

V_{RM} = 600 V, I_{F(AV)} = 2.0 A, t_{rr} = 50 ns
Fast Recovery Diode
SJPL-H6

Description

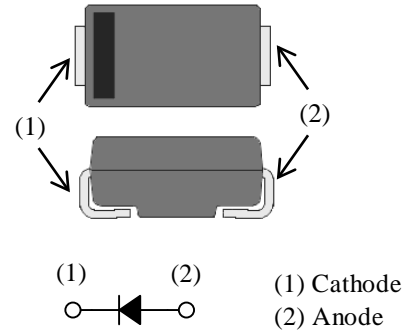
The SJPL-H6 is a fast recovery diode of 600 V / 2.0 A. The maximum t_{rr} of 50 ns is realized by optimizing a life-time control.

Features

- V_{RM}----- 600 V
- I_{F(AV)}----- 2.0 A
- V_F----- 1.5 V
- t_{rr1}----- 50 ns
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Suitable for High Reliability and Automotive Requirement.

Package

SJP



Not to scale

Applications

- Freewheel Diode
(Offline Buck and Buck-boost Converter)

SJPL-H6

Absolute Maximum Ratings

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

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage	V_{RSM}	600	V	
Repetitive Reverse Voltage	V_{RM}	600	V	
Average Forward Current	$I_{F(AV)}$	2.0	A	See Figure 1 and Figure 2
Surge Forward Current	I_{FSM}	30	A	Half cycle sine wave, positive side, 10 ms, 1 shot
I^2t Limiting Value	I^2t	4.5	A^2s	$1\text{ ms} \leq t \leq 10\text{ ms}$
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	$T_J = 25\text{ }^\circ\text{C}$, $I_F = 2.0\text{ A}$	—	—	1.5	V
		$T_J = 100\text{ }^\circ\text{C}$, $I_F = 2.0\text{ A}$	—	1.1	—	V
Reverse Leakage Current	I_R	$V_R = V_{RM}$	—	—	50	μA
Reverse Leakage Current Under High Temperature	$H \cdot I_R$	$V_R = V_{RM}$, $T_J = 150\text{ }^\circ\text{C}$	—	—	100	μA
Reverse Recovery Time	t_{rr1}	$I_F = I_{RP} = 100\text{ mA}$ 90% recovery point, $T_J = 25\text{ }^\circ\text{C}$	—	—	50	ns
	t_{rr2}	$I_F = 100\text{ mA}$, $I_{RP} = 200\text{ mA}$, 75% recovery point, $T_J = 25\text{ }^\circ\text{C}$	—	—	35	ns
Thermal Resistance ⁽¹⁾	$R_{th(J-L)}$		—	—	20	$^\circ\text{C/W}$

⁽¹⁾ $R_{th(J-L)}$ is thermal resistance between junction and lead.

Rating and Characteristic Curves

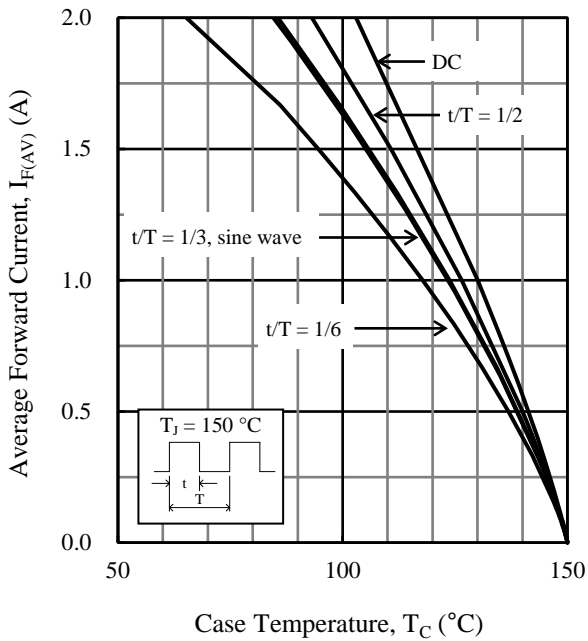


Figure 1. T_C vs. $I_{F(AV)}$ Typical Characteristics ($V_R = 0\text{ V}$)

