

1. Description

These diodes are optimized to less losses and EMI/RFI in high frequency power conditioning system. The soft recovery character of the diodes offers buffer in most applications. These devices are suited for power converters and other applications where the switching losses are not significant portion of the total losses.

2. Features

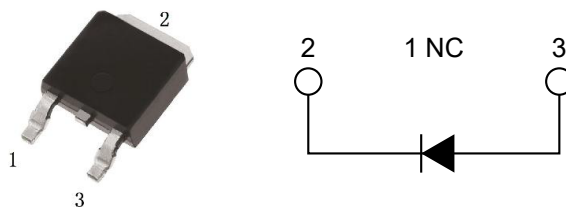
- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low IR value
- Very Low forward voltage
- Epitaxial chip construction

3. Applications

- Switched mode power supply
- UPS
- Free wheeling diode, Snubber diode

4. Pinning Information

Product Summary	
V_R	600V
$I_{F(AV)}$	6A
t_{rr}	30ns



TO-252



5. Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Units
Repetitive peak reverse voltage	V_{RRM}		600	V
Blocking voltage	V_R		600	V
Continuous forward current ¹	$I_{F(AV)}$	$T_A=110^{\circ}\text{C}$	6	A
Single pulse forward current ²	I_{FSM}	$T_A=25^{\circ}\text{C}$	50	A
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHz	18	A
Operating junction	T_J		175	$^{\circ}\text{C}$
Storage temperatures	T_{STG}		-55 to 175	$^{\circ}\text{C}$

Note: 1. $\delta=0.5$, square wave

2. $t_p=10\text{ms}$ sinusoidal

6. Electrical Characteristics ($T_A = 25^{\circ}\text{C}$ Unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Breakdown voltage	V_{BR}	$I_R=100\mu\text{A}$	600			V
Forward voltage	V_F ³	$I_F=6\text{A}$		1.35	1.6	V
		$I_F=6\text{A}$, $T_J=125^{\circ}\text{C}$		1.25	1.5	V
Reverse leakage current	I_R ⁴	$V_R=V_{RRM}$			20	μA
		$T_J=150^{\circ}\text{C}$, $V_R=600\text{V}$			200	μA
Reverse recovery time	t_{rr}	$I_F=0.5\text{A}$, $I_R=1\text{A}$, $I_{RR}=0.25\text{A}$			35	ns
		$I_F=1\text{A}$, $V_R=30\text{V}$, $di/dt=200\text{A}/\mu\text{s}$		22	30	ns

Notes:

3. Pulse test: $t_p=380\mu\text{s}$, $\delta < 2\%$

4. Pulse test: $t_p=5\text{ms}$, $\delta < 2\%$

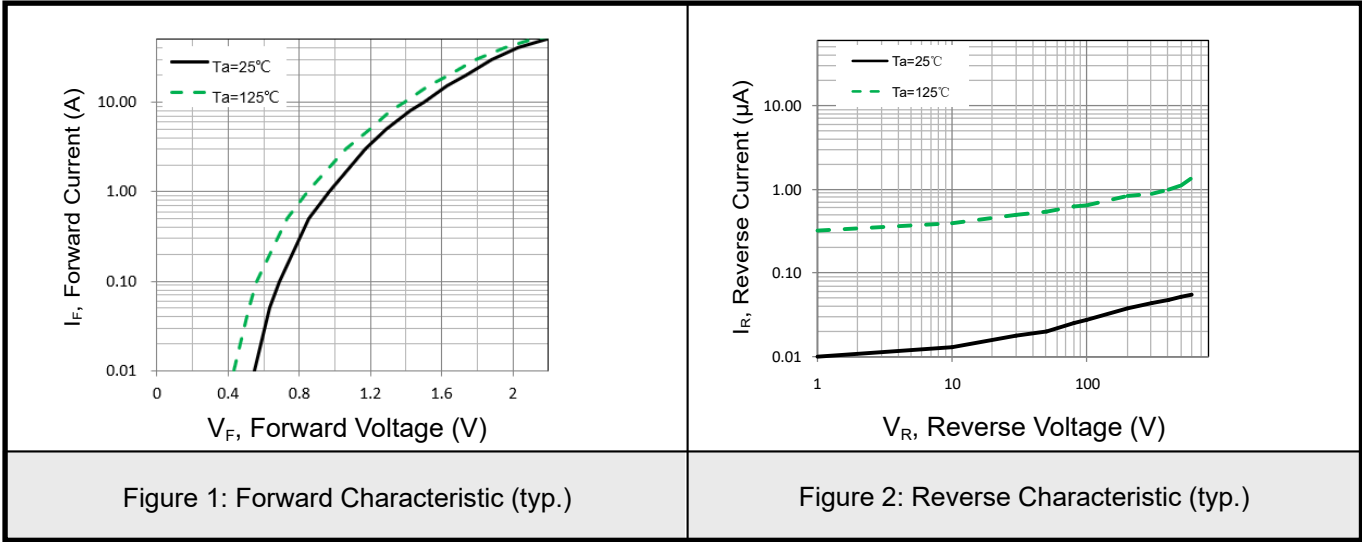
To evaluate the conduction losses, use the following equation: $P = 1.07 \times I_{F(AV)} + 0.066 \times I_F^2(\text{RMS})$

