V_{RM} = 400 V, $I_{F(AV)}$ = 1.5 A, t_{rr} = 50 ns
Fast Recovery Diode

SJPL-F4

Data Sheet

Description

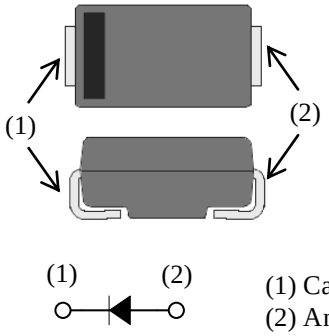
The SJPL-F4 is a fast recovery diode of 400 V / 1.5 A. The maximum t_{rr} of 50 ns is realized by optimizing a life-time control.

Features

- V_{RM} ---------- 400 V
- $I_{F(AV)}$ ---------- 1.5 A
- V_F ---------- 1.3 V
- t_{rr1} ---------- 50 ns
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Suitable for High Reliability and Automotive Requirement.

Package

SJP



(1) Cathode
(2) Anode

Not to scale

Applications

- White Goods
- Audiovisual Equipment
- Lighting Equipment
- Industrial Electronic Equipment
  (Communication Equipment and Factory Automation)
- Secondary Side Rectifier Diode
  (Flyback Converter, LLC Converter, etc.)
- Freewheel Diode
  (Offline Buck and Buck-boost Converter)

Absolute Maximum Ratings

Unless otherwise specified, T_A = 25 °C

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage	V_{RSM}	400	V	
Repetitive Reverse Voltage	V_{RM}	400	V	
Average Forward Current	$I_{F(AV)}$	1.5	A	See Figure 1 and Figure 2
Surge Forward Current	I_{FSM}	25	A	Half cycle sine wave, positive side, 10 ms, 1 shot
I^2t Limiting Value	I^2t	3.125	A^2s	1 ms ≤ t ≤ 10 ms
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 = 1.5 A	—	—	1.3	V
		T_J = 100 °C, I_F = 1.5 A	—	1.0	—	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	—	—	50	μA
Reverse Recovery Time	t_{rr1}	$I_F = I_{RP}$ = 100 mA 90% recovery point, T_J = 25 °C	—	—	50	ns
	t_{rr2}	I_F = 100 mA, I_{RP} = 200 mA, 75% recovery point, T_J = 25 °C	—	—	35	ns
Thermal Resistance [1]	$R_{th(J-L)}$		—	—	20	°C/W

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

Rating and Characteristic Curves

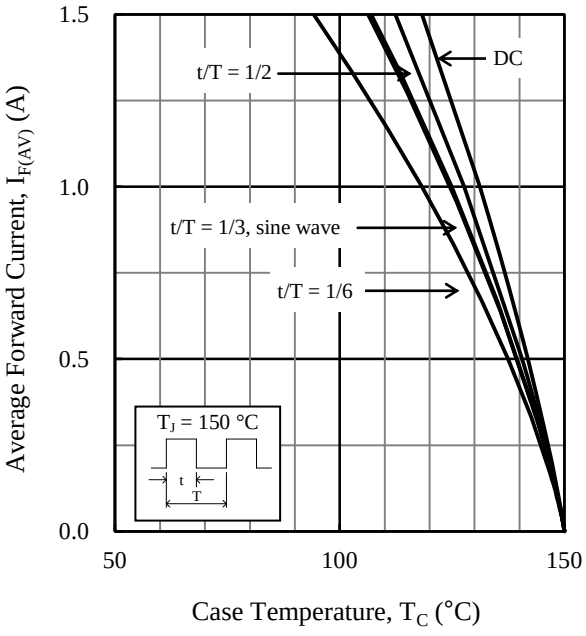


Figure 1. T_C vs. $I_{F(AV)}$ Typical Characteristics (V_R = 0 V)

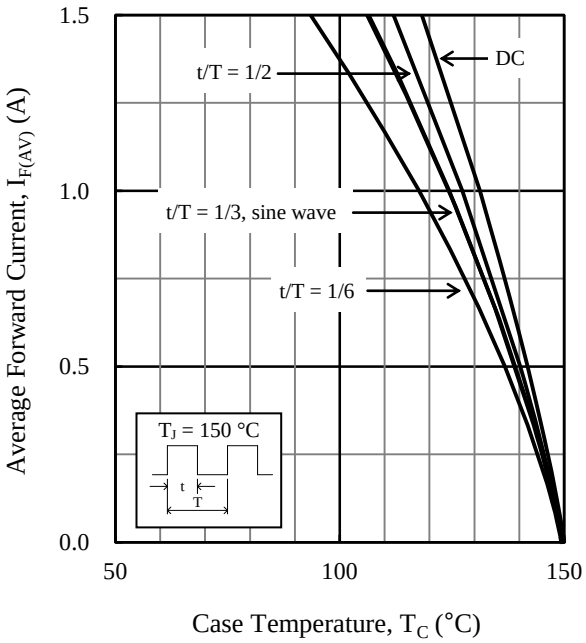


Figure 2. T_C vs. $I_{F(AV)}$ Typical Characteristics (V_R = 400 V)

