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

SJPL-F4

Data Sheet

Description

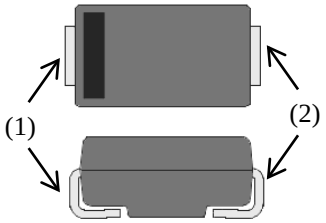
The SJPL-F4 is a fast recovery diode of 400 V / 1.5 A. The maximum t_{rr} of 50 ns is realized by optimizing a life-time control.

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·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

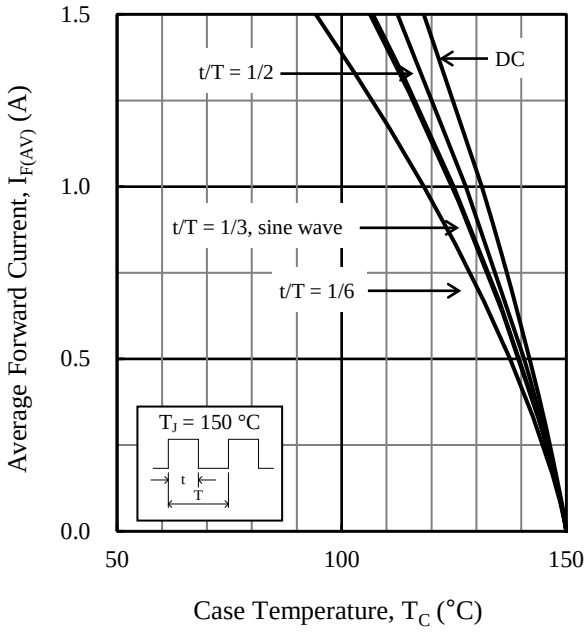


Figure 1. T_C vs. $I_{F(AV)}$ Typical Characteristics (V_R = 0 V)

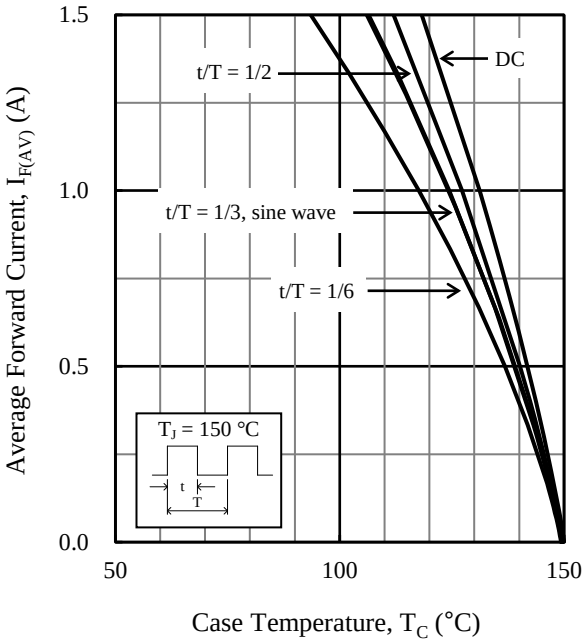


Figure 2. T_C vs. $I_{F(AV)}$ Typical Characteristics (V_R = 400 V)

