	45						pF
Maximum Reverse Recovery Time <sup>(1)</sup>	$T_{rr}$	35						nS
Typical Thermal Resistance <sup>(2)</sup>	$R_{\theta JC}$	15						$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150						$^\circ\text{C}$

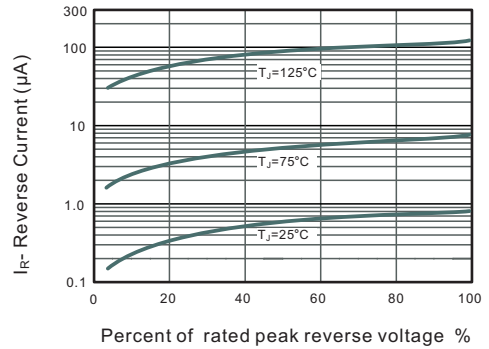
(1) Measured with  $I_F=0.5\text{A}, I_R=1\text{A}, I_{tr}=0.25\text{A}$

(2) P.C.B. mounted with 10cmX10cmX1mm copper pad areas.

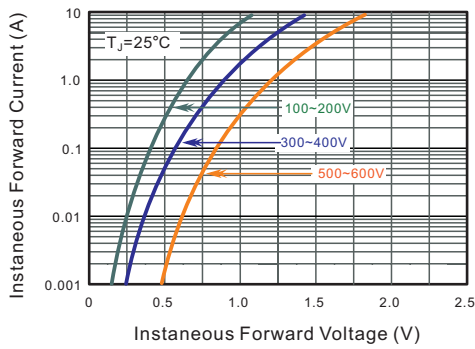
**Fig.1 Maximum Average Forward Current Rating**



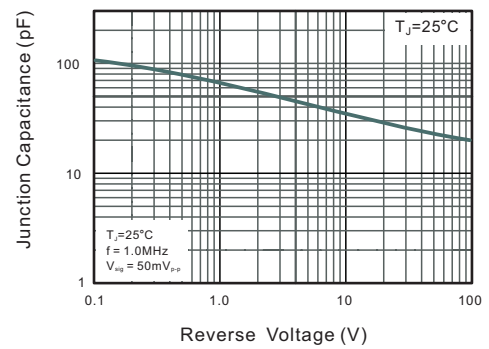
**Fig.2 Typical Reverse Characteristics**



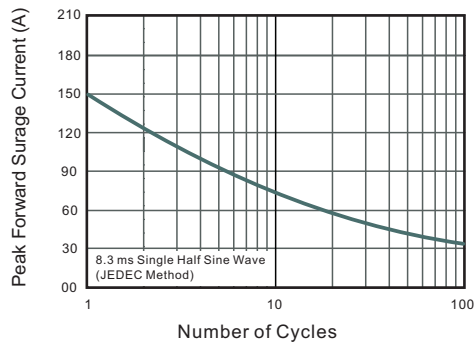
**Fig.4 Typical Forward Characteristics**



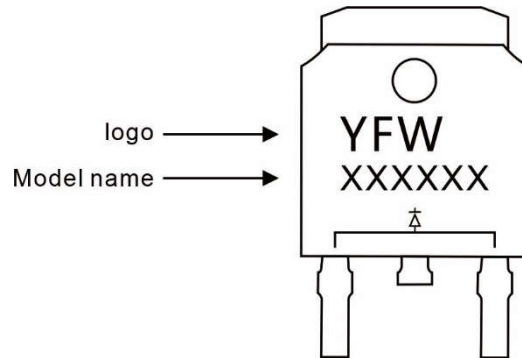
**Fig.4 Typical Junction Capacitance**



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



**Marking Diagram**



**Ordering information**

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
XXXXXX	TO-252	0.011oz(0.32g)	2500pcs/reel	5000pcs/box 25000pcs/Carton

**Package Dimensions**

**TO-252**

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	10.00	11.00	0.393	0.433
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059

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