

**$V_{RSM} = 40\text{ V}$ ,  $I_{F(AV)} = 1.0\text{ A}$**   
**Schottky Diode**  
**SJPB-D4**

**Description**

The SJPB-D4 is a 40 V, 1.0 A Schottky diode with allowing improvements in  $V_F$  and  $I_R$  characteristics. These characteristic features contribute to improving power supply efficiency and to enabling high-frequency systems.

**Features**

- $V_{RSM}$  ----- 40 V
- $I_{F(AV)}$  ----- 1.0 A
- $V_F$  ( $I_F = 1.0\text{ A}$ ) ----- 0.50 V typ.
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0
- Suitable for High Reliability and Automotive Requirement.

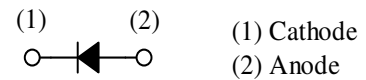
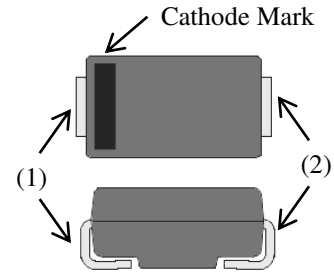
**Applications**

High speed switching applications as follows:

- DC-DC Converter
- Adapter

**Package**

SJP



Not to scale

## SJPB-D4

### Absolute Maximum Ratings

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

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	$V_{RSM}$		40	V
Repetitive Peak Reverse Voltage	$V_{RM}$		40	V
Average Forward Current	$I_{F(AV)}$	See Figure 2 and Figure 3	1.0	A
Surge Forward Current	$I_{FSM}$	Half cycle sine wave, positive side, 10 ms, 1 shot	30	A
$I^2t$ Limiting Value	$I^2t$	$1\text{ ms} \leq t \leq 10\text{ms}$	4.5	$\text{A}^2\text{s}$
Junction Temperature	$T_J$		-40 to 150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$		-40 to 150	$^\circ\text{C}$

### Electrical Characteristics

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop	$V_F$	$I_F = 1.0\text{ A}$	—	0.50	0.55	V
Reverse Leakage Current	$I_R$	$V_R = V_{RM}$	—	—	100	$\mu\text{A}$
Reverse Leakage Current under High Temperature	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	—	35	mA
Thermal Resistance <sup>(1)</sup>	$R_{th(J-L)}$		—	—	20	$^\circ\text{C/W}$

### Mechanical Characteristics

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

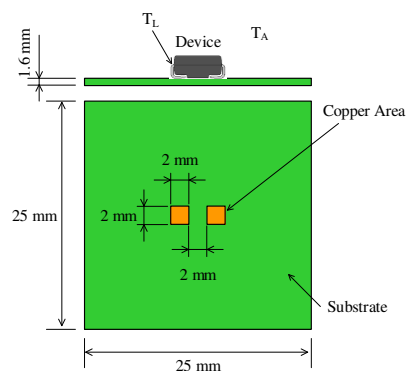


Figure 1. Lead Temperature Measurement Conditions

<sup>(1)</sup>  $R_{th(J-L)}$  is thermal resistance between junction and lead. Lead temperature ( $T_L$ ) is measured near the root of pin (see Figure 1).

Derating Curves

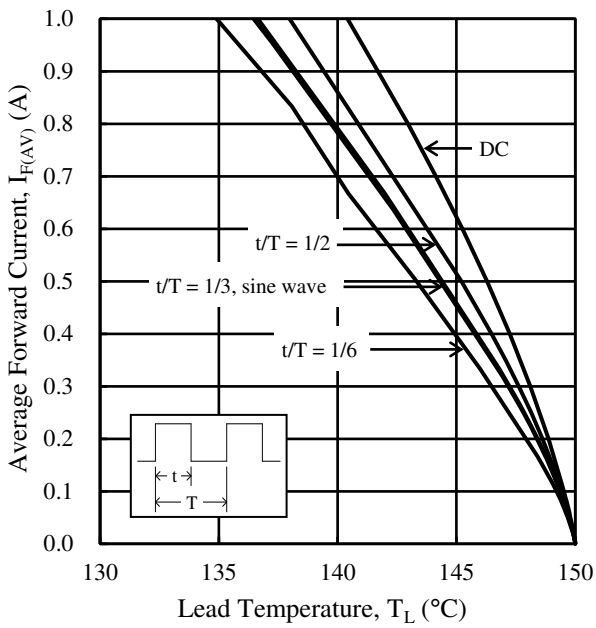


Figure 2.  $I_{F(AV)}$  vs.  $T_L$  ( $T_J = 150$  °C,  $V_R = 0$  V)

