

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

STPS2L60x-MS

Product specification

Description

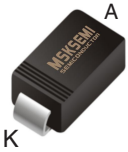
Axial and surface mount power Schottky rectifiers suited to switched mode power supplies and high frequency DC to DC converters.

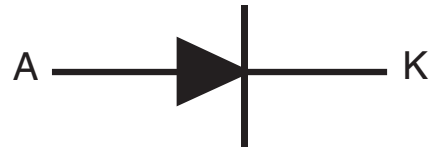
Packaged in SMA, and SMBF this device is especially intended for use in low voltage, high frequency inverters and small battery chargers.

Features

- Negligible switching losses
- Low thermal resistance
- Low forward voltage drop
- Avalanche capability specified

Reference News

STPS2L60A-MS	MARKING
 DO-214AC(SMA)	
STPS2L60UF-MS	MARKING
 SMBF	



Device summary

Symbol	Value
$I_{F(AV)}$	2 A
V_{RRM}	60 V
$T_j(max)$	150 °C
$V_F(max)$	0.55 V

Absolute ratings (limiting values)

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			60	V
$I_{F(RMS)}$	Forward rms voltage			10	A
$I_{F(AV)}$	Average forward current	SMBF	$T_L = 130\text{ °C } \delta = 0.5$	2	A
		SMA	$T_L = 115\text{ °C } \delta = 0.5$		
I_{FSM}	Surge non repetitive forward current			$t_p = 10\text{ ms sinusoidal}$	A
P_{ARM}	Repetitive peak avalanche power			$t_p = 1\text{ }\mu\text{s } T_j = 25\text{ °C}$	W
T_{stg}	Storage temperature range			-65 to + 150	°C
T_j	Maximum operating junction temperature ⁽¹⁾			150	°C
dV/dt	Critical rate of rise of reverse voltage			10000	V/ μs

1. $\frac{dP_{tot}}{dT_j} < \frac{1}{R_{th(j-a)}}$ condition to avoid thermal runaway for a diode on its own heatsink

Thermal resistance

Symbol	Test conditions		Value	Unit
$R_{th(j-l)}$	Junction-lead	SMBF	15	$^{\circ}\text{C/W}$
		SMA	25	

Static Electrical Characteristics

Symbol	Parameter	Test conditions		Min.	Typ.	Max.	Unit
$I_R^{(1)}$	Reverse leakage current	$T_j = 25^{\circ}\text{C}$	$V_R = V_{RRM}$			100	μA
		$T_j = 100^{\circ}\text{C}$			2	10	mA
$V_F^{(1)}$	Forward voltage drop	$T_j = 25^{\circ}\text{C}$	$I_F = 2\text{ A}$			0.60	V
		$T_j = 125^{\circ}\text{C}$			0.51	0.55	
		$T_j = 25^{\circ}\text{C}$	$I_F = 4\text{ A}$			0.77	
		$T_j = 125^{\circ}\text{C}$			0.62	0.67	

1. Pulse test: $t_p = 380\text{ }\mu\text{s}$, $\delta < 2\%$
To evaluate the conduction losses use the following equation:
 $P = 0.43 \times I_{F(AV)} + 0.06 I_F^2 (RMS)$

Figure 1. Average forward power dissipation versus average forward current

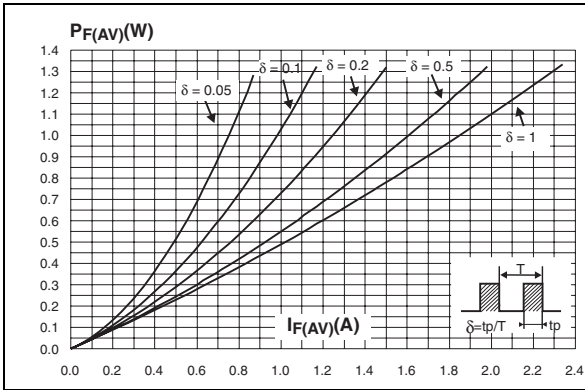


Figure 2. Average forward current versus ambient temperature ($\delta = 0.5$) SMA