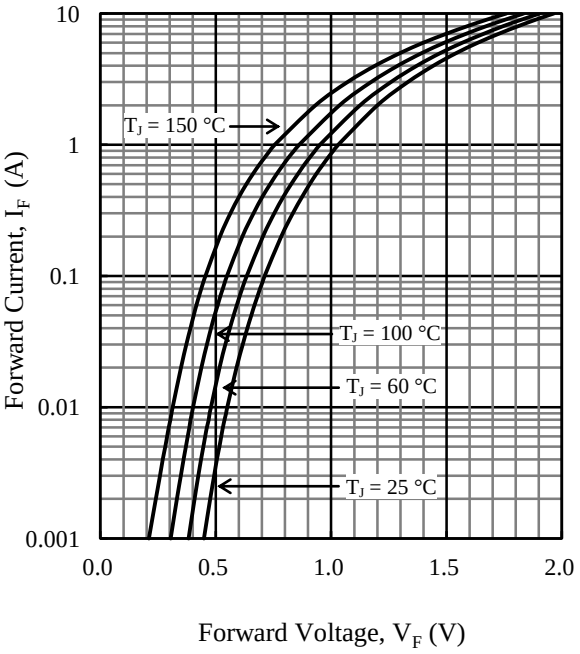


Figure 3. V_F vs. I_F Typical Characteristics

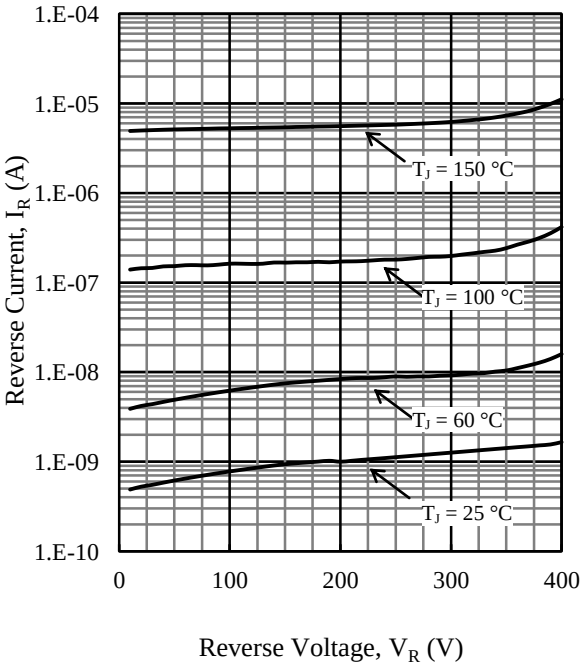
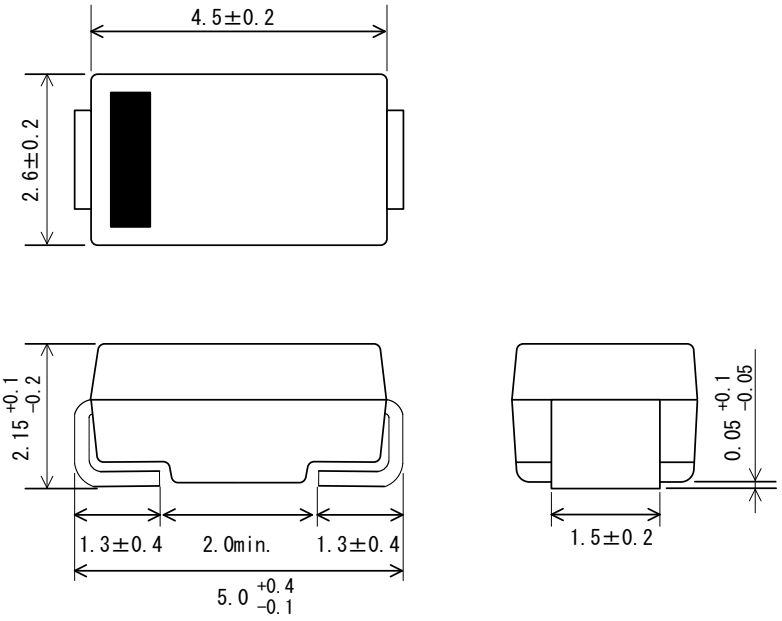


Figure 4. V_R vs. I_R Typical Characteristics

Physical Dimensions

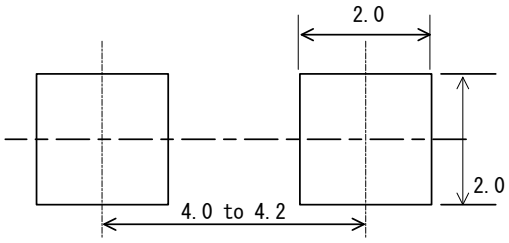
● **SJP Package**



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

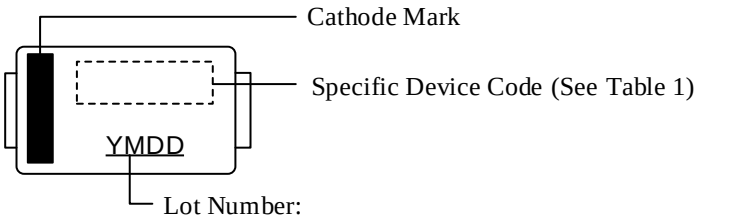


Table 1. Specific Device Code

Specific Device Code	Part Number
LF4	SJPL-F4

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