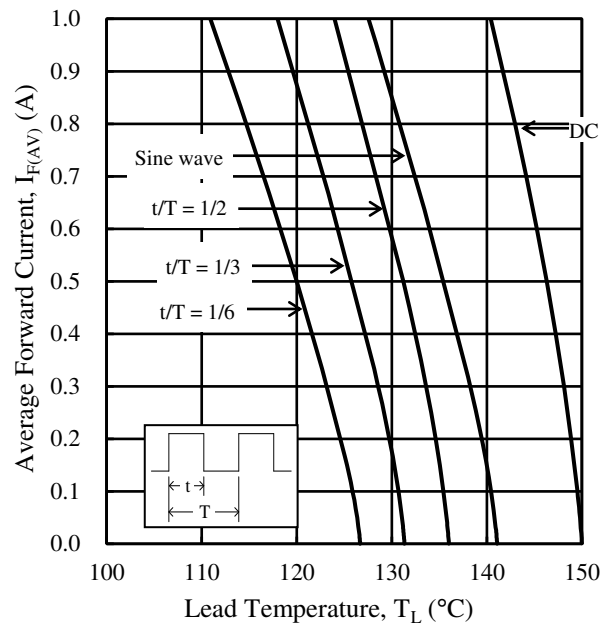


Figure 3.  $I_{F(AV)}$  vs.  $T_L$  ( $T_J = 150$  °C,  $V_R = 40$  V)

Characteristic Curves

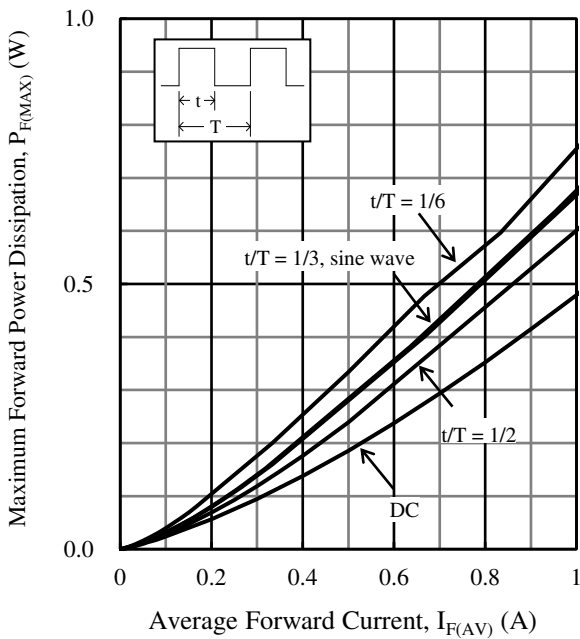


Figure 4.  $P_{F(MAX)}$  vs.  $I_{F(AV)}$  ( $T_J = 150\text{ }^\circ\text{C}$ )

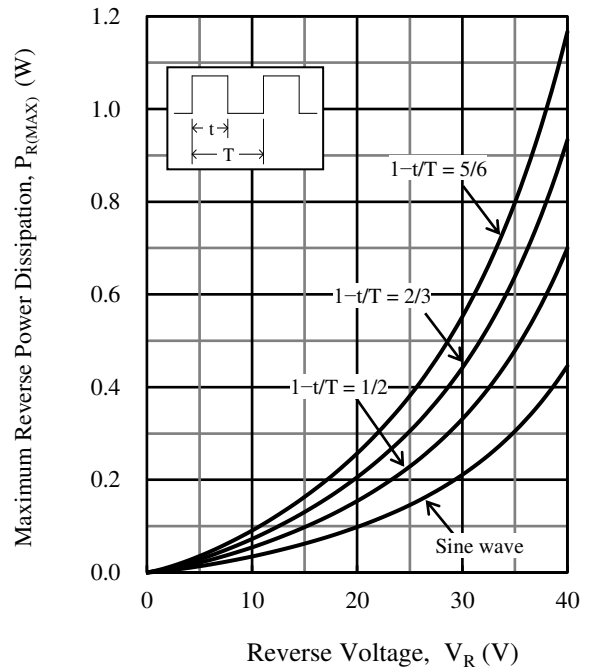


Figure 5.  $P_{R(MAX)}$  vs.  $V_R$  ( $T_J = 150\text{ }^\circ\text{C}$ )

