



## JPCR3012SL

### EPI PLANAR HYPERFAST SOFT RECOVERY RECTIFIER

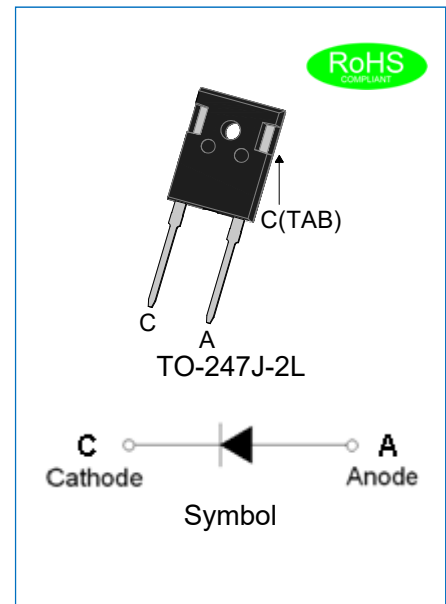
Rev.1.1

#### 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
- ✧ Hyperfast recovery time
- ✧ Epitaxial planar technology
- ✧ 5th Generation soft fast recovery characteristics
- ✧ Low recovery loss

#### MECHANICAL DATA

- ✧ Case: TO-247J-2L molded plastic
- ✧ Terminals: Solder plated, solderable per J-STD-002
- ✧ Weight:5.75gram



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

| Parameter   | Symbol         | JPCR3012SL  | 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 $T_C=105^{\circ}C$                                     | $I_{F(AV)}$    | 30          | A           |
| Peak forward surge current: 10ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 300         | A           |
| Junction temperature and storage temperature range                                | $T_j, T_{stg}$ | -55 to +175 | $^{\circ}C$ |

## ELECTRICAL CHARACTERISTICS

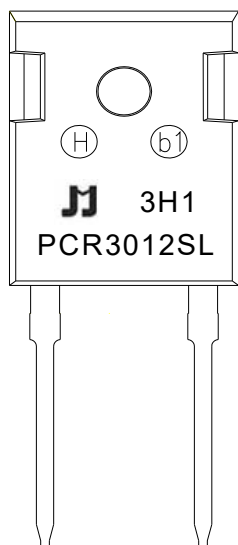
(Rating at 25°C ambient temperature unless otherwise specified, continued)

| Parameter                |   | Symbol    | Min. | Typ. | Max. | Unit    |
|--------------------------|---|-----------|------|------|------|---------|
| Forward voltage          | $I_F=30A, T_j=25^\circ C$                                     | $V_F$     | -    | 2.8  | 3.3  | V       |
|                          | $I_F=30A, T_j=150^\circ C$                                    |           | -    | 2.0  | 3.0  |         |
| Reverse current          | $V_R=1200V, T_j=25^\circ C$                                   | $I_R$     | -    | -    | 10   | $\mu A$ |
|                          | $V_R=1200V, T_j=150^\circ C$                                  |           | -    | -    | 400  |         |
| Reverse recovery time    | $I_F=1A, V_R=30V,$<br>$di_F/dt=200A/\mu s, T_j=25^\circ C$    | $t_{rr}$  | -    | 28   | -    | ns      |
|                          | $I_F=30A, V_R=400V,$<br>$di_F/dt=200A/\mu s, T_j=25^\circ C$  |           | -    | 90   | -    |         |
|                          | $I_F=30A, V_R=400V,$<br>$di_F/dt=200A/\mu s, T_j=125^\circ C$ |           | -    | 215  | -    |         |
| Reverse recovery current | $I_F=30A, V_R=400V,$<br>$di_F/dt=200A/\mu s, T_j=25^\circ C$  | $I_{RRM}$ | -    | 5.2  | -    | A       |
|                          | $I_F=30A, V_R=400V,$<br>$di_F/dt=200A/\mu s, T_j=125^\circ C$ |           | -    | 14   | -    |         |
| Reverse recovery charge  | $I_F=30A, V_R=400V,$<br>$di_F/dt=200A/\mu s, T_j=25^\circ C$  | $Q_{rr}$  | -    | 285  |      | nC      |
|                          | $I_F=30A, V_R=400V,$<br>$di_F/dt=200A/\mu s, T_j=125^\circ C$ |           | -    | 1780 |      |         |

## THERMAL RESISTANCES

| Symbol        | Parameter                                | Min. | Typ. | Max. | Unit         |
|---------------|--|------|------|------|--------------|
| $R_{th(j-c)}$ | Thermal resistance from junction to case | -    | -    | 0.8  | $^\circ C/W$ |

MARKING



|     |                                     |
|-----|-------------------------------------|
| PCR | Planar Hyperfast Recovery Rectifier |
| 30  | $I_{F(AV)}=30A$                     |
| 12  | $V_{RRM}:1200V$                     |
| SL  | Package:TO-247J-2L                  |

