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SEMICONDUCTOR



ESD



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PLED

STTH112x-MS

Product specification

Description

The STTH112x-MS, which is using ultrafast high voltage planar technology, is specially suited for free-wheeling, clamping, snubbing, demagnetization in powersupplies 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

STTH112A-MS	MARKING
 DO-214AC(SMA)	
STTH112U-MS	MARKING
 DO-214AA(SMB)	

Device summary

Symbol	Value
$I_{F(AV)}$	1 A
V_{RRM}	1200 V
$T_j (max)$	175 °C
$V_F (max)$	1.65 V

Electrical characteristics

Absolute ratings (limiting values)

Symbol	Parameter			Value	Unit
V _{RRM}	Repetitive peak reverse voltage			1200	V
V _(RMS)	Voltage rms			850	V
I _{F(AV)}	Average forward current	TI = 115°C δ =0.5	SMA	1	A
		TI = 125°C δ =0.5	SMB		
I _{FSM}	Forward surge current t = 8.3 ms	SMA		18	A
		SMB			
T _{stg}	Storage temperature range			- 50 + 175	°C
T _j	Maximum operating junction temperature			+ 175	°C

Thermal parameters

Symbol	Parameter		Value	Unit
$R_{th(j-l)}$	Junction to lead	SMA	30	°C/W
		SMB	25	

Static electrical characteristics

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
I_R	Reverse leakage current	$V_R = 1200\text{ V}$	$T_j = 25\text{ °C}$			5	μA
			$T_j = 125\text{ °C}$			50	
V_F	Forward voltage drop	$I_F = 1\text{ A}$	$T_j = 25\text{ °C}$			1.9	V
			$T_j = 125\text{ °C}$		1.17	1.65	
			$T_j = 150\text{ °C}$		1.10	1.55	

Dynamic electrical characteristics

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
t_{rr}	Reverse recovery time	$I_F = 0.5\text{ A}$ $I_{rr} = 0.25\text{ A}$ $I_R = 1\text{ A}$	$T_j = 25\text{ °C}$			75	ns
t_{fr}	Forward recovery time	$I_F = 1\text{ A}$ $dI_F/dt = 50\text{ A}/\mu\text{s}$	$T_j = 25\text{ °C}$			500	ns
V_{FP}	Forward recovery voltage	$V_{FR} = 1.1 \times V_{Fmax}$				30	V

Figure 1. Conduction losses versus average current

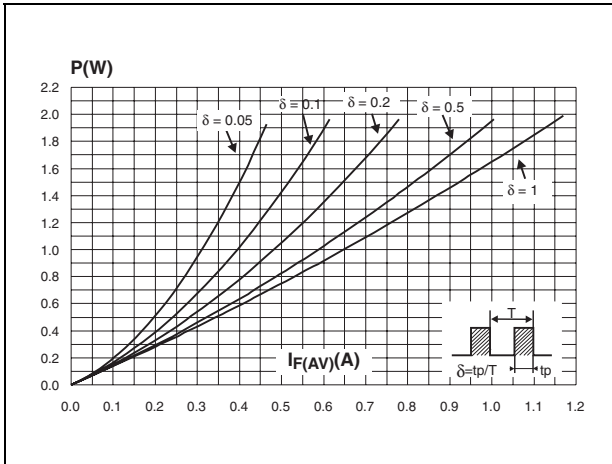


Figure 2. Forward voltage drop versus forward current

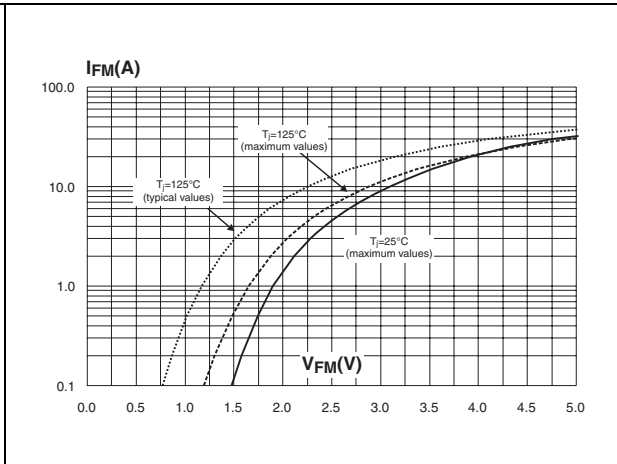


Figure 3. Relative variation of thermal impedance junction ambient versus pulse duration (DO-41)

