

$V_{RSM} = 30\text{ V}$, $I_{F(AV)} = 3.0\text{ A}$
Schottky Diode
SJPA-L3

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

- V_{RSM} ----- 30 V
- $I_{F(AV)}$ ----- 3.0 A
- V_F ($I_F = 3.0\text{ A}$) ----- 0.33 V typ.
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0

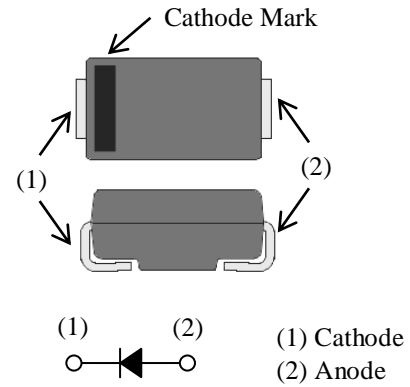
Applications

High speed switching applications as follows:

- DC-DC Converter
- Adapter

Package

SJP



Not to scale

SJPA-L3

Absolute Maximum Ratings

Unless otherwise specified, $T_A = 25\text{ }^\circ\text{C}$.

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	A
Surge Forward Current	I_{FSM}	Half cycle sine wave, positive side, 10 ms, 1 shot	70	A
I^2t Limiting Value	I^2t	$1\text{ ms} \leq t \leq 10\text{ ms}$	24.5	A^2s
Junction Temperature	T_J		-40 to 125	$^\circ\text{C}$
Storage Temperature	T_{STG}		-40 to 125	$^\circ\text{C}$

Electrical Characteristics

Unless otherwise specified, $T_A = 25\text{ }^\circ\text{C}$.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop	V_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	$H \cdot I_R$	$V_R = V_{RM}, T_J = 100\text{ }^\circ\text{C}$	—	—	210	mA
Thermal Resistance ⁽²⁾	$R_{th(J-L)}$		—	—	20	$^\circ\text{C/W}$

Mechanical Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Unit
Package Weight		—	0.072	—	g

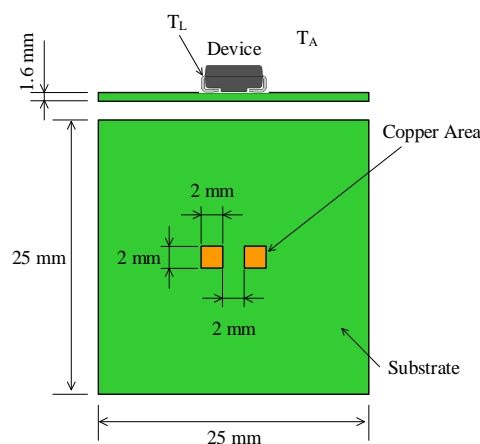


Figure 1. Lead Temperature Measurement Conditions

⁽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⁾ $R_{th(J-L)}$ is thermal resistance between junction and lead.

Derating Curves

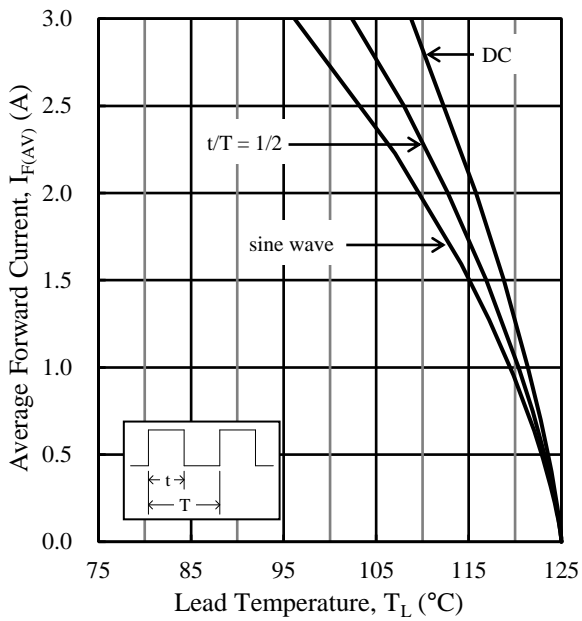


Figure 2. $I_{F(AV)}$ vs. T_L ($T_J = 125$ °C, $V_R = 0$ V)

