V_{RM} = 600 V, $I_{F(AV)}$ = 2.0 A, t_{rr} = 30 ns
Fast Recovery Diode

SJPX-H6

Data Sheet

Description

The SJPX-H6 is a fast recovery diode of 600 V / 2.0 A. The maximum t_{rr} of 30 ns is realized by optimizing a life-time control.

Features

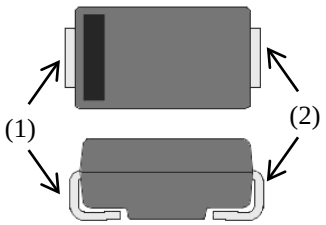
- V_{RM} ---------- 600 V
- $I_{F(AV)}$ ---------- 2.0 A
- V_F ---------- 1.5 V
- t_{rr1} ---------- 30 ns
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0
- Suitable for High Reliability and Automotive Requirement.

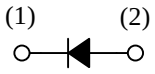
Applications

- Freewheel Diode
  (Offline Buck Converter, Offline Buck-boost Converter, etc.)

Package

SJP





(1) Cathode
(2) Anode

Not to scale

Absolute Maximum Ratings

Unless otherwise specified, T_A = 25 °C.

Parameter	Symbol	Conditions	Rating	Unit
Nonrepetitive Peak Reverse Voltage	V_{RSM}		600	V
Repetitive Peak Reverse Voltage	V_{RM}		600	V
Average Forward Current	$I_{F(AV)}$	See Figure 1 and Figure 2	2.0	A
Surge Forward Current	I_{FSM}	Half cycle sine wave, positive side, 10 ms, 1 shot	20	A
I^2t Limiting Value	I^2t	1 ms ≤ t ≤ 10 ms	2.0	A^2s
Junction Temperature	T_J		−40 to 150	°C
Storage Temperature	T_{STG}		−40 to 150	°C

Electrical Characteristics

Unless otherwise specified, T_A = 25 °C.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop	V_F	T_J = 25 °C, I_F = 2.0 A	—	—	1.5	V
		T_J = 100 °C, I_F = 2.0 A	—	1.1	—	V
Reverse Leakage Current	I_R	$V_R = V_{RM}$	—	—	10	μA
Reverse Leakage Current under High Temperature	$H \cdot I_R$	$V_R = V_{RM}$, T_J = 150 °C	—	—	3.0	mA
Reverse Recovery Time	t_{rr1}	$I_F = I_{RP}$ = 100 mA, 90% recovery point, T_J = 25 °C	—	—	30	ns
	t_{rr2}	I_F = 100 mA, I_{RP} = 200 mA, 75% recovery point, T_J = 25 °C	—	—	20	ns
Thermal Resistance [1]	$R_{th(J-C)}$		—	—	20	°C/W

[1] $R_{th\ (J-C)}$ is thermal resistance between junction and case. Case temperature (T_C) is measured near the root of pin.

Rating and Characteristic Curves

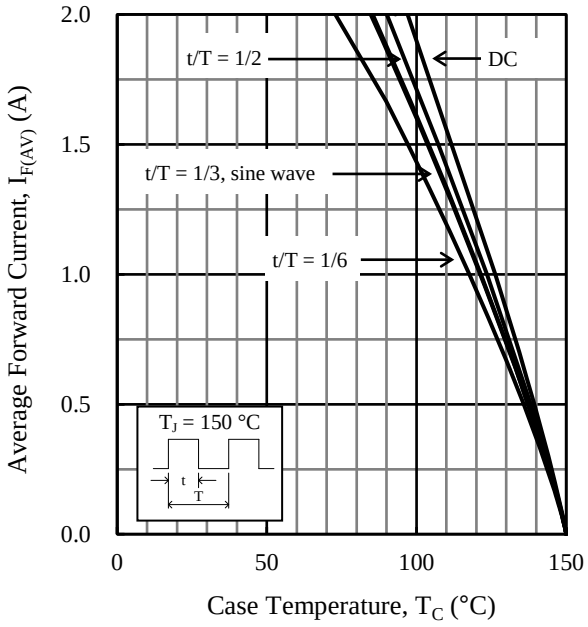


Figure 1. Typical Characteristics: $I_{F(AV)}$ vs. T_C (V_R = 0 V)

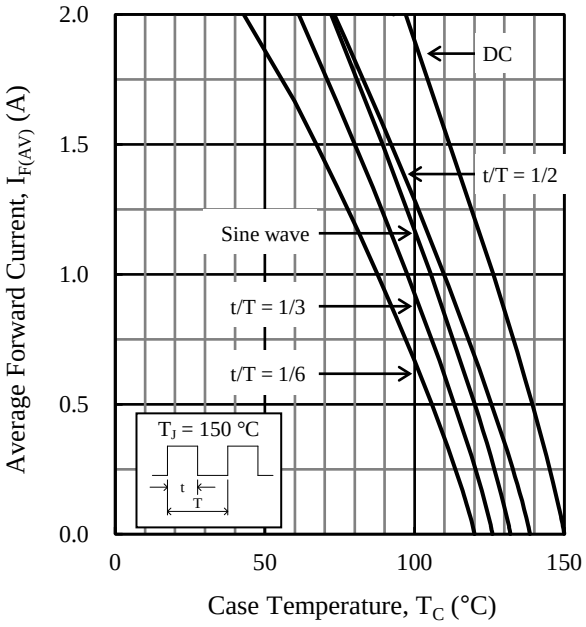


Figure 2. Typical Characteristics: $I_{F(AV)}$ vs. T_C (V_R = 600 V)

