

Description

The SJPA-L3 is a 30 V, 3.0 A Schottky diode with allowing improvements in V_F characteristic.

The characteristic feature contributes to improving power supply efficiency and to enabling high-frequency systems.

Features

$\bullet~V_{RSM}$ 30 V
$\bullet \ I_{F(AV)}$
• $V_F (I_F = 3.0 \text{ A})$ 0.33 V typ.
• Bare Lead Frame: Pb-free (RoHS Compliant)

• Flammability: Equivalent to UL94V-0

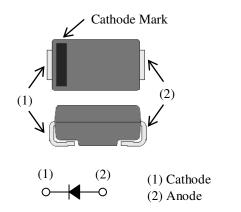
Applications

High speed switching applications as follows:

- DC-DC Converter
- Adapter

Package

SJP



Not to scale

Absolute Maximum Ratings

Unless otherwise specified, $T_A = 25$ °C.

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	V_{RSM}		30	V
Repetitive Peak Reverse Voltage	V_{RM}		30	V
Average Forward Current	$I_{F(AV)}$	See Figure 2 and Figure 3	3.0	Α
Surge Forward Current	I _{FSM}	Half cycle sine wave, positive side, 10 ms, 1 shot	70	A
I ² t Limiting Value	I^2t	$1 \text{ ms} \le t \le 10 \text{ms}$	24.5	A^2s
Junction Temperature	T_{J}		-40 to 125	°C
Storage Temperature	T_{STG}		-40 to 125	°C

Electrical Characteristics

Unless otherwise specified, $T_A = 25$ °C.

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Forward Voltage Drop	$V_{\rm F}$	$I_F = 3.0 \text{ A}$	_	0.33	0.36	V
Reverse Leakage Current ⁽¹⁾	I_R	$V_R = V_{RM}$	_	_	4.5	mA
Reverse Leakage Current under High Temperature	$H \cdot I_R$	$V_R = V_{RM}, T_J = 100 ^{\circ}C$	_		210	mA
Thermal Resistance ⁽²⁾	$R_{\text{th(J-L)}}$		_	_	20	°C/W

Mechanical Characteristics

Parameter	Conditions	Min.	Тур.	Max.	Unit
Package Weight		_	0.072	_	g

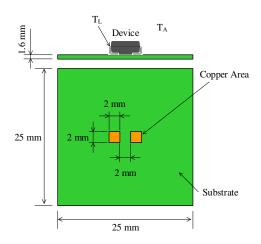


Figure 1. Lead Temperature Measurement Conditions

 $^{^{(1)}}$ There is a trade-off relationship between V_F and I_R . This product is designed to improve V_F characteristic. When using the product, be sure to check the temperature increase caused by I_R loss.

 $^{^{(2)}\,}R_{\text{th}\,(J\text{-}L)}$ is thermal resistance between junction and lead.

Derating Curves

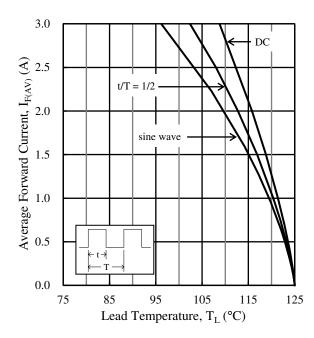


Figure 2. $I_{F(AV)}$ vs. T_L ($T_J = 125$ °C, $V_R = 0$ V)

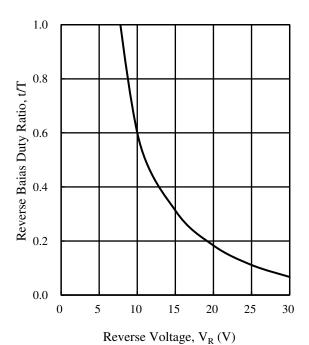


Figure 4. t/T vs. V_R

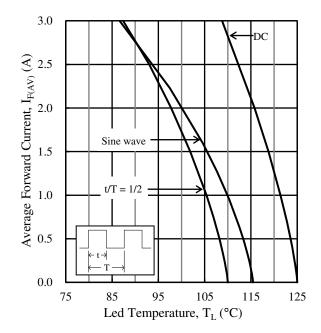


Figure 3. $I_{F(AV)}$ vs. T_L ($T_J = 125$ °C, $V_R = 10$ V)