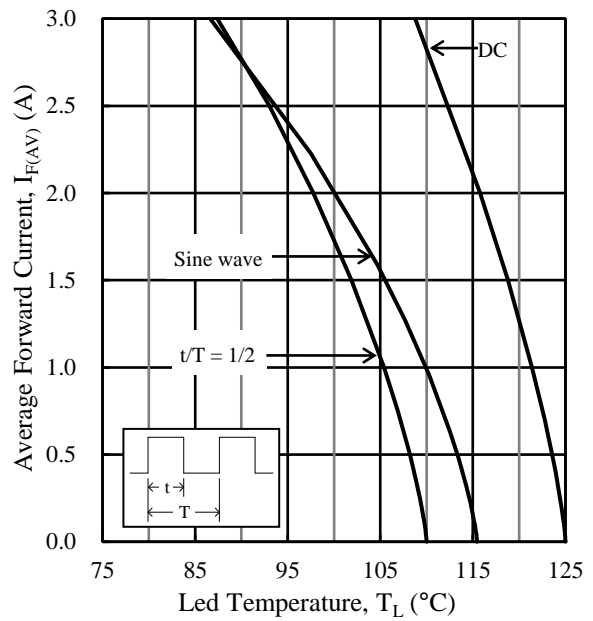


Figure 3. $I_{F(AV)}$ vs. T_L ($T_J = 125$ °C, $V_R = 10$ V)

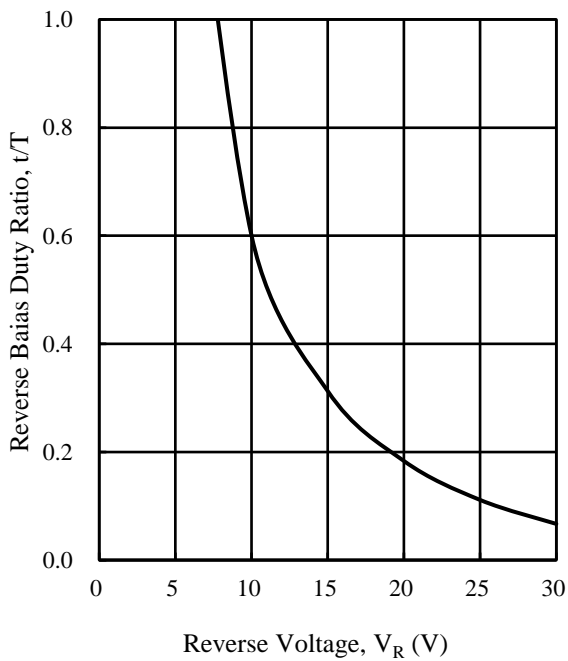


Figure 4. t/T vs. V_R

Characteristic Curves

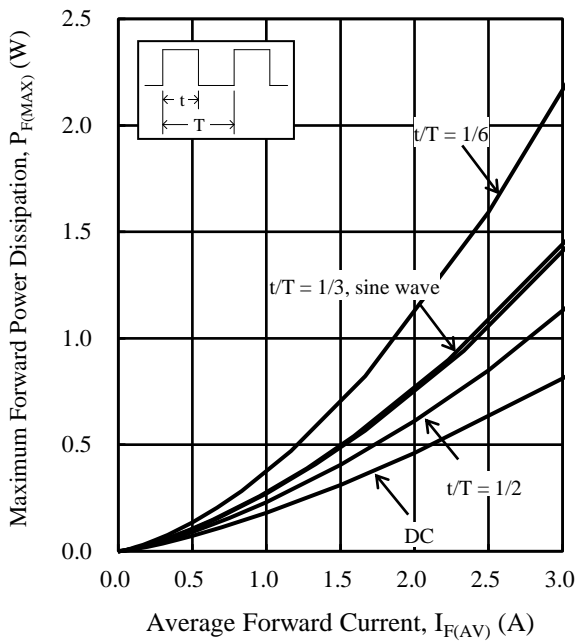


Figure 5. $P_{F(MAX)}$ vs. $I_{F(AV)}$ ($T_J = 125\text{ }^\circ\text{C}$)

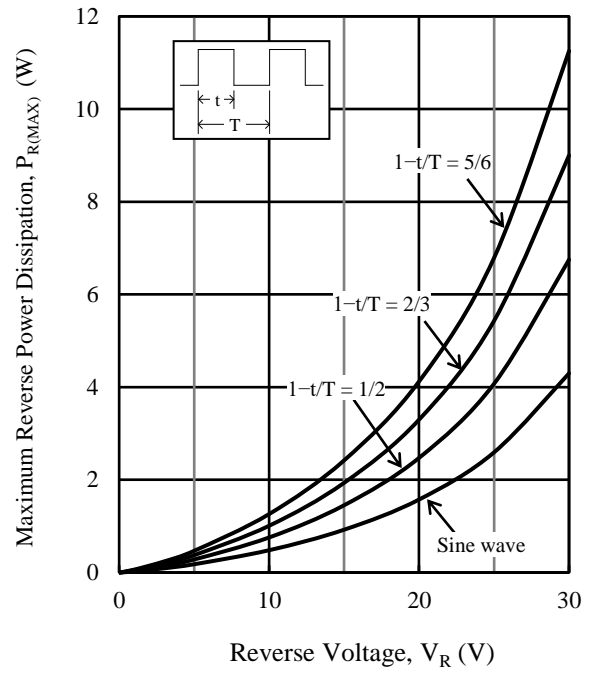


Figure 6. $P_{R(MAX)}$ vs. V_R ($T_J = 125\text{ }^\circ\text{C}$)

