

$V_{RSM} = 150\text{ V}$ ,  $I_{F(AV)} = 5.0\text{ A}$

Schottky Diode

**SJPE-T15**

### Description

The SJPE-T15 is a 150 V, 5.0 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

- $V_{RSM}$  ----- 150 V
- $I_{F(AV)}$  ----- 5.0 A
- $V_F$  ( $I_F = 5.0\text{ A}$ ) ----- 0.90 V typ.
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0
- Suitable for High Reliability and Automotive Requirement

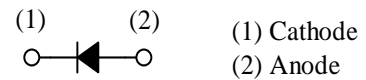
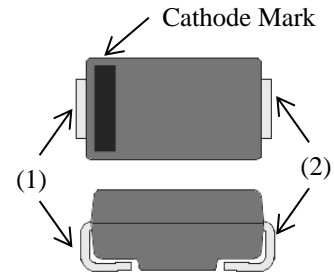
### Applications

High speed switching applications as follows:

- DC-DC Converter
- Adapter

### Package

SJP



Not to scale

**Absolute Maximum Ratings**

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

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	$V_{RSM}$		150	V
Repetitive Peak Reverse Voltage	$V_{RM}$		150	V
Average Forward Current	$I_{F(AV)}$	See Figure 2 and Figure 3	5.0	A
Surge Forward Current	$I_{FSM}$	Half cycle sine wave, positive side, 10 ms, 1 shot	75	A
$I^2t$ Limiting Value	$I^2t$	$1\text{ ms} \leq t \leq 10\text{ms}$	28	$\text{A}^2\text{s}$
Junction Temperature	$T_J$		-55 to 150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$		-55 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	$V_F$	$I_F = 5.0\text{ A}$	—	0.90	0.95	V
Reverse Leakage Current	$I_R$	$V_R = V_{RM}$	—	—	100	$\mu\text{A}$
Reverse Leakage Current under High Temperature	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	—	25	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

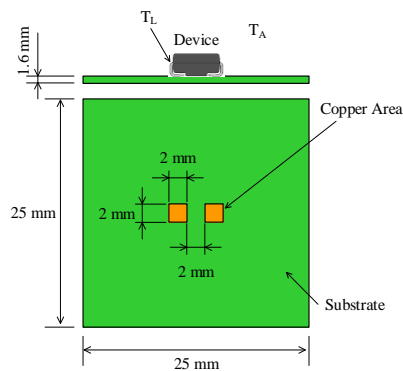


Figure 1. Lead Temperature Measurement Conditions

<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

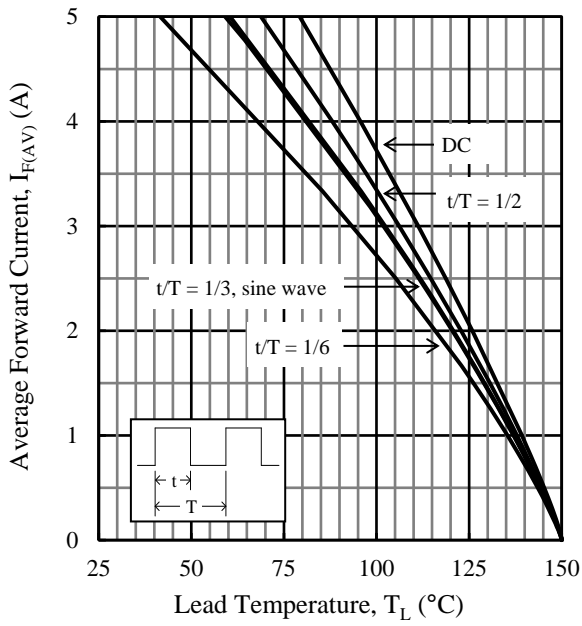


Figure 2.  $I_{F(AV)}$  vs.  $T_L$  ( $T_J = 150\text{ }^\circ\text{C}$ ,  $V_R = 0\text{ V}$ )