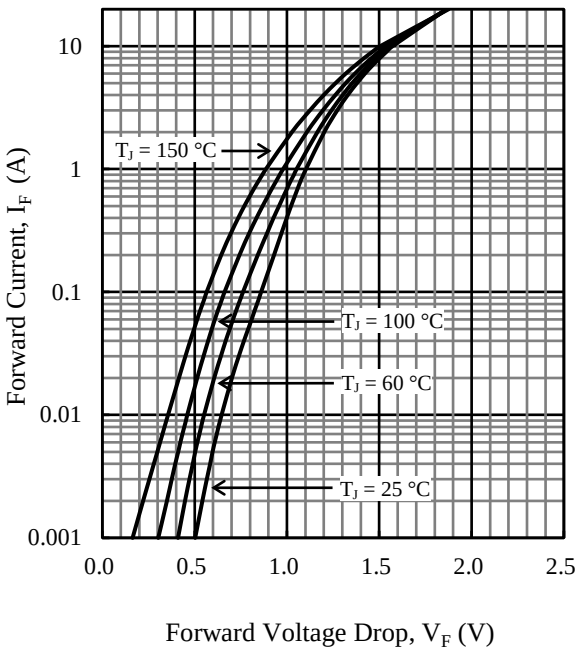


Figure 3. Typical Characteristics: I_F vs. V_F

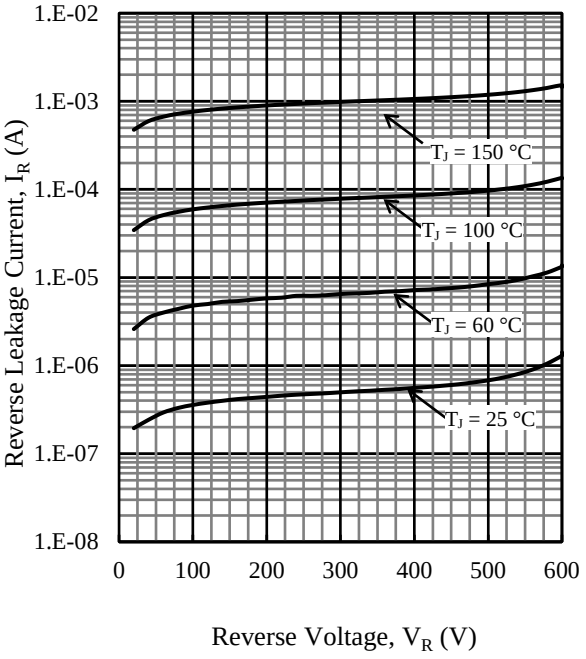
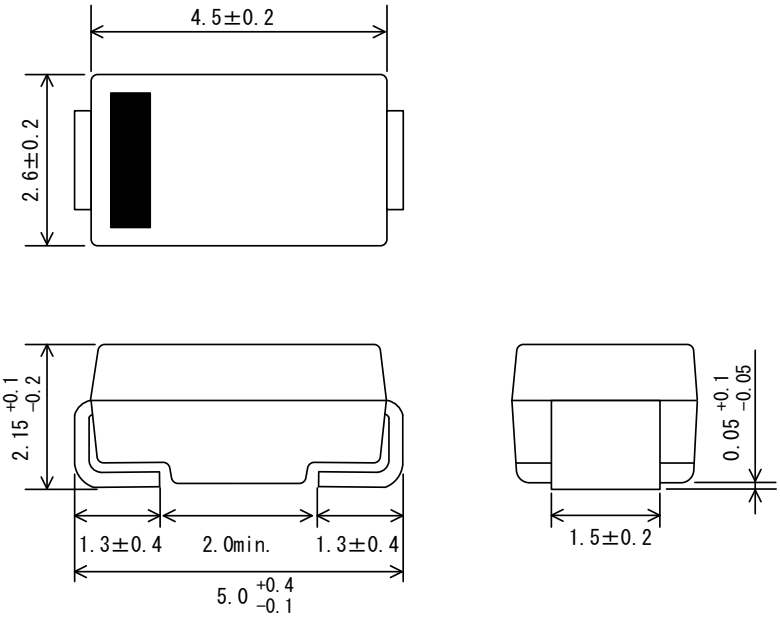


Figure 4. Typical Characteristics: I_R vs. V_R

Physical Dimensions

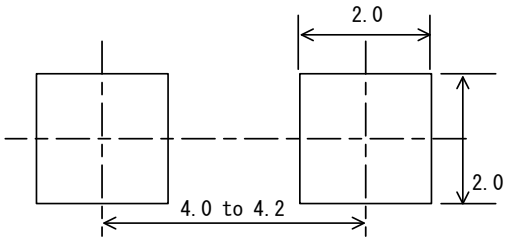
● **SJP Package**



NOTES:

- Dimensions in millimeters
- Bare lead frame: Pb-free (RoHS compliant)
- When soldering the products, it is required 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

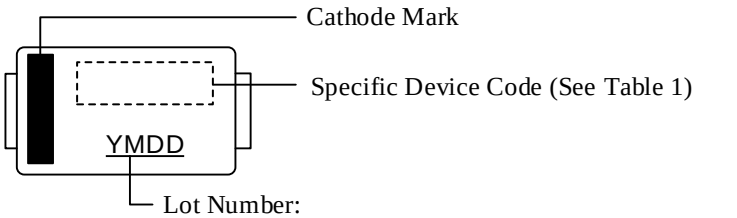


Table 1. Specific Device Code

Specific Device Code	Part Number
XH6	SJPX-H6

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