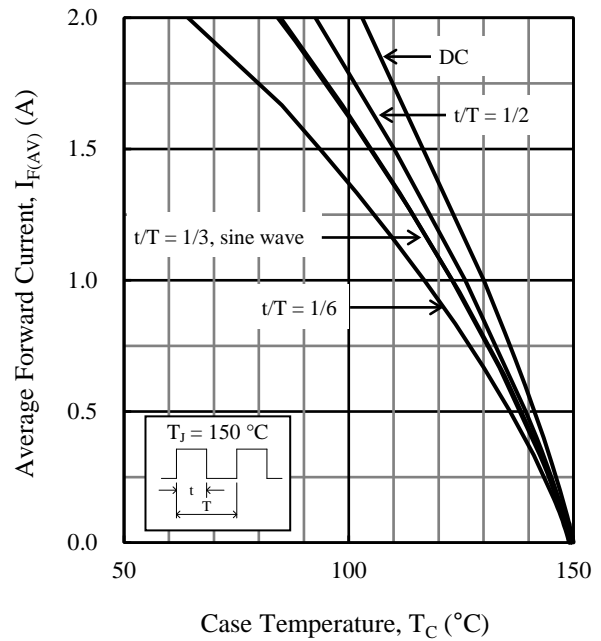


Figure 2. T_C vs. $I_{F(AV)}$ Typical Characteristics ($V_R = 600\text{ V}$)