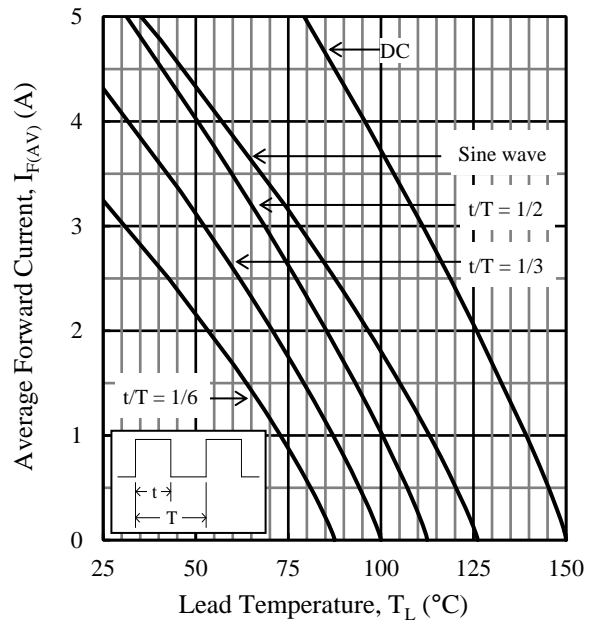


Figure 3.  $I_{F(AV)}$  vs.  $T_L$  ( $T_J = 150\text{ }^\circ\text{C}$ ,  $V_R = 150\text{ V}$ )

Characteristic Curves

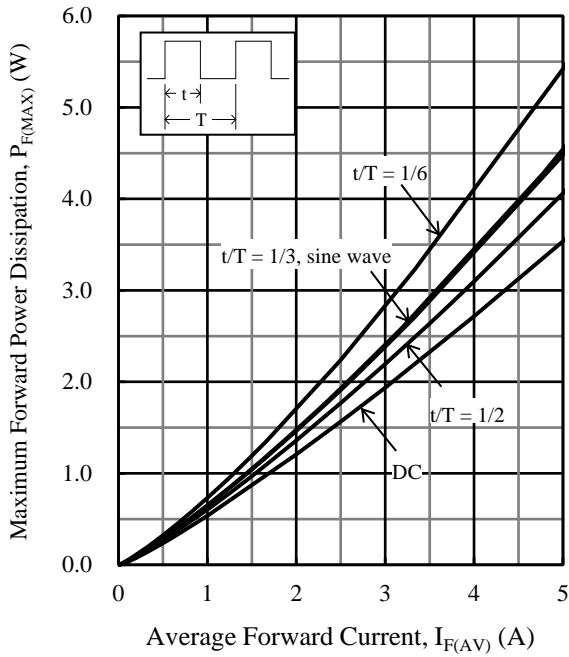


Figure 4.  $P_{F(MAX)}$  vs.  $I_{F(AV)}$  ( $T_J = 150\text{ }^\circ\text{C}$ )

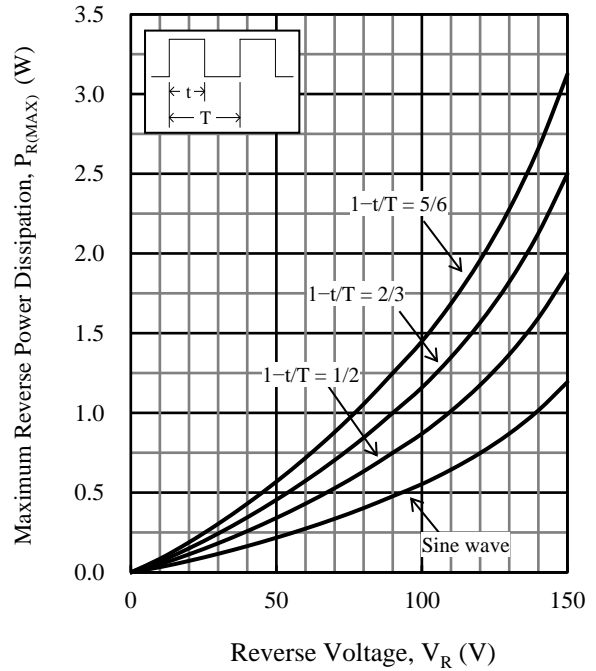


Figure 5.  $P_{R(MAX)}$  vs.  $V_R$  ( $T_J = 150\text{ }^\circ\text{C}$ )

