

Surface Mount Ultrafast Recovery Rectifier

Reverse Voltage - 100 to 1000 V

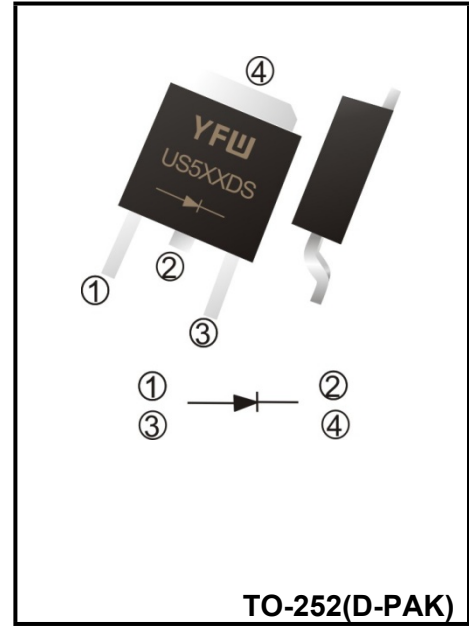
Forward Current - 5 A

FEATURES

- ◆ High current capability
- ◆ Low forward voltage drop
- ◆ Low power loss, high efficiency
- ◆ High surge capability
- ◆ High temperature soldering guaranteed
- ◆ 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



Maximum Ratings and characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbols	US501DS	US502DS	US504DS	US506DS	US508DS	US510DS	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	100	200	400	600	800	1000	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	I_{FSM}	120						A
Maximum Instantaneous Forward Voltage at 5A	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						μA
Maximum Reverse Recovery Time ⁽¹⁾	T_{rr}	50				75		nS
Typical Junction Capacitance f=1MHz,4V DC	C_j	50						PF
Typical Thermal Resistance ⁽²⁾	$R_{\theta JC}$	25						$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150						$^\circ\text{C}$

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

(2) P.C.B. mounted with 10cm X 10cmX1mm copper pad areas.