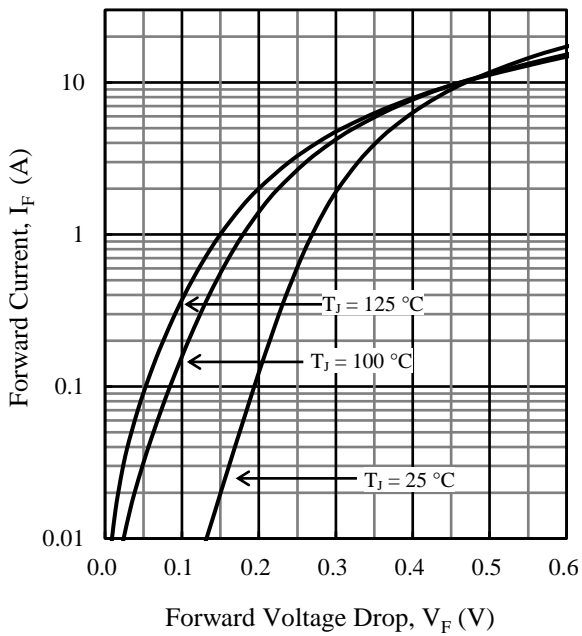


Figure 7. Typical Characteristics: I_F vs. V_F

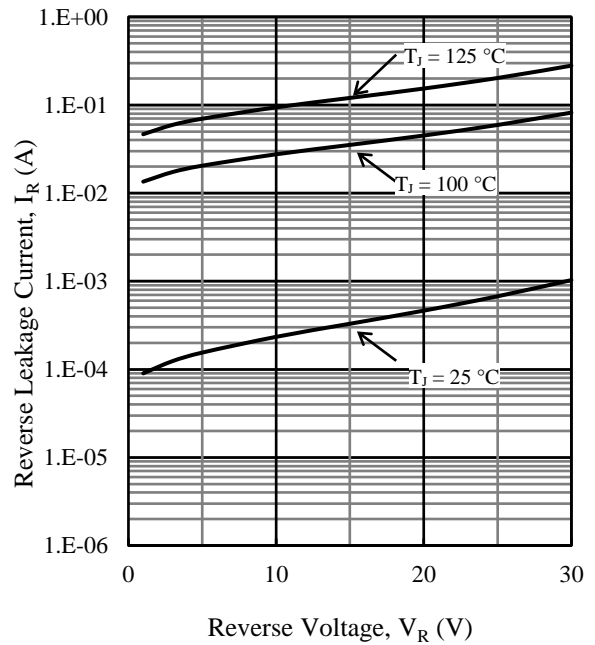


Figure 8. Typical Characteristics: I_R vs. V_R

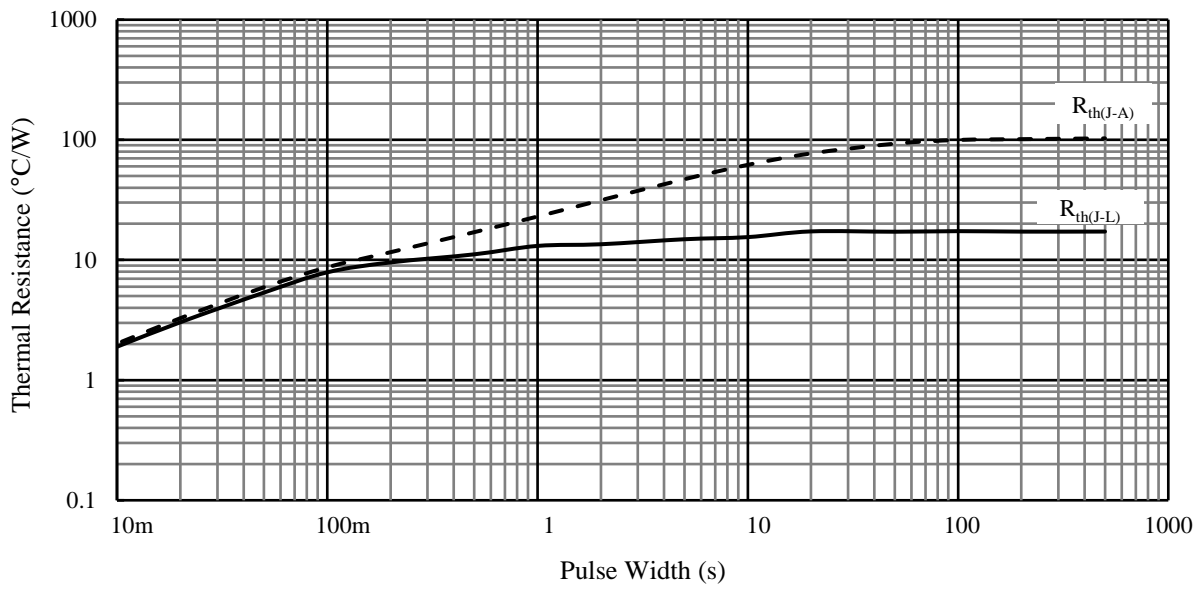
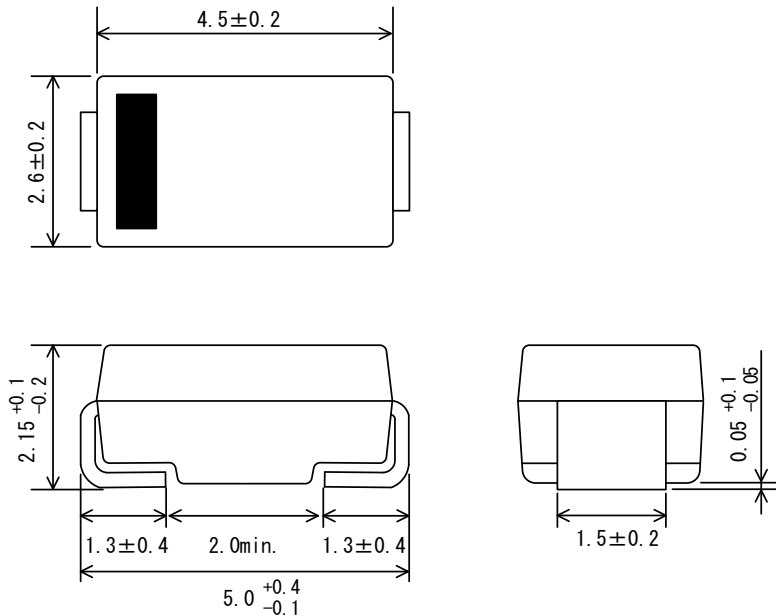


Figure 9. Typical Transient Thermal Resistance Characteristics

SJPA-L3

Physical Dimensions

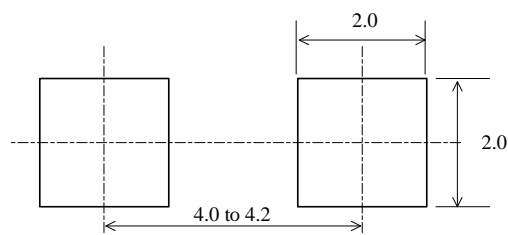
• SJP Package



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: $260\text{ }^{\circ}\text{C}$ / 10 s, 1 time