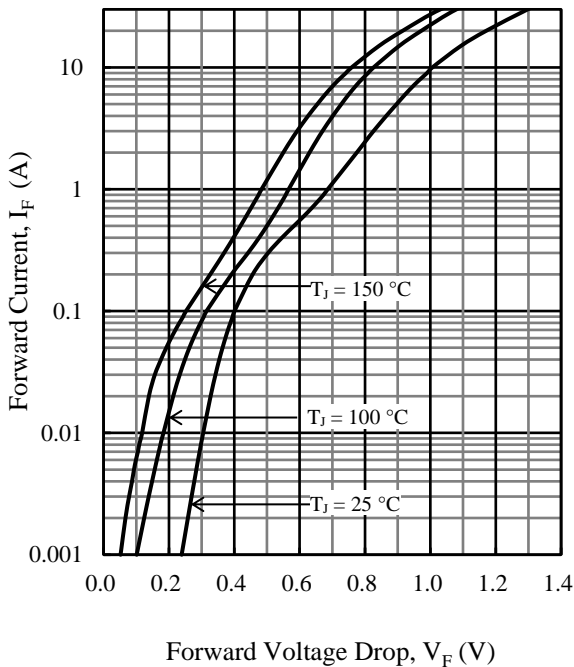


Figure 6. Typical Characteristics:  $I_F$  vs.  $V_F$

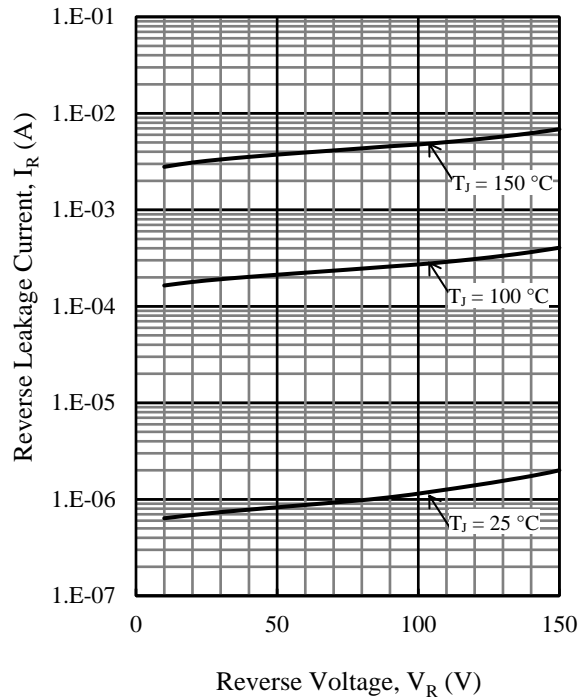


Figure 7. Typical Characteristics:  $I_R$  vs.  $V_R$

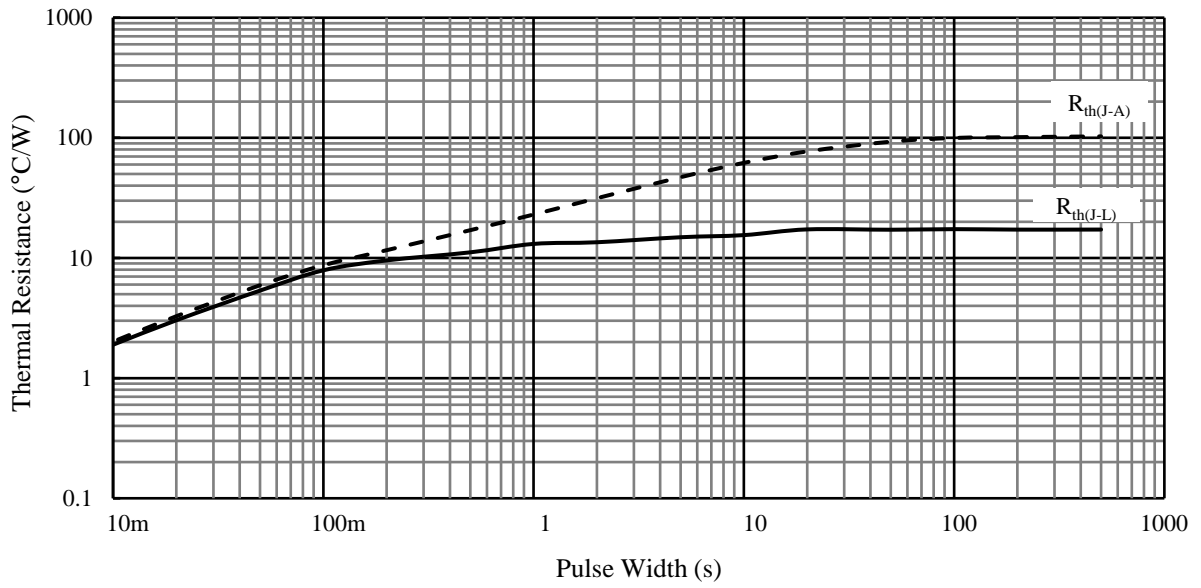
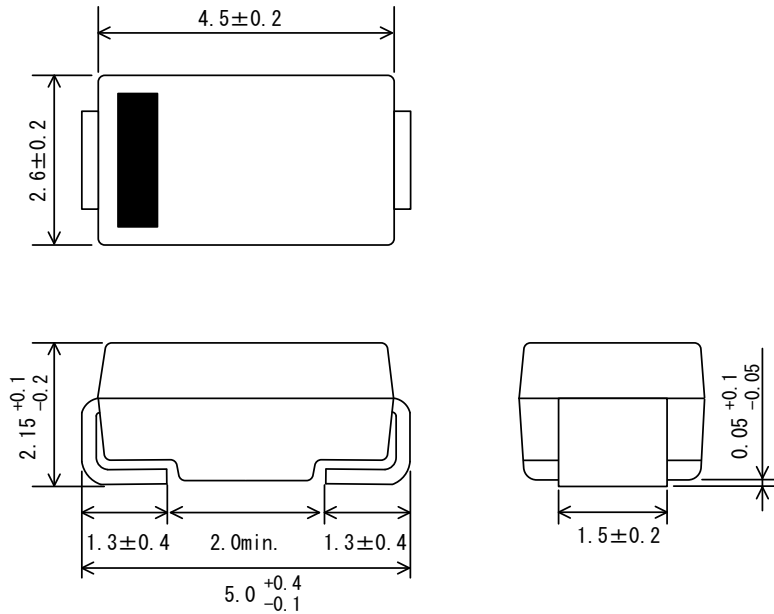


Figure 8. Typical Transient Thermal Resistance Characteristics

# SJPE-T15

## Physical Dimensions

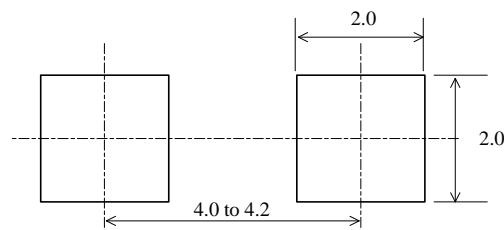
### • SJP Package



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

### • SJP Land Pattern Example



### NOTE:

- Dimensions in millimeters

## Marking Diagram

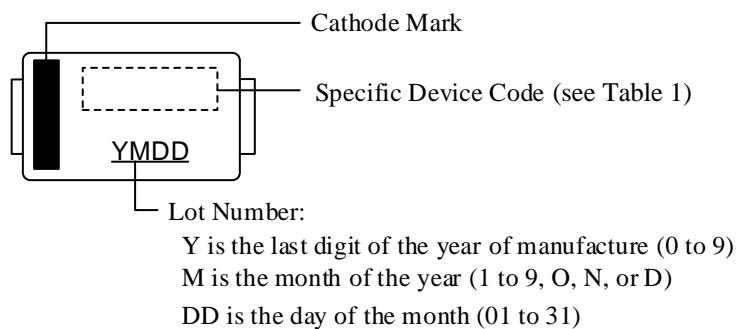


Table 1. Specific Device Code

Specific Device Code	Part Number
ET15	SJPE-T15

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