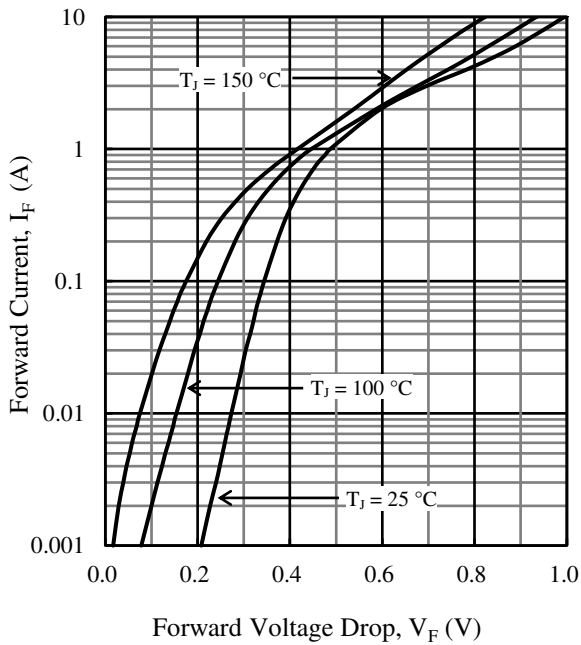


Figure 6. Typical Characteristics:  $I_F$  vs.  $V_F$

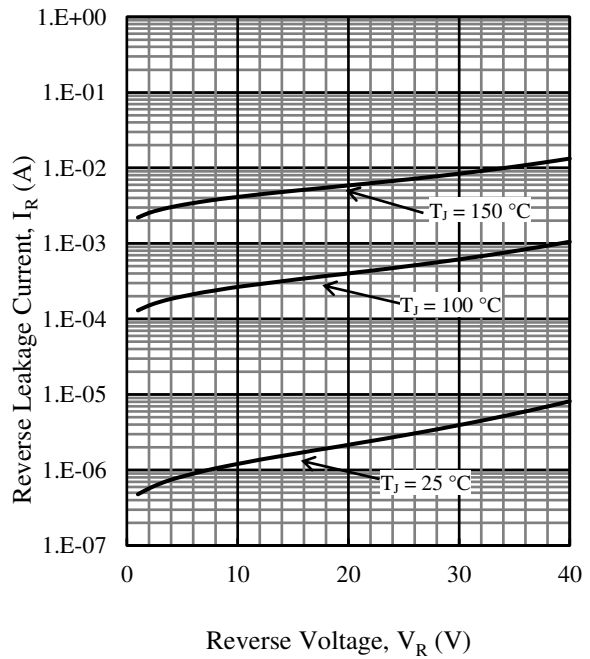


Figure 7. Typical Characteristics:  $I_R$  vs.  $V_R$

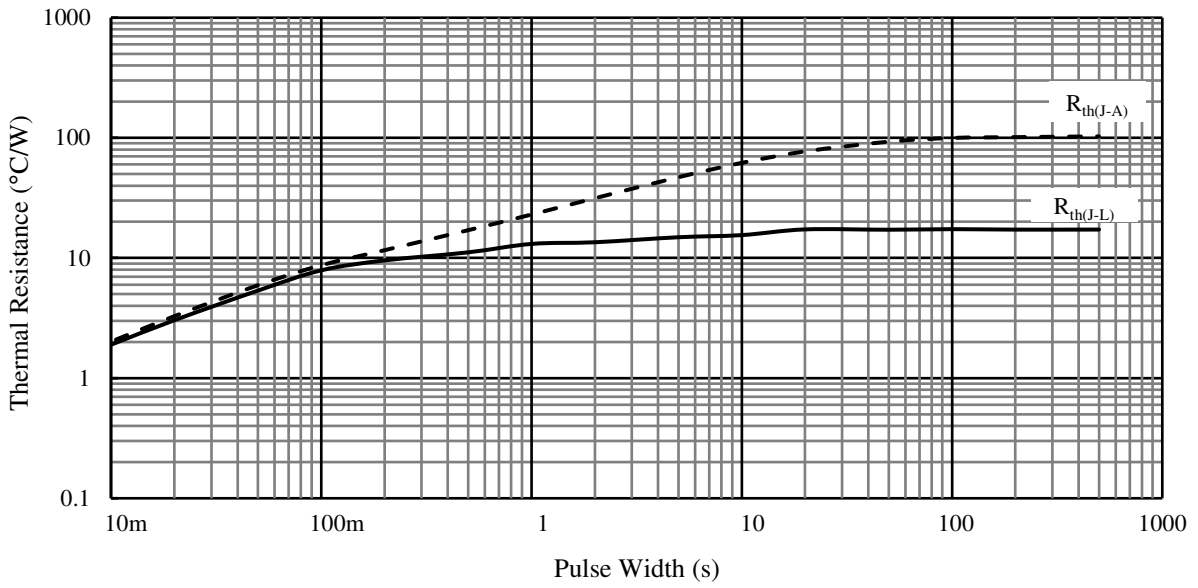
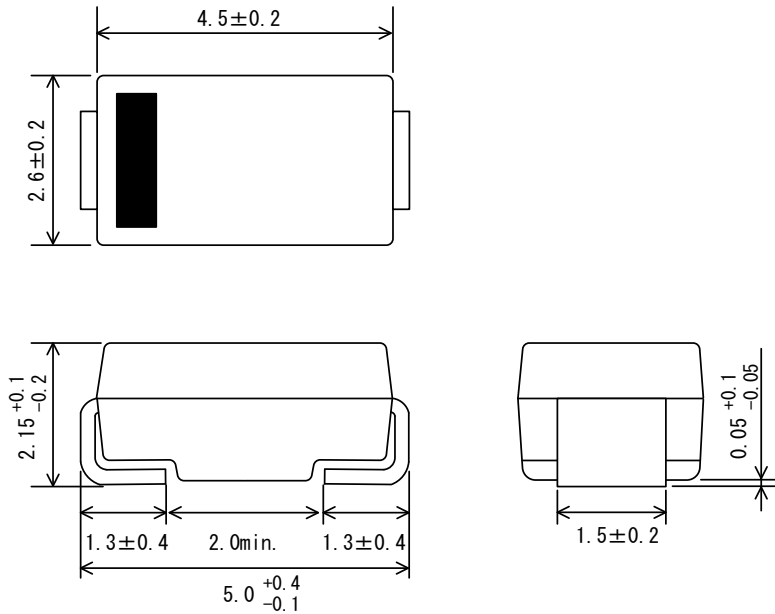


Figure 8. Typical Transient Thermal Resistance Characteristics

# SJPB-D4

## Physical Dimensions

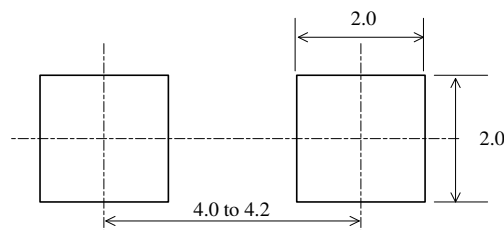
### • SJP Package



### 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 / 30s, 3 times (260 °C peak)
  - Soldering Iron: 350 °C / 3.5 s, 1 time

### • SJP Land Pattern Example



### NOTE:

- Dimensions in millimeters

## Marking Diagram

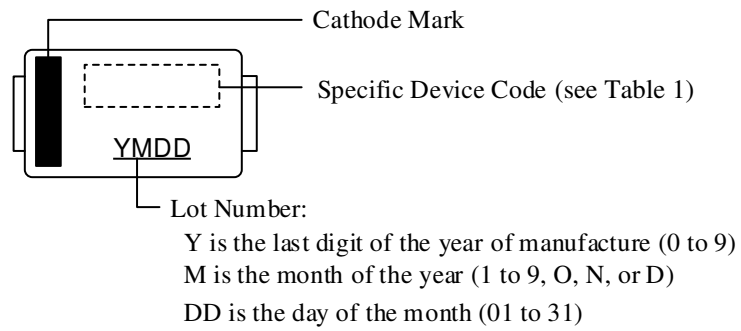


Table 1. Specific Device Code

Specific Device Code	Part Number
BD4	SJPB-D4

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