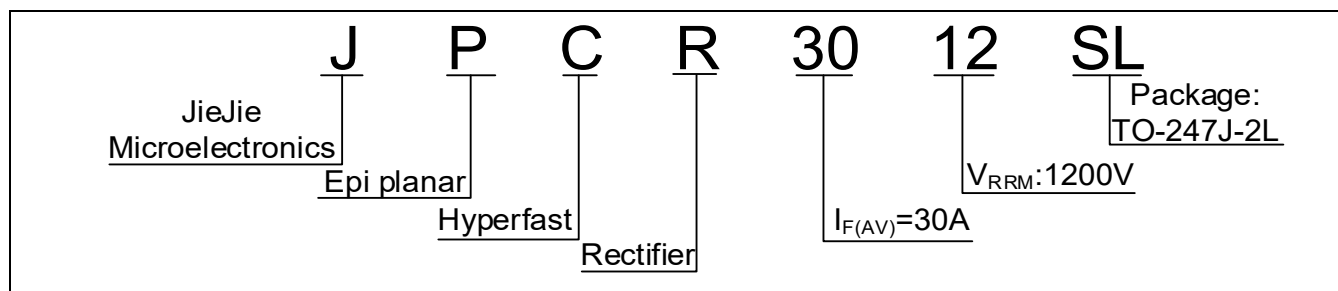
xH1: Month, 1/2/3~9/A/B/C

3x1:

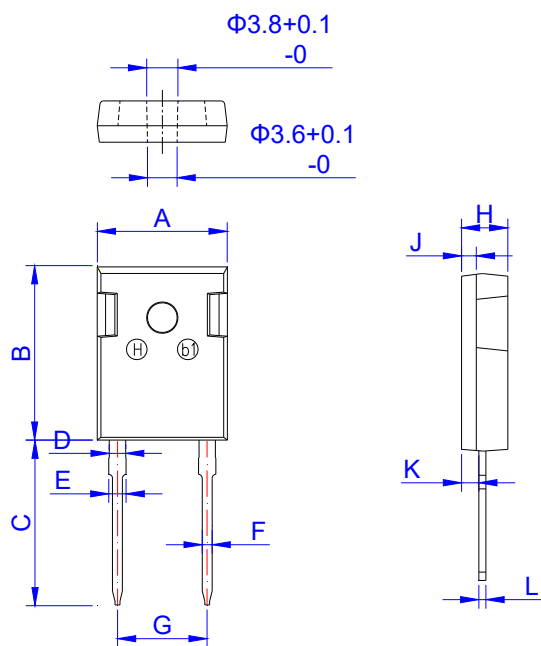
|      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|
| 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| H    | I    | J    | K    | L    | M    | N    |
| 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | ...  |
| O    | P    | Q    | R    | S    | T    | ...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

3Hx: Batch number

ORDERING INFORMATION



PACKAGE MECHANICAL DATA



TO-247J-2L

| Ref. | Dimensions  |       |       |        |       |       |
|------|-------------|-------|-------|--------|-------|-------|
|      | Millimeters |       |       | Inches |       |       |
|      | Min.        | Typ.  | Max.  | Min.   | Typ.  | Max.  |
| A    | 15.50       | 15.80 | 16.10 | 0.610  | 0.622 | 0.634 |
| B    | 20.80       | 21.00 | 21.20 | 0.819  | 0.827 | 0.835 |
| C    | 19.70       | 20.00 | 20.30 | 0.776  | 0.787 | 0.799 |
| D    | 1.80        | 2.00  | 2.20  | 0.071  | 0.079 | 0.087 |
| E    | 1.90        | 2.10  | 2.30  | 0.075  | 0.083 | 0.091 |
| F    | 1.00        | 1.20  | 1.40  | 0.039  | 0.047 | 0.055 |
| G    | 10.50       |       | 11.30 | 0.413  |       | 0.445 |
| H    | 4.80        | 5.00  | 5.20  | 0.189  | 0.197 | 0.205 |
| J    | 1.90        | 2.00  | 2.10  | 0.075  | 0.079 | 0.083 |
| K    | 2.20        | 2.35  | 2.50  | 0.087  | 0.093 | 0.098 |
| L    | 0.41        | 0.60  | 0.79  | 0.016  | 0.024 | 0.031 |

PACKAGE INFORMATION-TO-247J-2L

| OUTLINE | UNIT WEIGHT (g/PCS) TYP | TUBE (PCS) | PER CARTON (PCS) |
|---------|-------------------------|------------|------------------|
| TUBE    | 5.75                    | 30         | 2,250            |