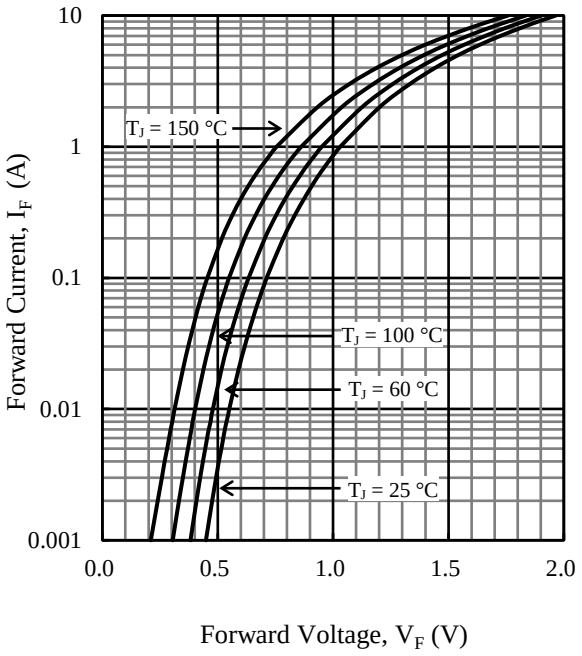


Figure 3. V_F vs. I_F Typical Characteristics

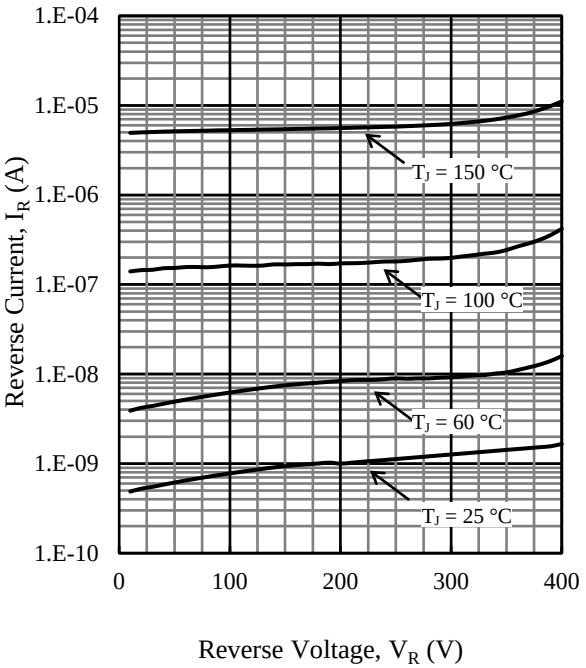
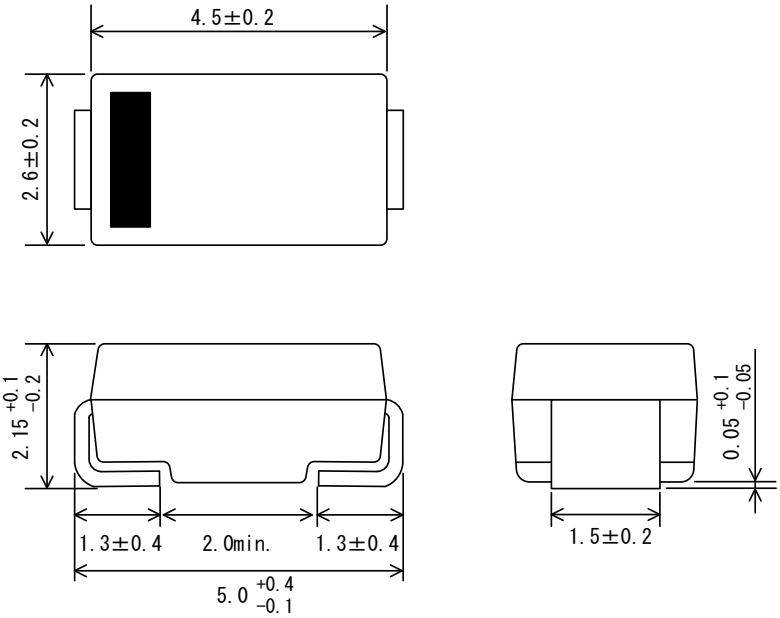


Figure 4. V_R vs. I_R Typical Characteristics

Physical Dimensions

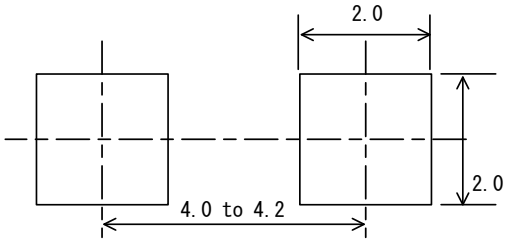
● **SJP Package**



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

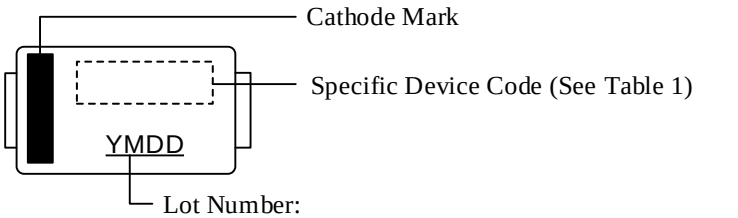
● **SJP Land Pattern Example**



NOTE:

- Dimensions in millimeters

Marking Diagram



Lot Number:
Y is the last digit of the year of manufacture (0 to 9)
M is the month of the year (1 to 9, O, N, or D)
DD is the day of the month (01 to 31)

Table 1. Specific Device Code

Specific Device Code	Part Number
LF4	SJPL-F4

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