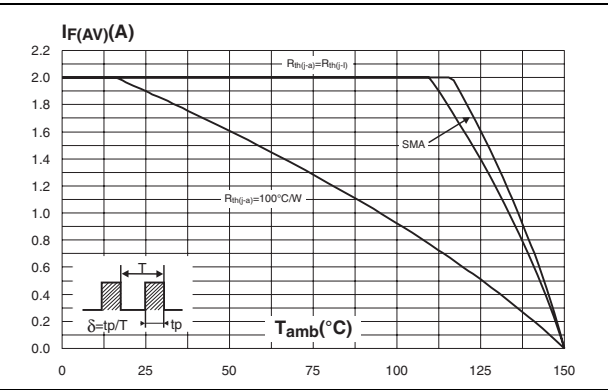


Figure 3. Average forward current versus ambient temperature ($\delta = 0.5$) SBF

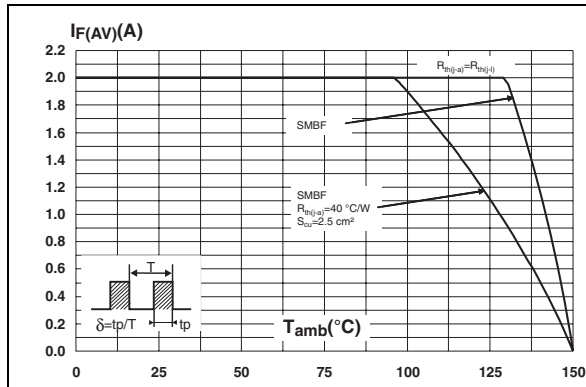


Figure 4. Normalized avalanche power derating versus pulse duration

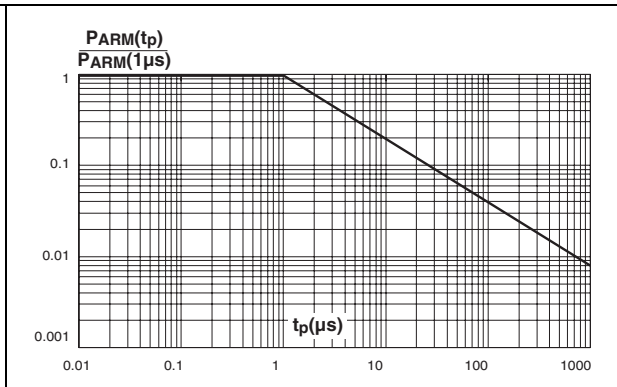


Figure 5. Normalized avalanche power derating versus junction temperature

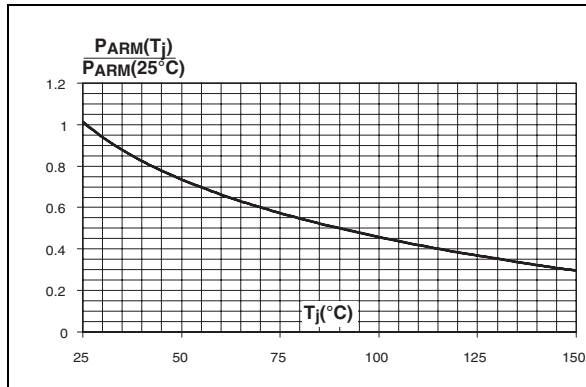


Figure 6. Non repetitive surge peak forward current versus overload duration (maximum values) (SMA)

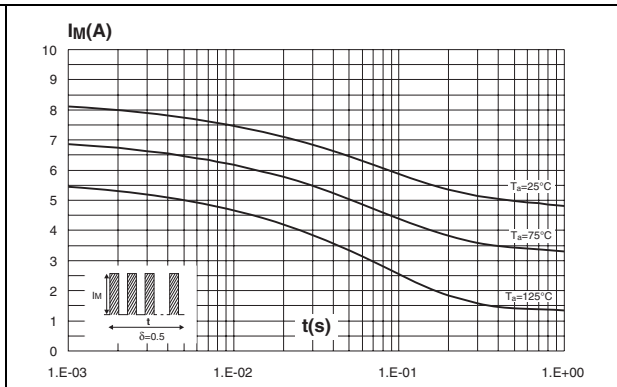


Figure 7. Non repetitive surge peak forward current versus overload duration (maximum values) (SMBF)

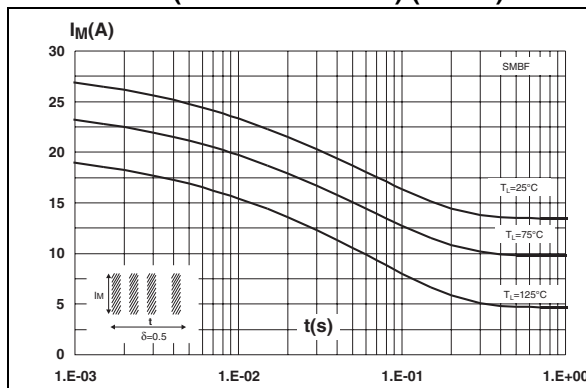


Figure 8. Relative variation of thermal impedance junction to ambient versus pulse duration (SMA)