Fig.1 Maximum Average Forward Current Rating

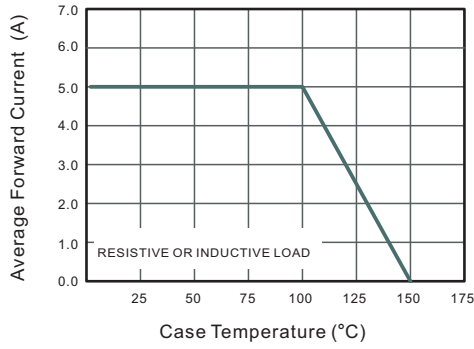


Fig.2 Typical Reverse Characteristics

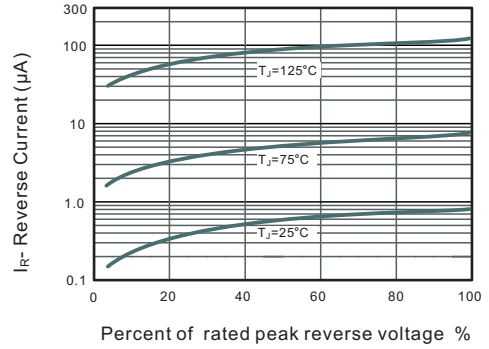


Fig.4 Typical Forward Characteristics

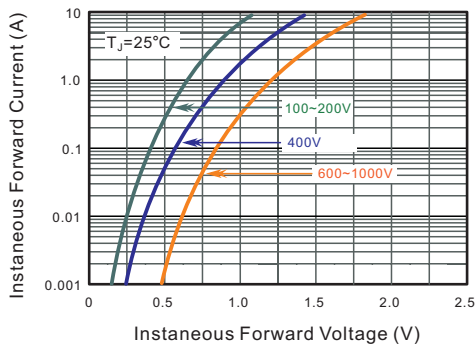


Fig.4 Typical Junction Capacitance

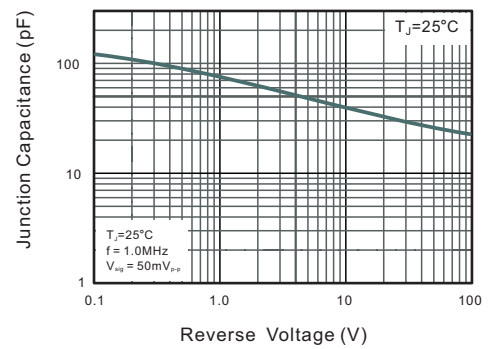
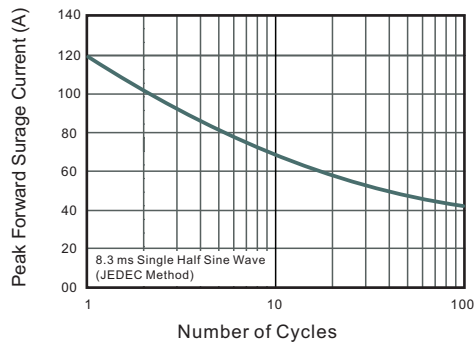
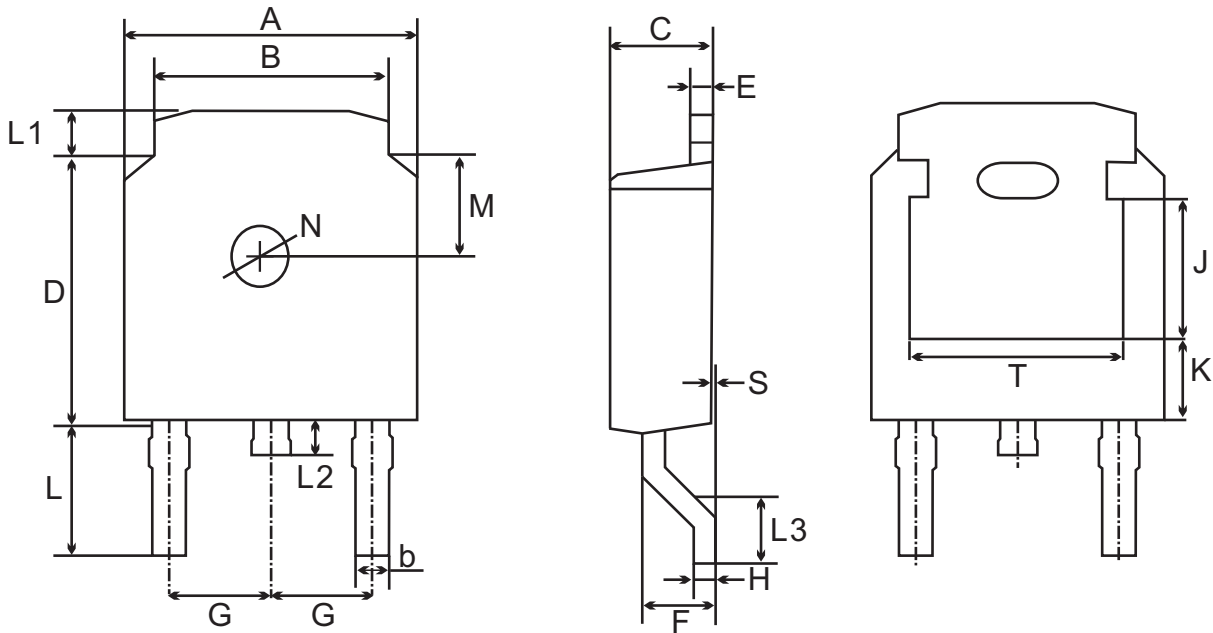


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



Package Outline

TO-252(D-PAK)



UNIT		A	B	b	C	D	E	F	G	H	L	L1	L2	L3	S	M	N	J	K	T
mm	max	6.7	5.5	0.8	2.5	6.3	0.6	1.8	2.29 TYPICAL	0.55	3.1	1.2	1.0	1.75	0.1	1.8 TYPICAL	1.3 TYPICAL	3.16 ref.	1.80 ref.	4.83 ref.
	min	6.3	5.1	0.3	2.1	5.9	0.4	1.3		0.45	2.7	0.8	0.6	1.40	0.0					
mil	max	264	217	31	98	248	24	71	90 TYPICAL	22	122	47	39	69	4	71 TYPICAL	51 TYPICAL	124 ref.	71 ref.	190 ref.
	min	248	201	12	83	232	16	51		18	106	31	24	55	0					

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
TO-252(D-PAK)	Tape/Reel, 13" reel	2500	EIA-481-1