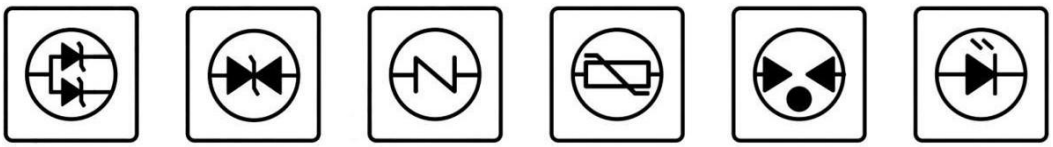
MSKSEMI 美森科
SEMICONDUCTOR



STPS2L25U-MS

Product specification

STPS2L25U-MS

Power Schottky rectifier

Description

Schottky rectifiers designed for high frequency miniature switched mode power supplies such as adaptors and on board DC/DC converters.

Packaged in SMB for thermal resistance characteristic improvement, the STPS2L25U-MS is ideal for use in parallel with MOSFETs in synchronous rectification.

Features

- Very low forward voltage drop for less power dissipation
- Optimized conduction/reverse losses trade-off which means the highest efficiency in the applications
- Avalanche rated

Applications

- Cordless appliance
- SSD
- Battery charger
- Telecom power
- DC / DC converter

Reference News

STPS2L25U-MS	MARKING
 DO-214AA(SMB)	

Device summary

Symbol	Value
$I_{F(AV)}$	2 A
V_{RRM}	25 V
$T_{j(max.)}$	150 °C
$V_{F(typ.)}$	0.325 V

Characteristics

Absolute Ratings (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage		25	V
$I_{F(RMS)}$	Forward rms current		10	A
$I_{F(AV)}$	Average forward current, δ = 0.5 square wave	T_L = 125 °C	2	A
I_{FSM}	Surge non repetitive forward current	t_p = 10 ms sinusoidal	75	A
P_{ARM}	Repetitive peak avalanche power	t_p = 10 µs, T_j = 125 °C	108	W
T_{stg}	Storage temperature range		-65 to +150	°C
T_j	Maximum operating junction temperature(1)		+150	°C

Thermal resistance

Symbol	Parameter	Max. value	Unit
$R_{th(j-l)}$	Junction to lead	25	°C/W

Static electrical characteristics

Symbol	Parameter	Test conditions		Min.	Typ.	Max.	Unit
I_R	Reverse leakage current	T_j = 25 °C	$V_R = V_{RRM}$	-		90	µA
		T_j = 125 °C		-	15	30	mA
V_F	Forward voltage drop	T_j = 25 °C	I_F = 2 A	-		0.450	V
		T_j = 125 °C		-	0.325	0.375	
		T_j = 25 °C	I_F = 4 A	-		0.530	
		T_j = 125 °C		-	0.430	0.510	

Characteristics (curves)

Figure 1. Average forward power dissipation versus average forward current

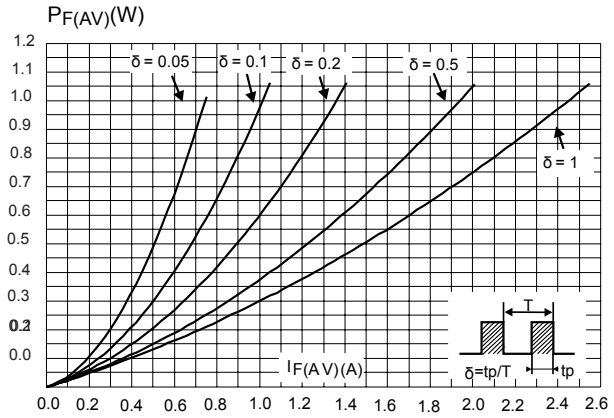


Figure 2. Average forward current versus ambient temperature (δ = 0.5)

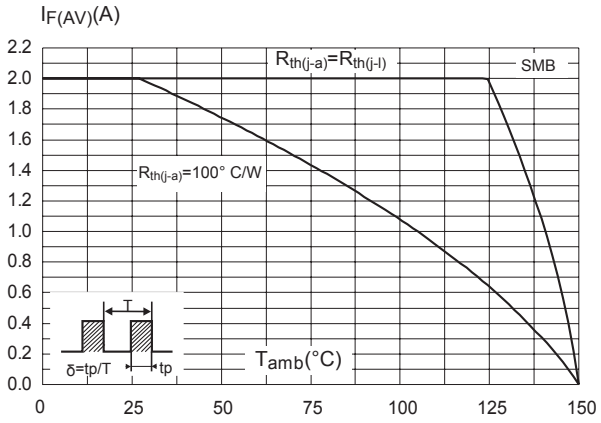


Figure 3. Normalized avalanche power derating versus junction temperature (T_j = 125 °C)

