

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

STTH2L06x-MS

Product specification

Description

The STTH2L06x-MS is using Turbo 2 600 V planar Pt doping technology. It is specially suited for SMPS and base drive transistor circuits.

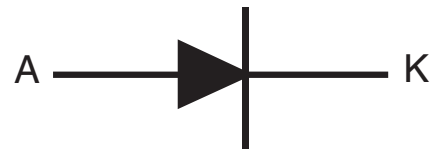
Packaged in axial, SMA and SMB, this device is intended for use in high frequency inverters, free wheeling and polarity protection.

Features

- Very low conduction losses
- Negligible switching losses
- Low forward and reverse recovery times
- High junction temperature

Reference News

STTH2L06A-MS	MARKING
 DO-214AC(SMA)	



STTH2L06U-MS	MARKING
 DO-214AA(SMB)	

Device summary

Symbol	Value
$I_{F(AV)}$	2 A
V_{RRM}	600 V
T_j	175 °C
$V_F(typ)$	0.85 V
$t_{rr}(max)$	60 ns

Absolute ratings (limiting values)

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			600	V
$I_{F(RMS)}$	Forward rms current			7	A
$I_{F(AV)}$	Average forward current, $\delta = 0.5$	SMA	$T_l = 100\text{ °C}$	2	A
		SMB	$T_l = 115\text{ °C}$	2	
I_{FSM}	Surge non repetitive forward current	SMA / SMB	$t_p = 10\text{ ms}$ sinusoidal	35	A
T_{stg}	Storage temperature range			-65 to + 175	°C
T_j	Maximum operating junction temperature			175	°C

Thermal resistance

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

Static electrical characteristics

Symbol	Parameter	Test conditions		Min.	Typ.	Max.	Unit
$I_R^{(1)}$	Reverse leakage current	$T_j = 25\text{ °C}$	$V_R = V_{RRM}$			2	μA
		$T_j = 150\text{ °C}$			12	85	
$V_F^{(2)}$	Forward voltage drop	$T_j = 25\text{ °C}$	$I_F = 2\text{ A}$			1.3	V
		$T_j = 150\text{ °C}$			0.85	1.05	

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

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

To evaluate the maximum conduction losses use the following equation:

$$P = 0.89 \times I_{F(AV)} + 0.08 I_{F(RMS)}^2$$

Dynamic electrical characteristics

Symbol	Parameter	Test conditions		Min.	Typ.	Max.	Unit
t_{rr}	Reverse recovery time	$T_j = 25\text{ °C}$	$I_F = 1\text{ A}$, $dl_F/dt = 50\text{ A}/\mu\text{s}$, $V_R = 30\text{ V}$		60	85	ns
t_{fr}	Forward recovery time	$T_j = 25\text{ °C}$	$I_F = 2\text{ A}$ $dl_F/dt = 100\text{ A}/\mu\text{s}$ $V_{FR} = 1.1 \times V_{Fmax}$			100	ns
V_{FP}	Forward recovery voltage					9	V