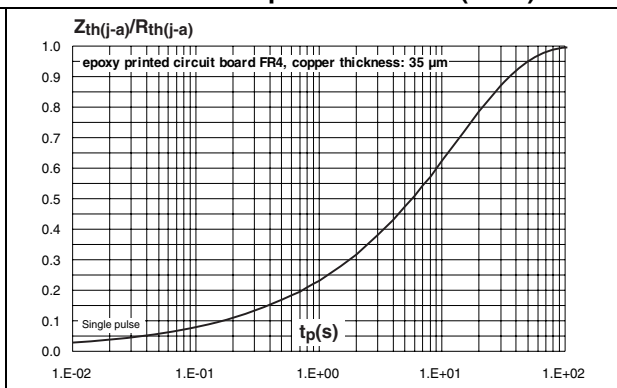


Figure 9. Relative variation of thermal impedance junction to lead versus pulse duration (SMBF)

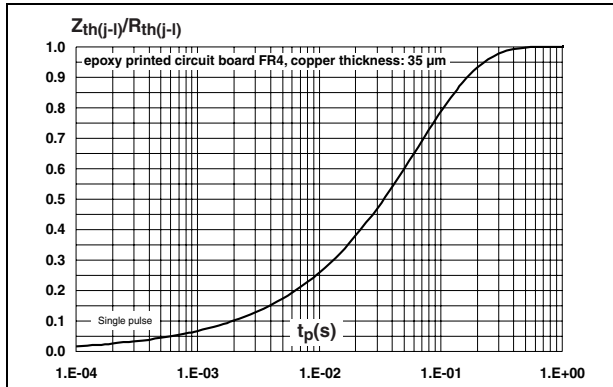


Figure 10. Reverse leakage current versus reverse voltage applied (typical values)

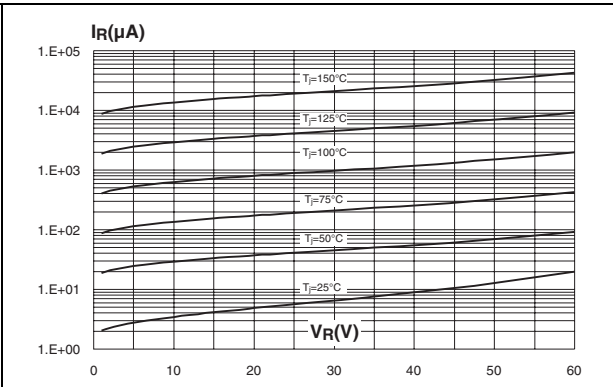


Figure 11. Junction capacitance versus reverse voltage applied (typical values)

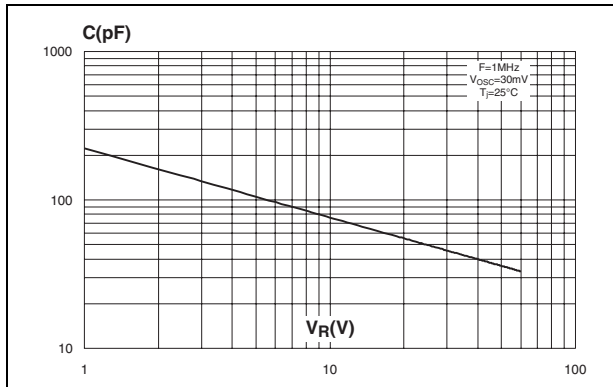


Figure 12. Forward voltage drop versus forward current (maximum values, low level)