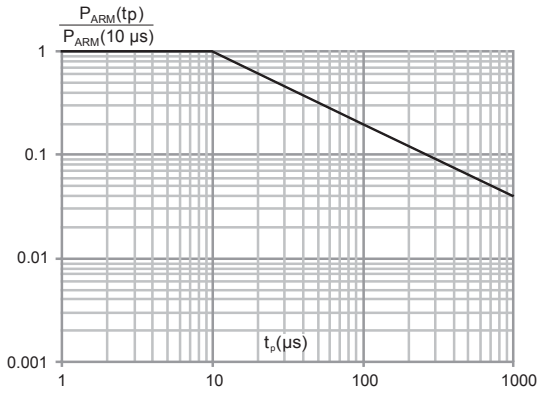


Figure 4. Relative variation of thermal impedance junction to ambient versus pulse duration

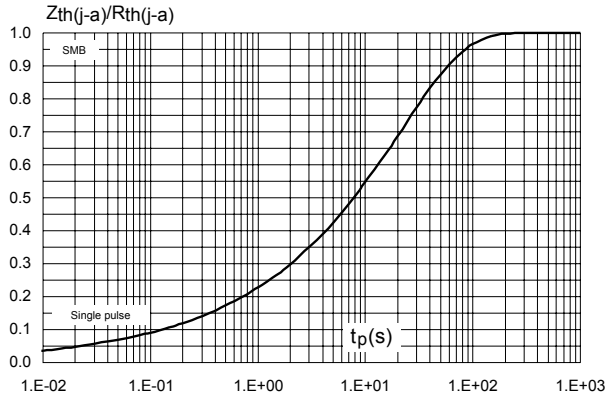


Figure 5. Reverse leakage current versus reverse voltage applied (typical values)

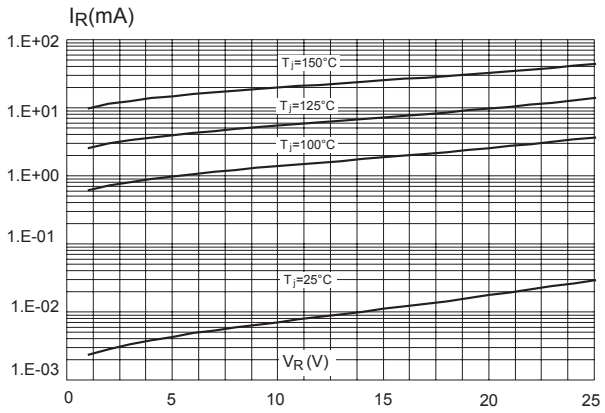


Figure 6. Junction capacitance versus reverse voltage applied (typical values)

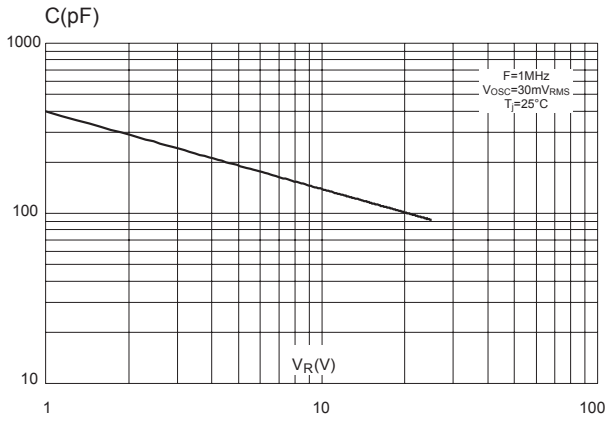


Figure 7. Forward voltage drop versus forward current (high level)