Figure 1. Conduction losses vs average forward current

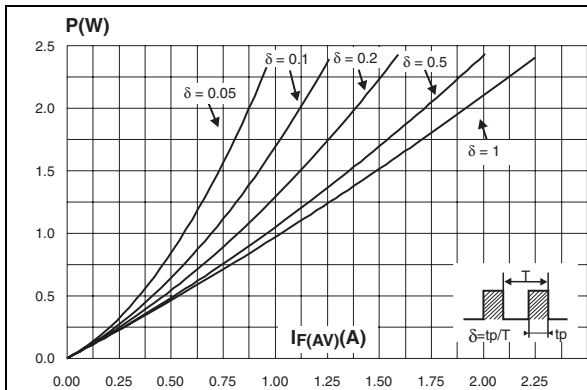


Figure 2. Forward voltage drop vs forward current

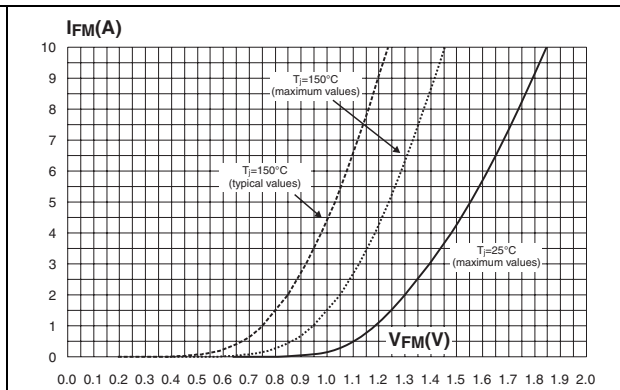


Figure 3. Relative variation of thermal impedance junction to case vs pulse duration (SMA - $S_{CU} = 1 \text{ cm}^2$)

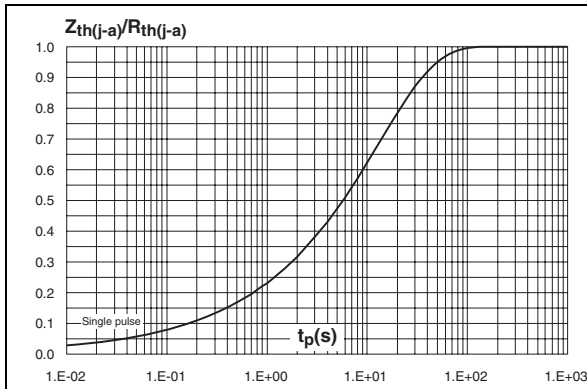


Figure 4. Relative variation of thermal impedance junction to case vs pulse duration (SMB - $S_{CU} = 1 \text{ cm}^2$)

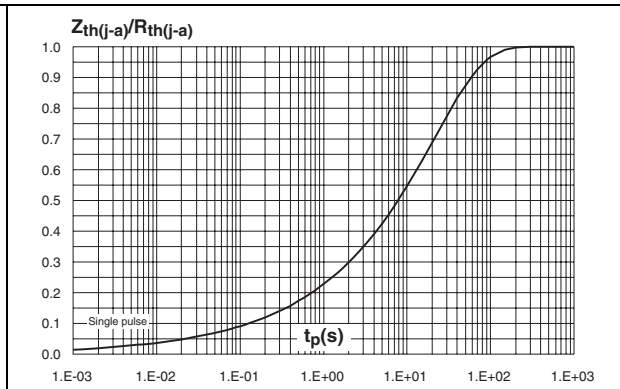


Figure 5. Reverse recovery time vs dI_F/dt (typical values)

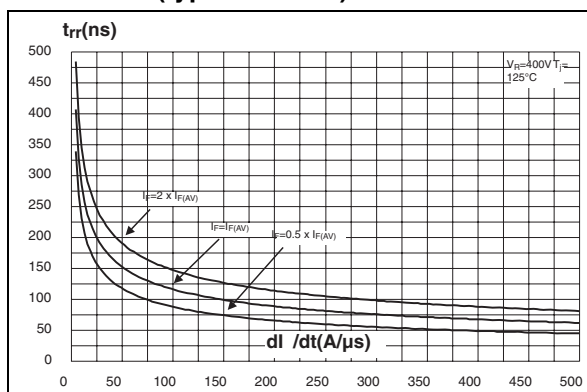


Figure 6. Reverse recovery charges vs dI_F/dt (typical values)