 - Reflow:
 - Preheat: $150\text{ }^{\circ}\text{C}$ to $200\text{ }^{\circ}\text{C}$ / 60 s to 120 s
 - Solder heating: $255\text{ }^{\circ}\text{C}$ / 30 s, 3 times ($260\text{ }^{\circ}\text{C}$ peak)
 - Soldering Iron: $350\text{ }^{\circ}\text{C}$ / 3.5 s, 1 time

• SJP Land Pattern Example



NOTE:

- Dimensions in millimeters

Marking Diagram

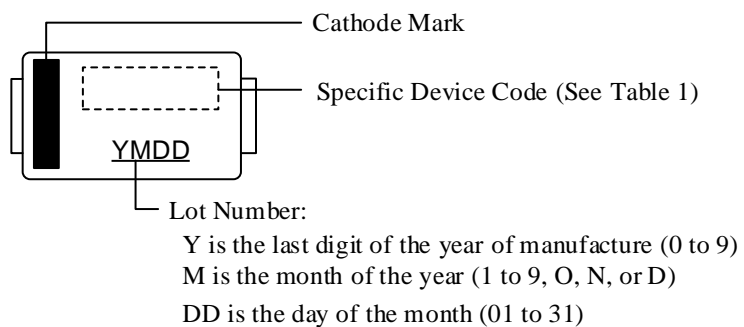


Table 1. Specific Device Code

Specific Device Code	Part Number
AL3	SJPA-L3

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