7. Thermal Characteristics

Parameter	Symbol	Typ	Max	Units
Junction-to-Case	R_{thJC}		4.5	$^{\circ}\text{C}/\text{W}$

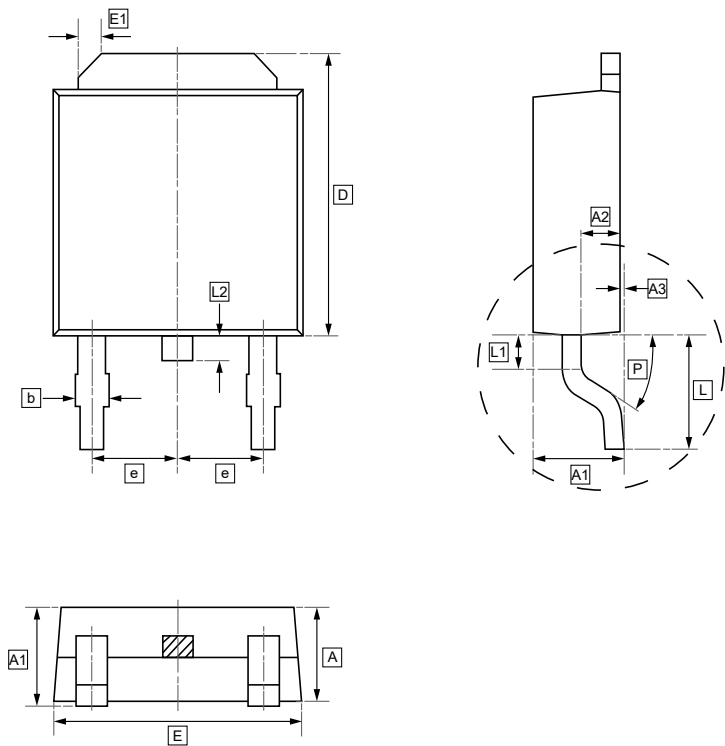


8. Typical Characteristics





9.TO-252 Package Outline Dimensions



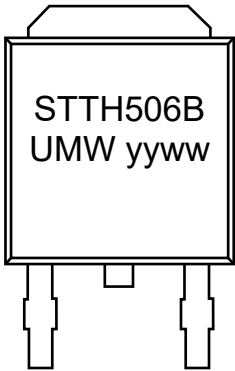
DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	A3	b	D	E	E1	e	L	L1	L2
Min	2.20	2.30	1.10	0	0.74	6.90	5.50	0.50	2.20	2.95	0.60	0.60
Max	2.40	2.50	1.20	0.13	0.86	7.70	7.50	1.10	2.40	3.25	1.00	1.00

Symbol	P
Min	25°
Max	45°



10.Ordering Information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW STTH506B-TR	TO-252	2500	Tape and reel



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