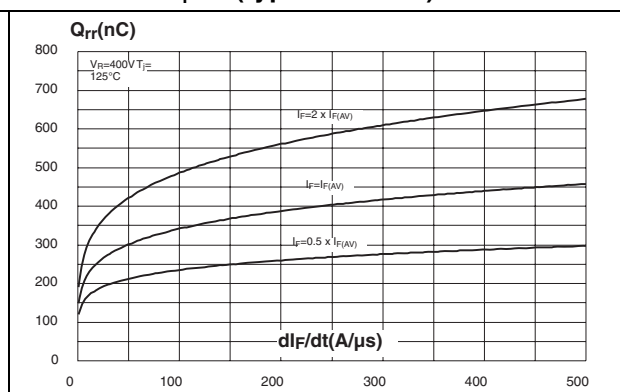


Figure 7. Relative variations of dynamic parameters vs junction temperature

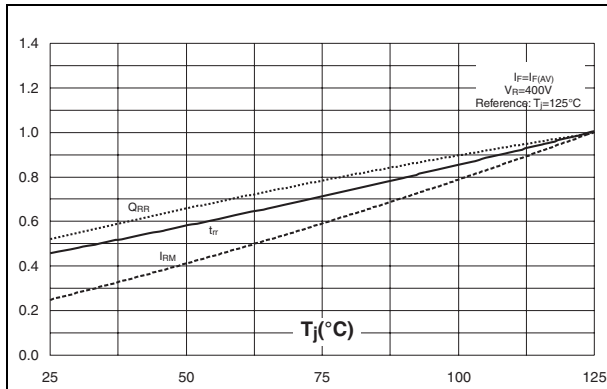


Figure 8. Transient peak forward voltage vs di_F/dt (typical values)

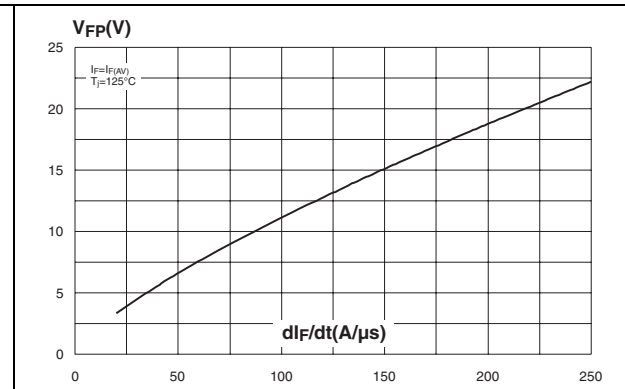


Figure 9. Forward recovery time vs di_F/dt (typical values)

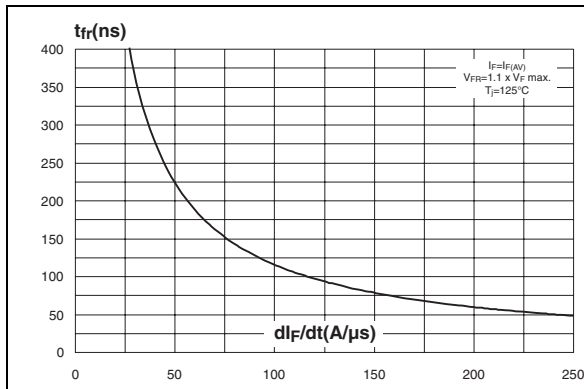


Figure 10. Junction capacitance vs reverse voltage applied (typical values)

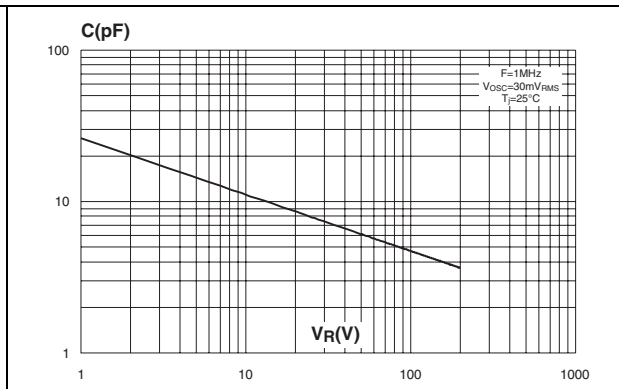


Figure 11. Thermal resistance junction to ambient vs copper surface under tab (epoxy FR4, Cu = 35 μm)