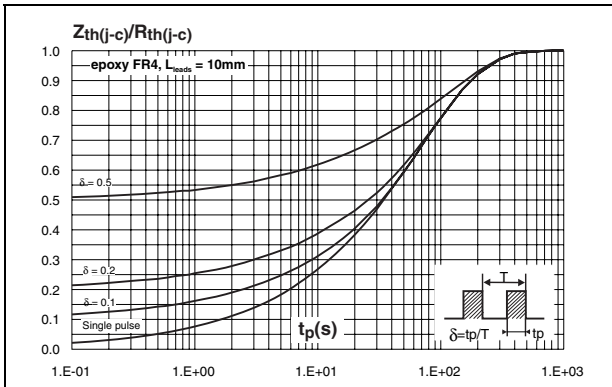


Figure 4. Relative variation of thermal impedance junction ambient versus pulse duration (epoxy FR4) (SMA)

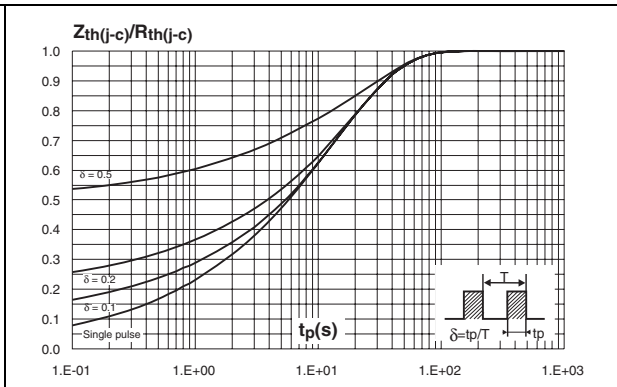


Figure 5. Relative variation of thermal impedance junction ambient versus pulse duration (epoxy FR4)(SMB)

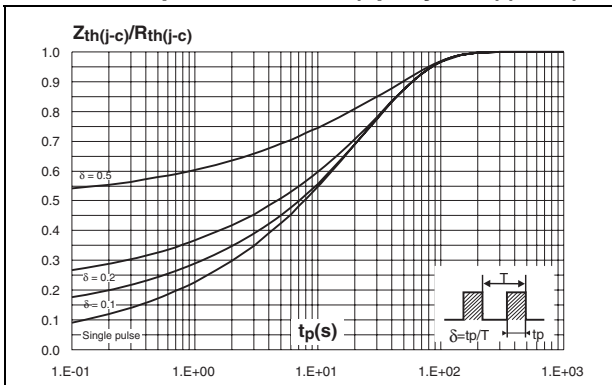


Figure 6. Thermal resistance junction to ambient versus copper surface under each lead (DO-41, SMB)