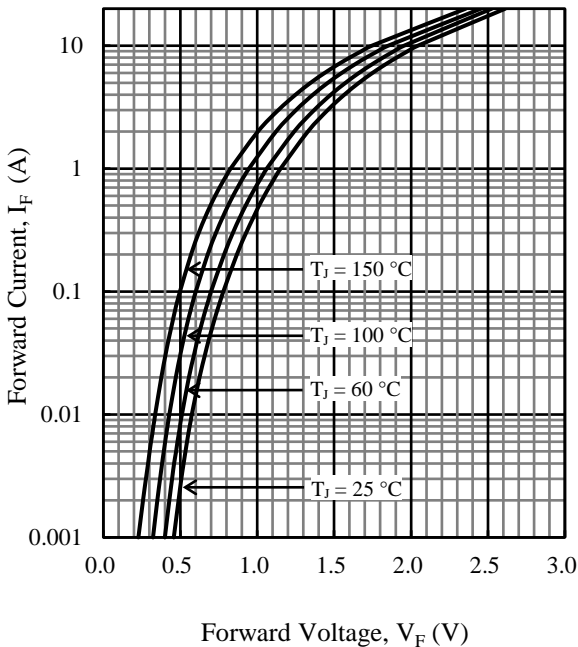


Figure 3. V_F vs. I_F Typical Characteristics

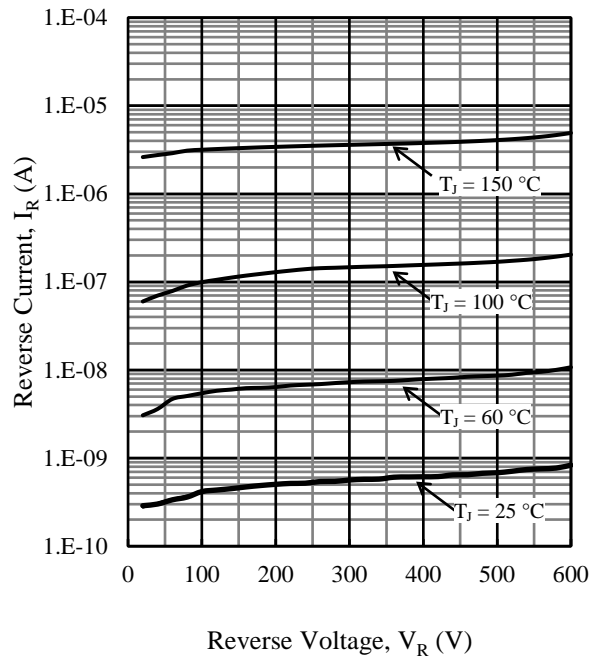
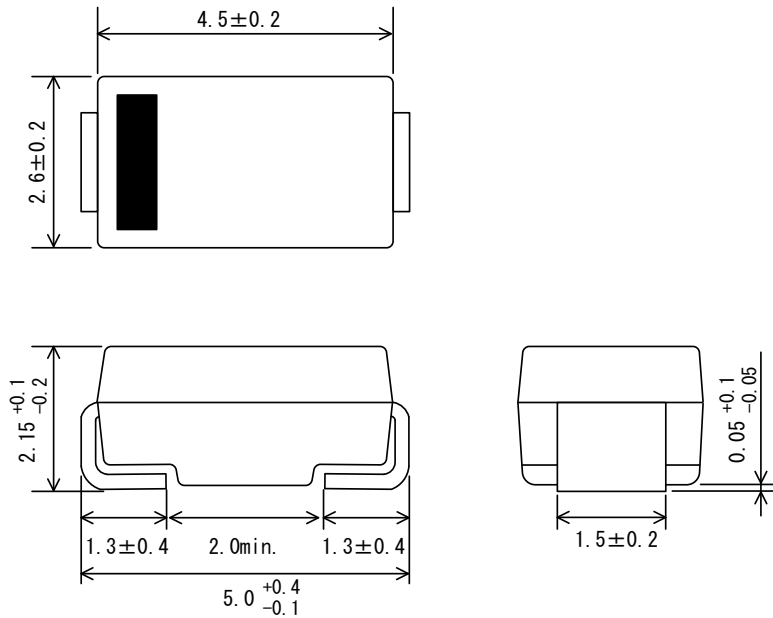


Figure 4. V_R vs. I_R Typical Characteristics

SJPL-H6

Physical Dimensions

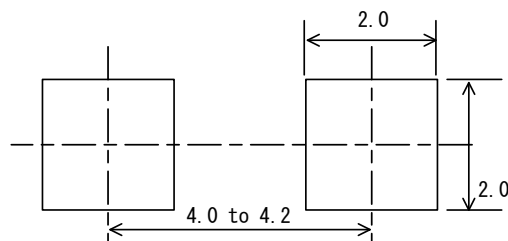
• SJP Package



NOTES:

- Dimensions in millimeters
- Bare lead frame: Pb-free (RoHS compliant)
- When soldering the products, be sure to minimize the working time, within the following limits:
 - Flow: 260 ± 5 °C / 10 ± 1 s, 2 times
 - Soldering Iron: 380 ± 10 °C / 3.5 ± 0.5 s, 1 time
- MSL: JEDEC LEVEL1

• SJP Land Pattern Example



NOTE:

- Dimensions in millimeters

Marking Diagram

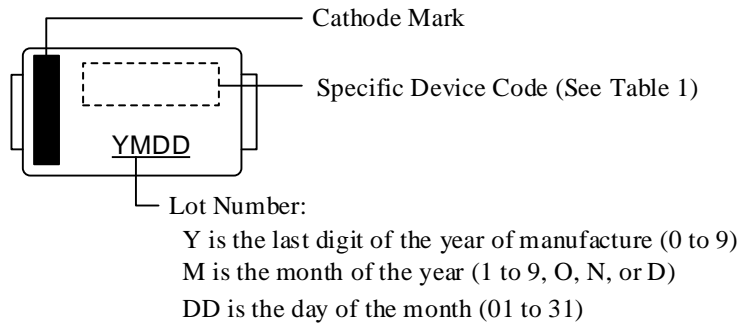


Table 1. Specific Device Code

Specific Device Code	Part Number
LH6	SJPL-H6

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