

1.Description

The STTH110, which is using ultrafast high voltage planar technology, is especially suited for free-wheeling, clamping, snubbing, demagnetization in power supplies and other power switching applications.

2.Features

- Low forward voltage drop
- High reliability
- High surge current capability
- Soft switching for reduced EMI disturbances
- Planar technology

3.Pinning Information

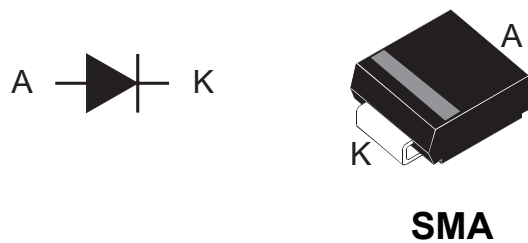


Table 1. Device summary

Symbol	Value
$I_{F(AV)}$	1A
V_{RRM}	1000V
$T_{j(max)}$	175°C
$V_{F(max)}$	1.42V



4. Absolute Ratings (Limiting Values)

Parameter			Symbol	Value	Unit
Repetitive Peak Reverse Voltage			V_{RRM}	1000	V
Voltage RMS			$V_{(RMS)}$	700	V
Average Forward Current $\delta = 0.5$	SMA	$T_L = 110^\circ\text{C}$	$I_{F(AV)}$	1	A
Forward Surge Current, $t=8.3\text{ms}$	SMA		I_{FSM}	18	A
Storage Temperature Range			T_{STG}	-50 to 175	$^\circ\text{C}$
Maximum Operating Junction Temperature			T_J	175	$^\circ\text{C}$

5. Thermal Parameters

Parameter		Symbol	Max	Units
Junction To Lead	SMA	$R_{th(j-l)}$	30	$^\circ\text{C/W}$

6. Static Electrical Characteristics

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Reverse Leakage Current	$T_J = 25^\circ\text{C}$	I_R	$V_R = 1000\text{V}$			10	μA
	$T_J = 125^\circ\text{C}$					50	μA
Forward Voltage Drop	$T_J = 25^\circ\text{C}$	V_F	$I_F = 1\text{A}$			1.7	V
	$T_J = 150^\circ\text{C}$		$I_F = 1\text{A}$		0.98	1.42	V

To evaluate the conduction losses use the following equation:

$$P = 1.2 \times I_{F(AV)} + 0.225 I_{F(RMS)}^2$$



7.Dynamic Characteristics

Parameter		Symbol	Conditions	Typ	Max	Unit
Reverse Recovery Time	$T_J=25^{\circ}\text{C}$	t_{rr}	$I_F=0.5\text{A}, I_{RR}=0.25\text{A}, I_R=1\text{A}$		75	ns
Forward Recovery Time	$T_J=25^{\circ}\text{C}$	t_{fr}	$I_F=1\text{A}, di_F/dt=50\text{A/ms}, V_{FR}=1.1\times V_{Fmax}$		300	ns
Forward Recovery Voltage	$T_J=25^{\circ}\text{C}$	V_{FP}	$I_F=1\text{A}, di_F/dt=50\text{A/ms}, V_{FR}=1.1\times V_{Fmax}$		18	V



8. Typical Characteristic

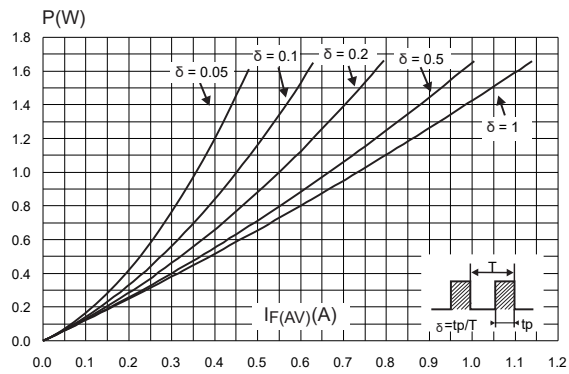


Figure 1: Conduction losses versus average current

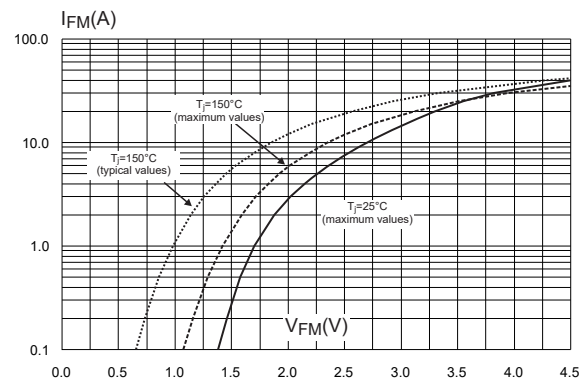


Figure 2: Forward voltage drop versus forward current (typical values)