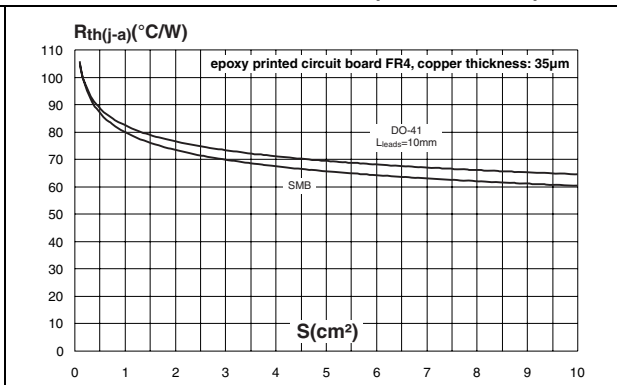
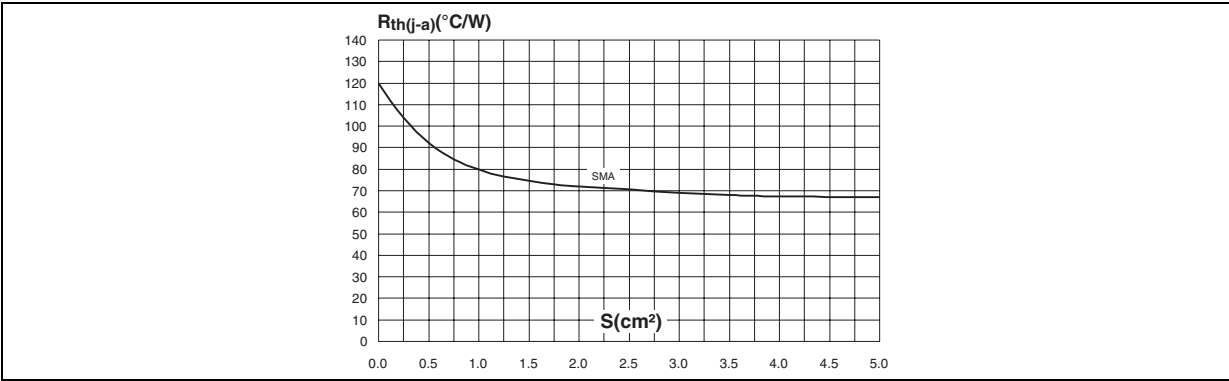
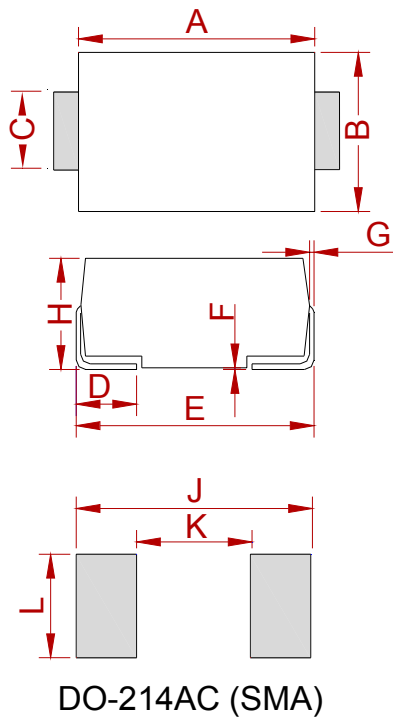


Figure 7. Thermal resistance junction to ambient versus copper surface under each lead (epoxy printed circuit board FR4, copper thickness: 35μm) (SMA)



PACKAGE MECHANICAL DATA

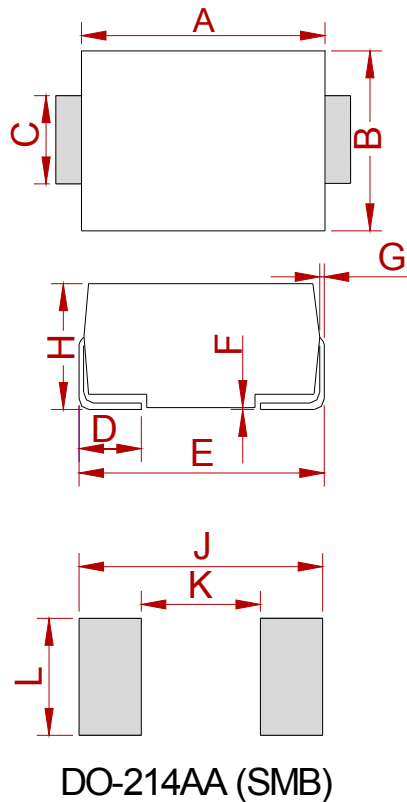


Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.65	0.167	0.183
B	2.50	2.90	0.098	0.114
C	1.35	1.65	0.053	0.065
D	0.76	1.52	0.030	0.060
E	4.93	5.28	0.194	0.208
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	1.98	2.41	0.078	0.095
J	6.50		0.256	
K		2.30		0.090
L	1.70		0.067	

REEL SPECIFICATION

P/N	PKG	QTY
STTH112A-MS	DO-214AC (SMA)	5000

PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.75	0.167	0.187
B	3.30	3.94	0.130	0.155
C	1.85	2.21	0.073	0.087
D	0.76	1.52	0.030	0.060
E	5.08	5.59	0.200	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.11	2.44	0.083	0.096
J	6.80		0.270	
K		2.60		0.100
L	2.40		0.090	

REEL SPECIFICATION

P/N	PKG	QTY
STTH112U-MS	DO-214AA (SMB)	2500

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