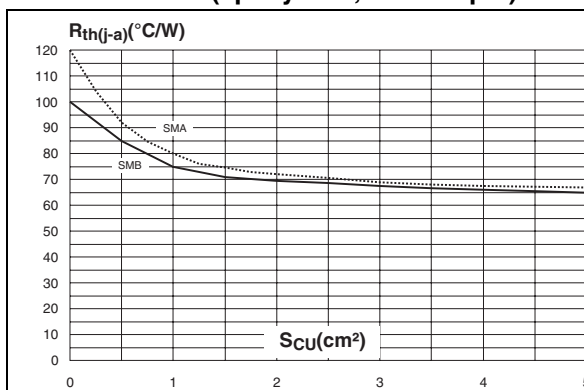
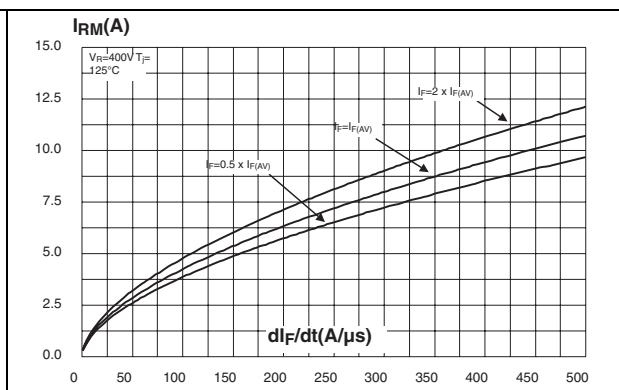
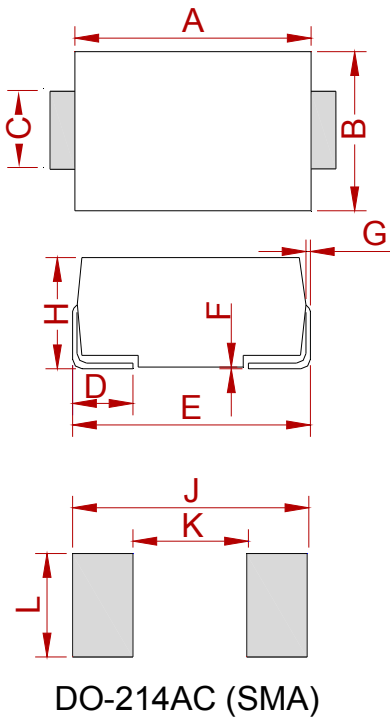


Figure 12. Peak reverse recovery current vs di_F/dt (typical values)



PACKAGE MECHANICAL DATA

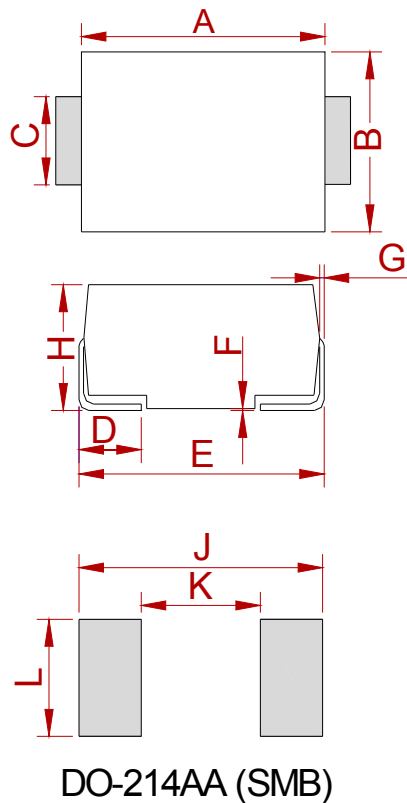


Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.65	0.167	0.183
B	2.50	2.90	0.098	0.114
C	1.35	1.65	0.053	0.065
D	0.76	1.52	0.030	0.060
E	4.93	5.28	0.194	0.208
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	1.98	2.41	0.078	0.095
J	6.50		0.256	
K		2.30		0.090
L	1.70		0.067	

REEL SPECIFICATION

P/N	PKG	QTY
STTH2L06A-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	

REELSPECIFICATION

P/N	PKG	QTY
STTH2L06U-MS	DO-214AA (SMB)	2500

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