



JPFR0812FPL EPI PLANAR FAST SOFT RECOVERY RECTIFIER

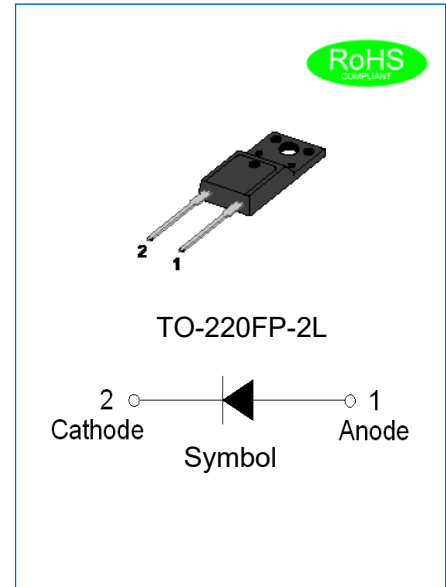
Rev.1.1

DESCRIPTION

- ✧ Plastic package has underwriters laboratory flammability classification 94V-0
- ✧ Lead free in comply with EU RoHS 2011/65/EU directives
- ✧ Low reverse leakage current
- ✧ Fast recovery time
- ✧ Epitaxial planar technology
- ✧ 5th Generation soft fast recovery characteristics
- ✧ Low recovery loss

MECHANICAL DATA

- ✧ Case: TO-220FP-2L molded plastic over passivated junction
- ✧ Terminals: Solder plated, solderable per J-STD-002
- ✧ Weight: 2 gram



ABSOLUTE MAXIMUM RATING (Rating at 25°C ambient temperature unless otherwise specified.)

| Parameter | Symbol | JPFR0812FPL | Unit |
|--|----------------|-------------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 1200 | V |
| Maximum RMS voltage | V_{RMS} | 840 | V |
| Maximum DC blocking voltage | V_{DC} | 1200 | V |
| Average forward current at $T_C=120^\circ\text{C}$ | $I_{F(AV)}$ | 8 | A |
| Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 88 | A |
| Peak forward surge current: 10ms single half sine-wave superimposed on rated load | | 80 | |
| Junction temperature and storage temperature range | T_j, T_{stg} | -55 to +175 | °C |

ISOLATION CHARACTERISTICS

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|-----------------|-----------------------|---|------|------|------|------|
| $V_{isol(RMS)}$ | RMS isolation voltage | 50Hz ≤ f ≤ 60Hz; RH ≤ 65%; from all pins to external heatsink; sinusoidal waveform; clean and dust free | - | - | 2500 | V |
| C_{isol} | Isolation capacitance | from cathode to external heatsink | - | 10 | - | pF |

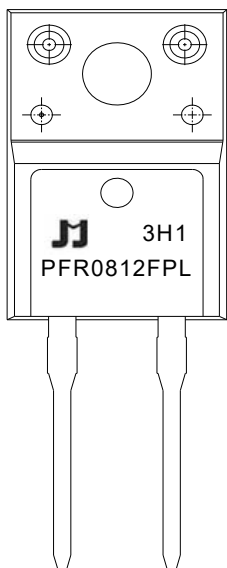
ELECTRICAL CHARACTERISTICS(Rating at 25°C ambient temperature unless otherwise specified.)

