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SEMICONDUCTOR



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PLED

STTH108A-MS

Product specification

Description

The STTH108A-MS, which is using ultrafast high voltage planar technology, is specially suited for free-wheeling, clamping, snubbing, demagnetization in power supplies and other power switching applications.

Features

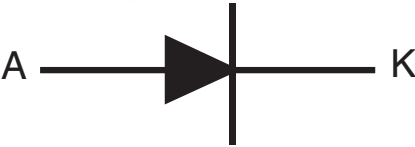
- Low forward voltage drop
- High reliability
- High surge current capability
- Soft switching for reduced EMI disturbances
- Planar technology

Reference News

STTH108A-MS	MARKING
 DO-214AC(SMA)	

Device summary

Symbol	Value
$I_{F(AV)}$	1 A
V_{RRM}	800 V
$T_j(max)$	175 °C
$V_F(max)$	1.25 V



Absolute ratings (limiting values)

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			800	V
$V_{(RMS)}$	Voltage rms			560	V
$I_{F(AV)}$	Average forward current	SMA	$T_L = 110\text{ °C}$ $\delta = 0.5$	1	A
I_{FSM}	Forward Surge current	$t = 8.3\text{ ms}$	SMA	20	A
T_{stg}	Storage temperature range			-50 to + 175	°C
T_j	Maximum operating junction temperature			175	°C

Thermal resistance

Symbol	Parameter		Value	Unit
$R_{th(j-l)}$	Junction to lead	SMA	30	°C/W

Static electrical characteristics

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
I_R	Reverse leakage current	$T_j = 25\text{ °C}$	$V_R = 800\text{ V}$			5	μA
		$T_j = 125\text{ °C}$			1	50	
V_F	Forward voltage drop	$T_j = 25\text{ °C}$	$I_F = 1\text{ A}$			1.65	V
		$T_j = 125\text{ °C}$			0.89	1.25	

To evaluate the conduction losses use the following equation:

$$P = 1.05 \times I_{F(AV)} + 0.20 I_F^2(RMS)$$

Dynamic electrical characteristics

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
t_{rr}	Reverse recovery time	$T_j = 25\text{ °C}$	$I_F = 0.5\text{ A}, I_{rr} = 0.25\text{ A}, I_R = 1\text{ A}$			75	ns
t_{fr}	Forward recovery time	$T_j = 25\text{ °C}$	$I_F = 1\text{ A}, dI_F/dt = 50\text{ A/ms}, V_{FR} = 1.1 \times V_{Fmax}$			200	ns
V_{FP}	Forward recovery voltage	$T_j = 25\text{ °C}$	$I_F = 1\text{ A}, dI_F/dt = 50\text{ A/ms}$			12	V

Figure 1. Conduction losses versus average current

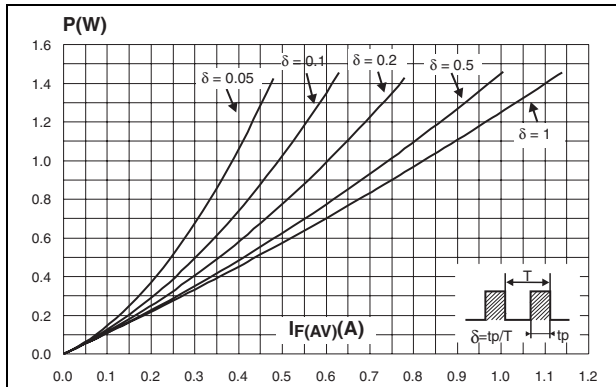


Figure 2. Forward voltage drop versus forward current

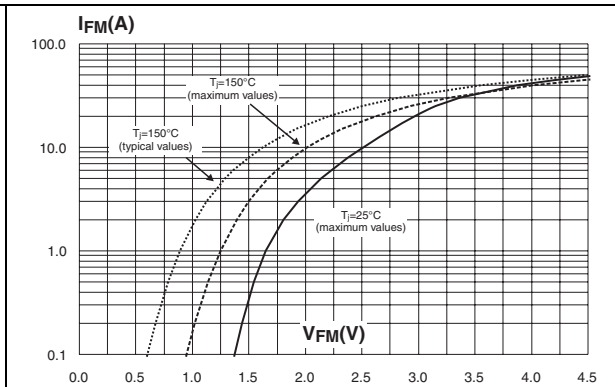


Figure 3. Relative variation of thermal impedance junction ambient versus pulse duration (epoxy FR4) (SMA)

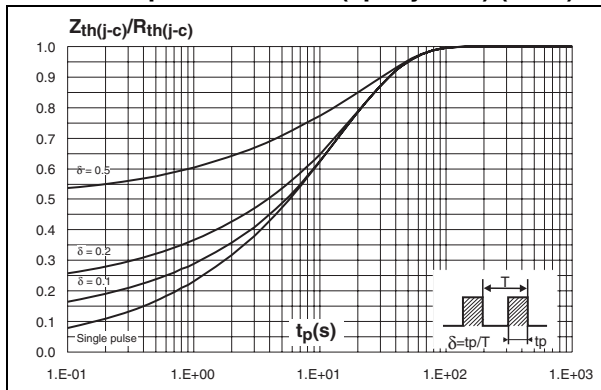
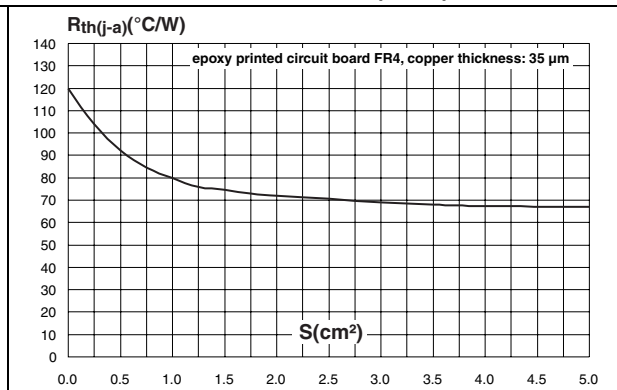
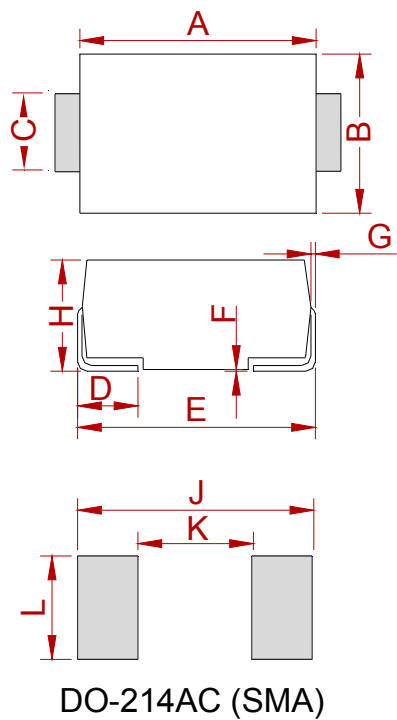


Figure 4. Thermal resistance junction to ambient versus copper surface under each lead (SMA)



PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.65	0.167	0.183
B	2.50	2.90	0.098	0.114
C	1.35	1.65	0.053	0.065
D	0.76	1.52	0.030	0.060
E	4.93	5.28	0.194	0.208
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	1.98	2.41	0.078	0.095
J	6.50		0.256	
K		2.30		0.090
L	1.70		0.067	

REEL SPECIFICATION

P/N	PKG	QTY
STTH108A-MS	DO-214AC (SMA)	5000

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