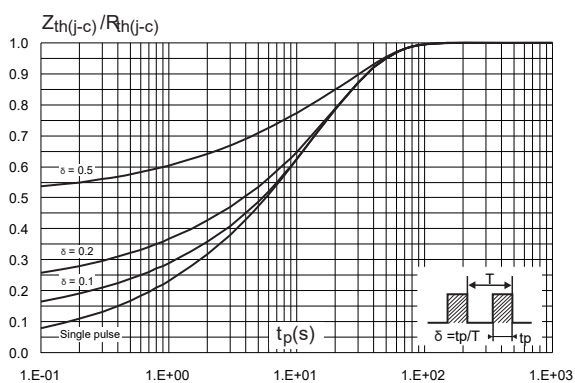


Figure 3: Relative variation of thermal impedance junction ambient versus pulse duration (SMA)

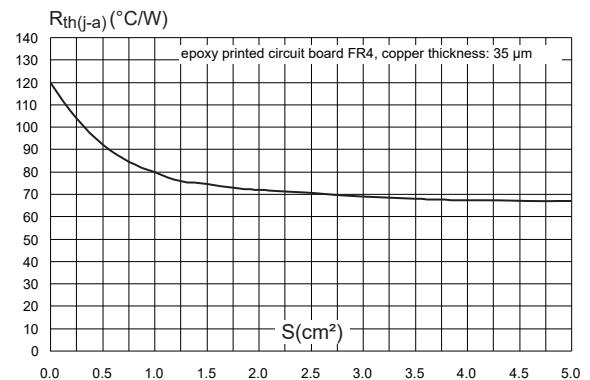
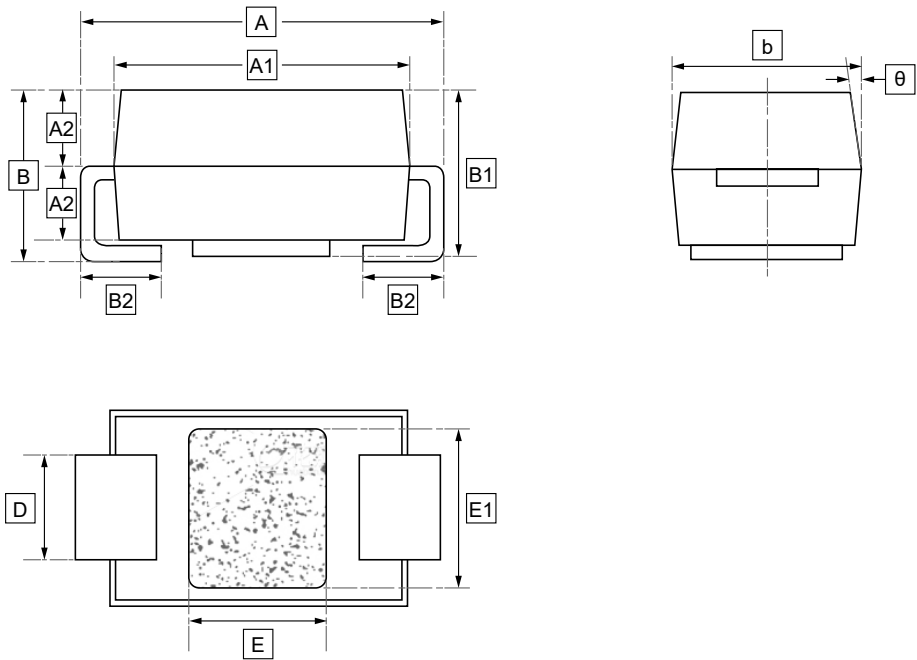


Figure 4: Thermal resistance junction to ambient versus copper surface under each lead (SMA)



9.SMA Package Outline Dimensions

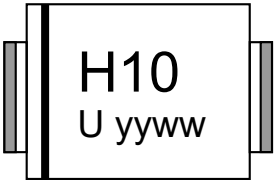


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	B	B1	B2	b	D	E	E1	θ
Min	4.9	4.05	0.97	2.18	2.15	1.0	2.55	1.38	1.8	2.0	5°
Max	5.1	4.15	1.03	2.38	2.25	1.4	2.65	1.42	2.0	2.2	



10.Ordering Information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW STTH110A	SMA	5000	Tape and reel



11.Disclaimer

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