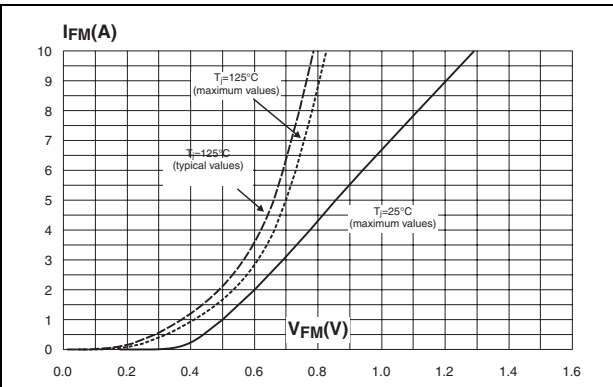
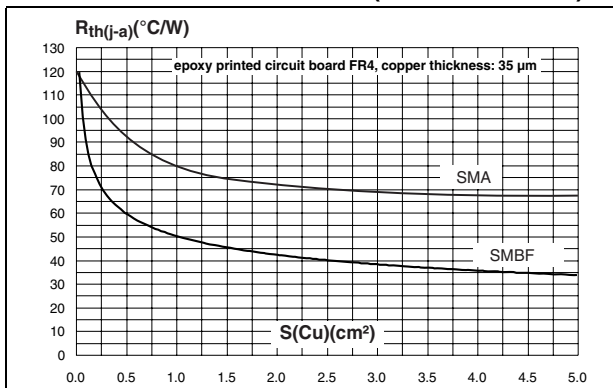
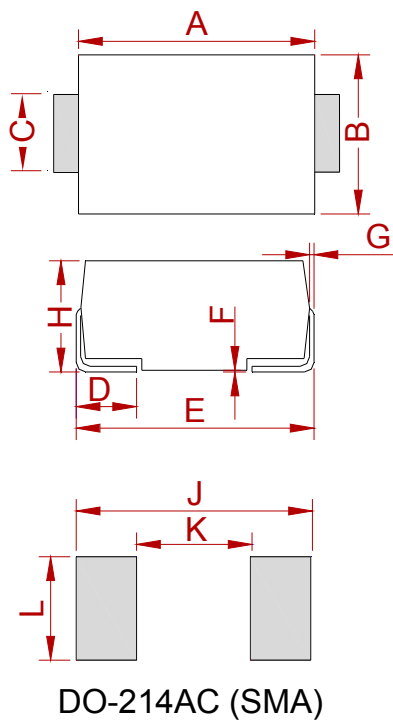


Figure 13. Thermal resistance junction to ambient versus copper surface under each lead (SMA and SMBF)



PACKAGE MECHANICAL DATA

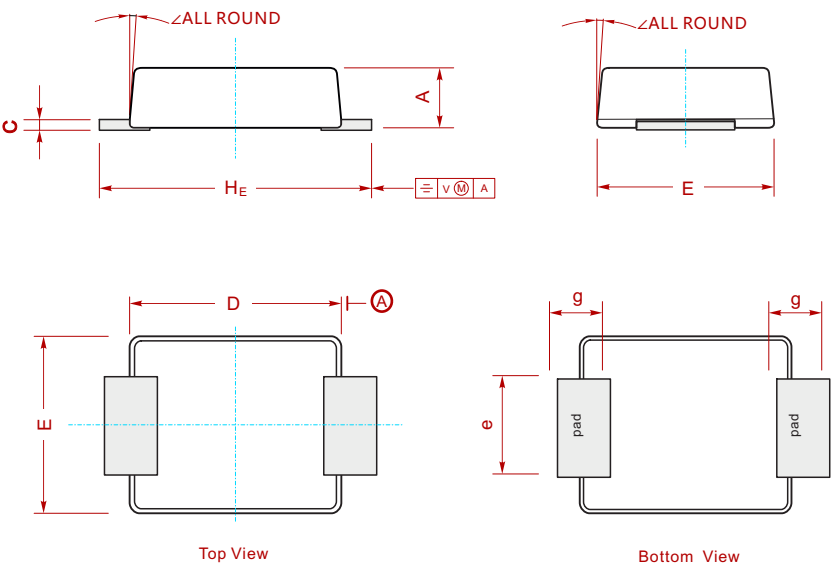


Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.65	0.167	0.183
B	2.50	2.90	0.098	0.114
C	1.35	1.65	0.053	0.065
D	0.76	1.52	0.030	0.060
E	4.93	5.28	0.194	0.208
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	1.98	2.41	0.078	0.095
J	6.50		0.256	
K		2.30		0.090
L	1.70		0.067	

REEL SPECIFICATION

P/N	PKG	QTY
STPS2L60A-MS	DO-214AC (SMA)	5000

PACKAGE MECHANICAL DATA



UNIT		A	C	D	E	H _E	e	g	∠
mm	max	1.3	0.26	4.4	3.7	5.5	2.2	1.0	9°
	min	1.1	0.18	4.2	3.5	5.1	1.9		
mil	max	51	10	173	146	216	86	40	
	min	43	7	165	138	200	75		

Order information

P/N	PKG	QTY
STPS2L60UF-MS	SMBF	5000

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