Characteristic Curves

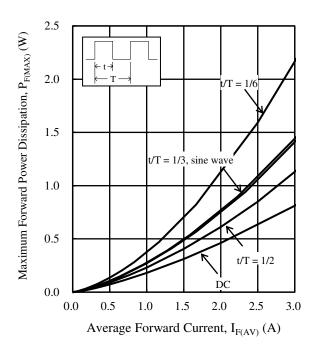


Figure 5. $P_{F(MAX)}$ vs. $I_{F(AV)}$ ($T_J = 125$ °C)

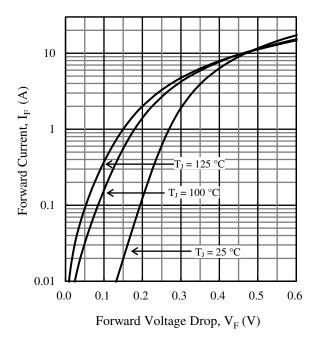


Figure 7. Typical Characteristics: I_F vs. V_F

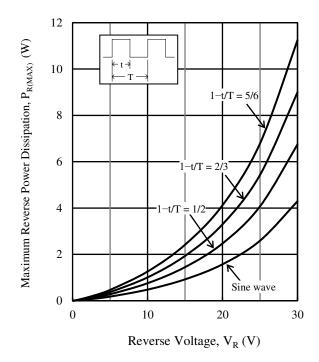


Figure 6. $P_{R(MAX)}$ vs. V_R ($T_J = 125$ °C)

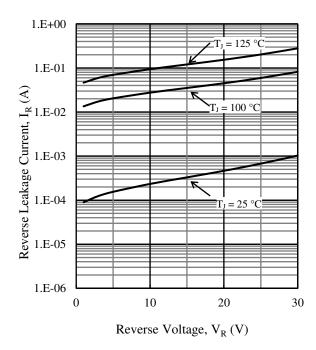


Figure 8. Typical Characteristics: I_R vs. V_R

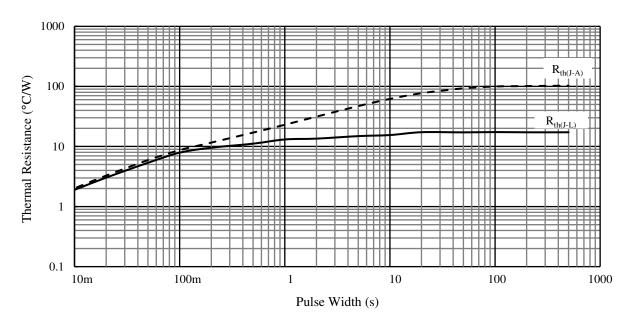
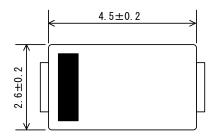
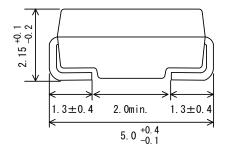


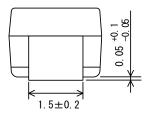
Figure 9. Typical Transient Thermal Resistance Characteristics

Physical Dimensions

• SJP Package







NOTES:

- Dimensions in millimeters
- Bare lead frame: Pb-free (RoHS compliant)
- Moisture Sensitivity Level 1 (MSL 1)
- When soldering the products, it is required to minimize the working time within the following limits:

Flow: 260 °C / 10 s, 1 time

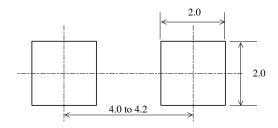
Reflow:

Preheat: 150 °C to 200 °C / 60 s to 120 s

Solder heating: 255 °C / 30 s, 3 times (260 °C peak)

Soldering Iron: 350 °C / 3.5 s, 1 time

• SJP Land Pattern Example



NOTE:

- Dimensions in millimeters

Marking Diagram

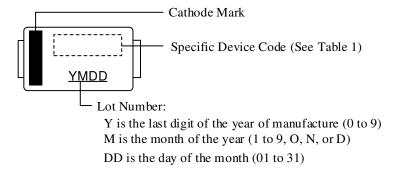


Table 1. Specific Device Code

Specific Device Code	Part Number
AL3	SJPA-L3

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DSGN-CEZ-16003