| Parameter | | Symbol | Min. | Typ. | Max. | Unit |
|-------------------------------|--|----------|------|------|------|---------|
| Forward voltage | $I_F=8A, T_j=25^\circ C$ | V_F | - | 1.7 | 2.2 | V |
| | $I_F=8A, T_j=150^\circ C$ | | - | 1.5 | 2 | |
| Reverse current | $V_R=1200V, T_j=25^\circ C$ | I_R | - | - | 5 | μA |
| | $V_R=1200V, T_j=150^\circ C$ | | - | - | 200 | |
| Reverse recovery time | $I_F=1A, V_R=30V,$ $di/dt=100A/\mu s, T_j=25^\circ C$ | t_{rr} | - | - | 50 | ns |
| | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=25^\circ C$ | | - | 40 | - | |
| | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=125^\circ C$ | | - | 80 | - | |
| | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=150^\circ C$ | | - | 90 | - | |
| Peak reverse recovery current | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=25^\circ C$ | I_{RM} | - | 9 | - | A |
| | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=125^\circ C$ | | - | 14.5 | - | |
| | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=150^\circ C$ | | - | 16 | - | |
| Recovered charge | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=25^\circ C$ | Q_r | - | 200 | - | nC |
| | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=125^\circ C$ | | - | 700 | - | |
| | $I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_j=150^\circ C$ | | - | 850 | - | |

THERMAL RESISTANCES

| Symbol | Parameter | Min. | Typ. | Max. | Unit |
|---------------|--|------|------|------|--------------|
| $R_{th(j-c)}$ | Thermal resistance from junction to case | - | - | 4 | $^\circ C/W$ |

MARKING



| | |
|-----|--------------------------------|
| PFR | Planar Fast Recovery Rectifier |
| 08 | $I_{F(AV)}=8A$ |
| 12 | $V_{RRM}:1200V$ |
| FPL | Package: TO-220FP-2L |

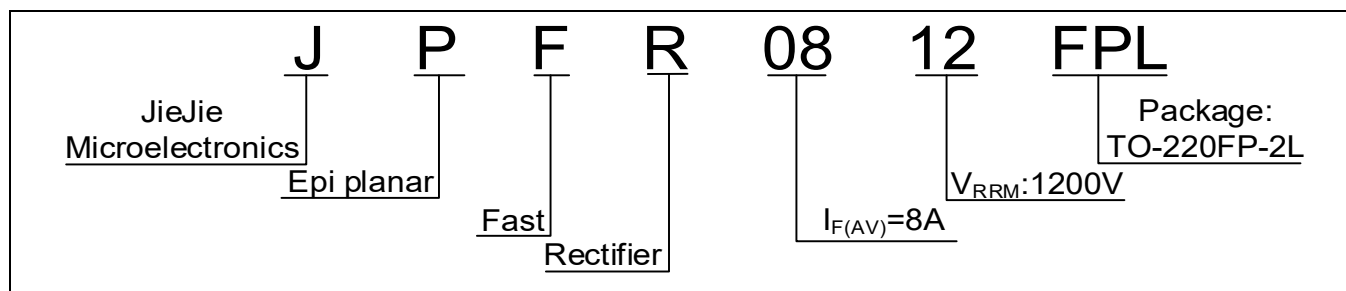
xH1: Month, 1/2/3~9/A/B/C

3x1:

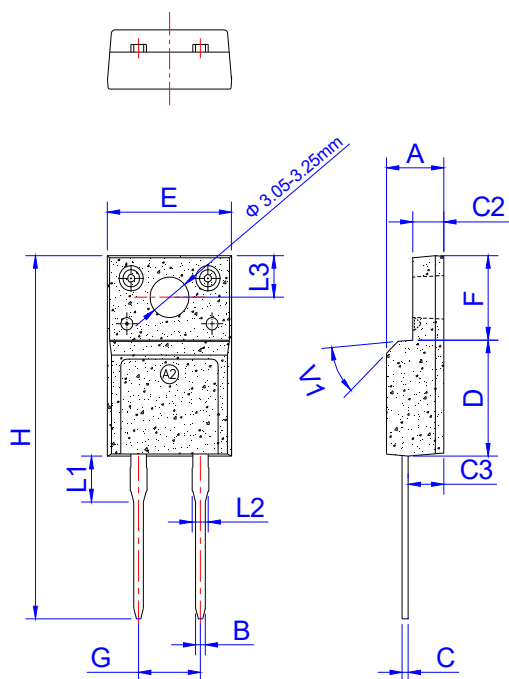
| | | | | | | |
|------|------|------|------|------|------|------|
| 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| H | I | J | K | L | M | N |
| 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | ... |
| O | P | Q | R | S | T | ... |