CHARACTERISTICS CURVE

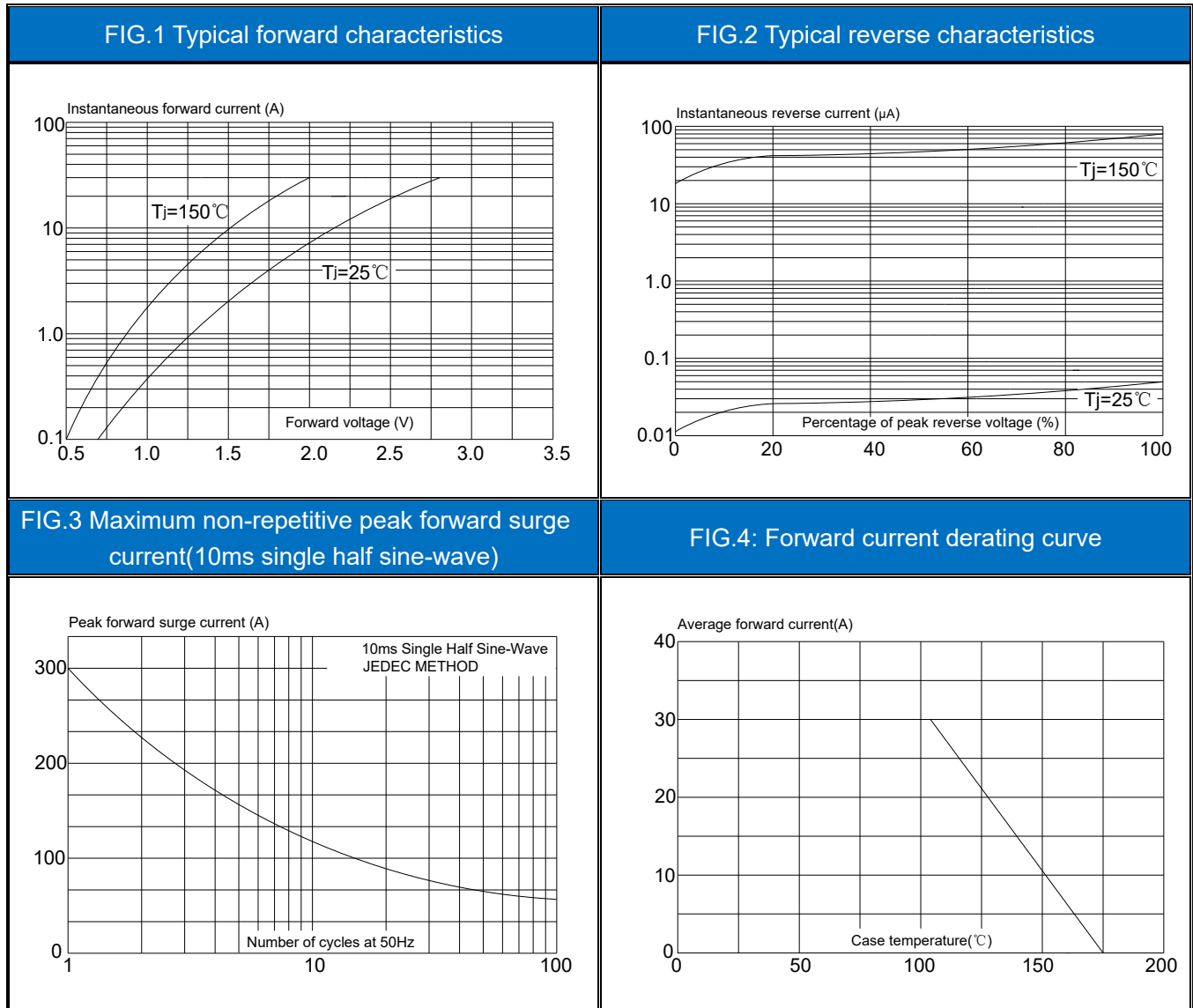
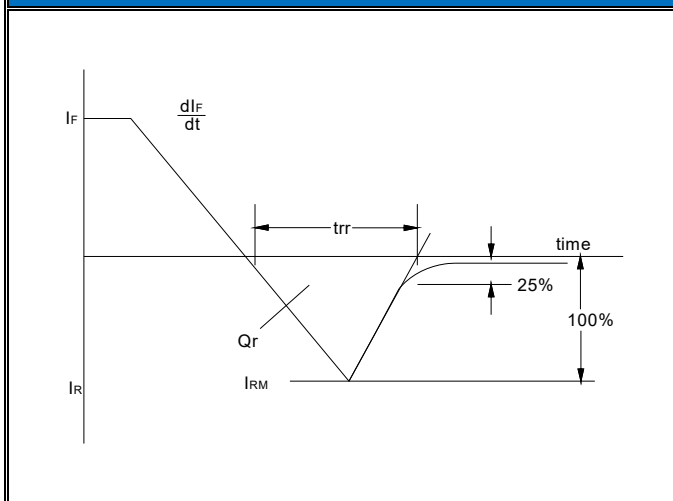


FIG.5: Reverse recovery definitions




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