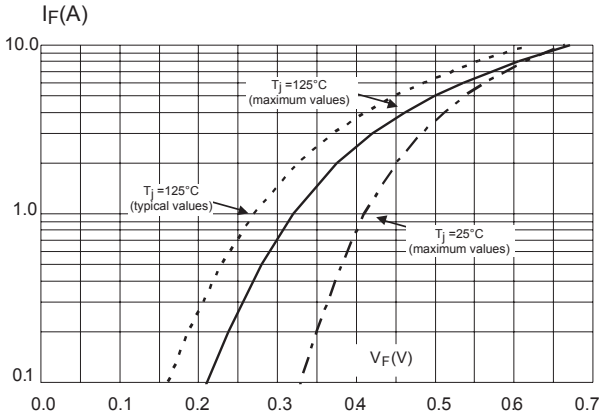


Figure 8. Forward voltage drop versus forward current (low level)

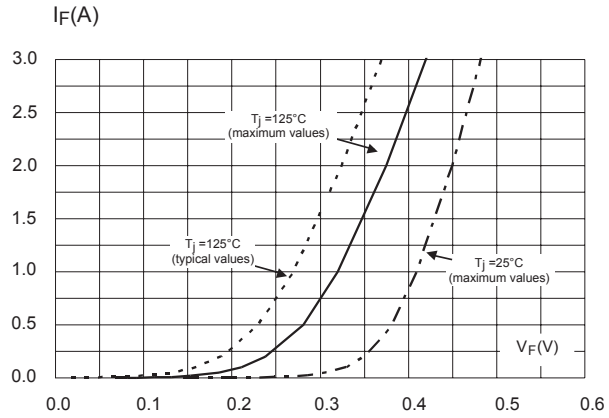


Figure 9. Forward voltage drop versus forward current (typical values)

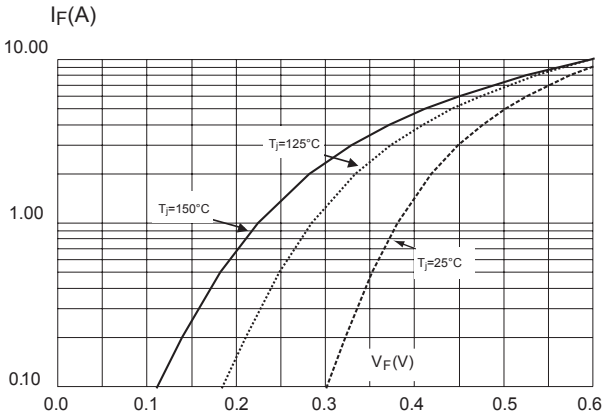
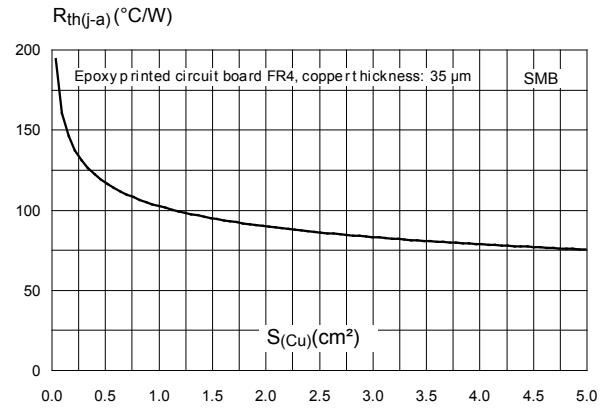
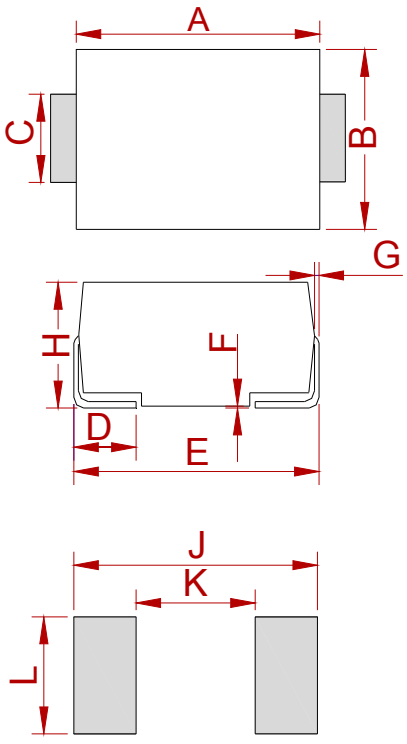


Figure 10. Thermal resistance junction to ambient versus copper surface under each lead



PACKAGE MECHANICAL DATA



DO-214AA (SMB)

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
STPS2L25U-MS	DO-214AA (SMB)	2500

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