3Hx: Batch number

ORDERING INFORMATION



PACKAGE MECHANICAL DATA

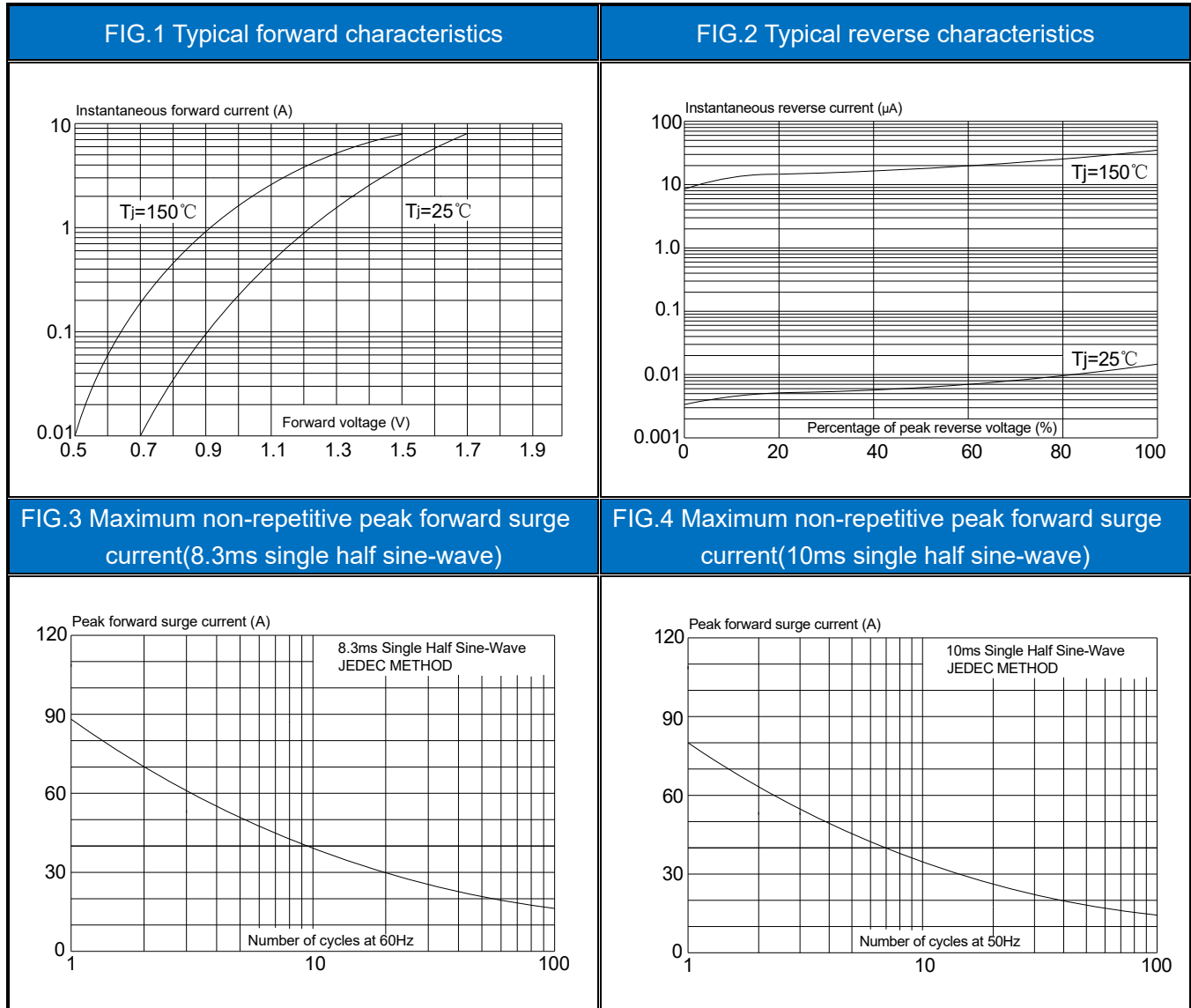


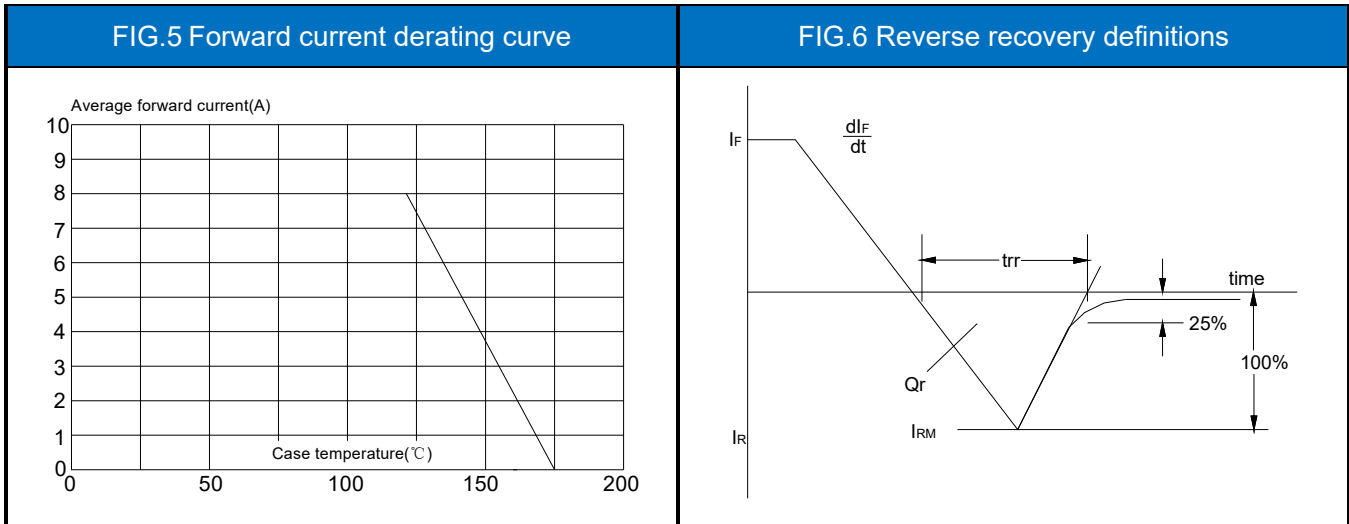
| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.50 | | 4.90 | 0.177 | | 0.193 |
| B | 0.74 | 0.80 | 0.83 | 0.029 | 0.031 | 0.033 |
| C | 0.47 | | 0.65 | 0.019 | | 0.026 |
| C2 | 2.45 | | 2.75 | 0.096 | | 0.108 |
| C3 | 2.60 | | 3.00 | 0.102 | | 0.118 |
| D | 8.80 | | 9.30 | 0.346 | | 0.366 |
| E | 9.80 | | 10.4 | 0.386 | | 0.410 |
| F | 6.40 | | 6.80 | 0.252 | | 0.268 |
| G | | 5.08 | | | 0.200 | |
| H | 28.0 | | 29.8 | 1.102 | | 1.173 |
| L1 | | 3.63 | | | 0.143 | |
| L2 | 1.14 | | 1.70 | 0.045 | | 0.067 |
| L3 | | 3.30 | | | 0.130 | |
| V1 | | 45° | | | 45° | |

PACKAGE INFORMATION-TO-220FP-2L

| OUTLINE | UNIT WEIGHT (g/PCS) typ. | TUBE (PCS) | PER CARTON (PCS) |
|---------|--------------------------|------------|------------------|
| TUBE | 2 | 50 | 5,000 |

CHARACTERISTICS CURVE






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