



## JPUR3006CL

### EPI PLANAR ULTRAFAST SOFT RECOVERY RECTIFIER

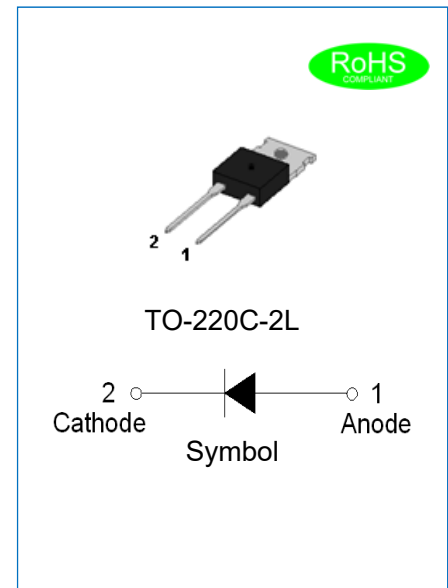
Rev.1.2

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

#### MECHANICAL DATA

- ✧ Case: TO-220C-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.)

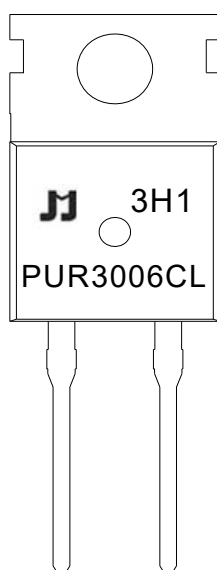
| Parameter                                                                          | Symbol         | JPUR3006CL  | Unit               |
|------------------------------------------------------------------------------------|----------------|-------------|--------------------|
| Maximum repetitive peak reverse voltage                                            | $V_{RRM}$      | 600         | V                  |
| Maximum RMS voltage                                                                | $V_{RMS}$      | 420         | V                  |
| Maximum DC blocking voltage                                                        | $V_{DC}$       | 600         | V                  |
| Average forward current at $T_C=135^{\circ}\text{C}$                               | $I_{F(AV)}$    | 30          | A                  |
| Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 330         | A                  |
| Peak forward surge current: 10ms single half sine-wave superimposed on rated load  |                | 300         |                    |
| Junction temperature and storage temperature range                                 | $T_j, T_{stg}$ | -55 to +175 | $^{\circ}\text{C}$ |

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

| Parameter                |                                                                | Symbol   | Min. | Typ. | Max. | Unit    |
|--------------------------|----------------------------------------------------------------|----------|------|------|------|---------|
| Forward voltage          | $I_F=30A, T_J=25^{\circ}C$                                     | $V_F$    | -    | 1.35 | 1.6  | V       |
|                          | $I_F=30A, T_J=150^{\circ}C$                                    |          | -    | 1.1  | -    | V       |
| Reverse leakage current  | $V_R=600V, T_J=25^{\circ}C$                                    | $I_R$    | -    | -    | 5    | $\mu A$ |
|                          | $V_R=600V, T_J=150^{\circ}C$                                   |          | -    | -    | 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   | 45   | ns      |
|                          | $I_F=30A, V_R=200V,$<br>$di_F/dt=200A/\mu s, T_J=25^{\circ}C$  |          | -    | 80   | -    |         |
|                          | $I_F=30A, V_R=200V,$<br>$di_F/dt=200A/\mu s, T_J=125^{\circ}C$ |          | -    | 160  | -    |         |
| Reverse recovery current | $I_F=30A, V_R=200V,$<br>$di_F/dt=200A/\mu s, T_J=25^{\circ}C$  | $I_{RM}$ | -    | 7.5  | -    | A       |
|                          | $I_F=30A, V_R=200V,$<br>$di_F/dt=200A/\mu s, T_J=125^{\circ}C$ |          | -    | 17.5 | -    |         |
| Reverse charge           | $I_F=30A, V_R=200V,$<br>$di_F/dt=200A/\mu s, T_J=25^{\circ}C$  | $Q_r$    | -    | 350  | -    | nC      |
|                          | $I_F=30A, V_R=200V,$<br>$di_F/dt=200A/\mu s, T_J=125^{\circ}C$ |          | -    | 1550 | -    |         |

**THERMAL RESISTANCES**

| Symbol        | Parameter                                | Min. | Typ. | Max. | Unit          |
|---------------|------------------------------------------|------|------|------|---------------|
| $R_{th(j-c)}$ | Thermal resistance from junction to case | -    | -    | 1    | $^{\circ}C/W$ |

**MARKING**

|     |                                     |
|-----|-------------------------------------|
| PUR | Planar Ultrafast Recovery Rectifier |
| 30  | $I_{F(AV)}=30A$                     |
| 06  | $V_{RRM}:600V$                      |
| CL  | Package: TO-220C-2L                 |

xH1: Month, 1/2/3~9/A/B/C3x1:

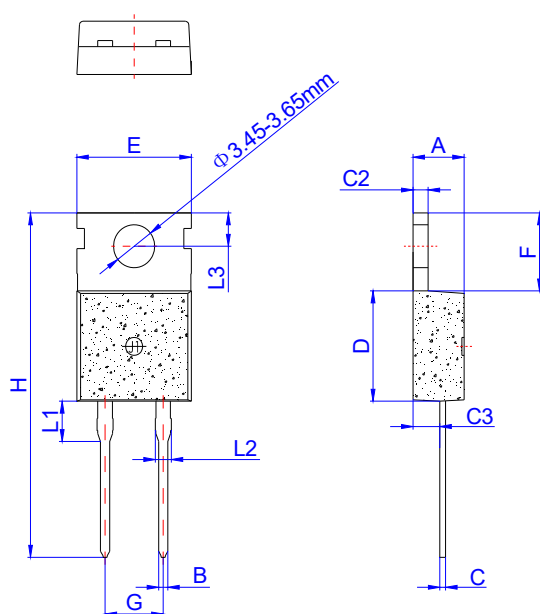
|      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|
| 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| H    | I    | J    | K    | L    | M    | N    |
| 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | ...  |
| O    | P    | Q    | R    | S    | T    | ...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

3Hx: Batch number

## ORDERING INFORMATION

|                            |            |           |           |                 |                |                        |
|----------------------------|------------|-----------|-----------|-----------------|----------------|------------------------|
| J                          | P          | U         | R         | 30              | 06             | CL                     |
| JieJie<br>Microelectronics | Epi planar | Ultrafast | Rectifier | $I_{F(AV)}=30A$ | $V_{RRM}:600V$ | Package:<br>TO-220C-2L |

## PACKAGE MECHANICAL DATA



| Ref. | Dimensions  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    | 4.40        |      | 4.60 | 0.173  |       | 0.181 |
| B    | 0.70        |      | 0.90 | 0.028  |       | 0.035 |
| C    | 0.45        |      | 0.60 | 0.018  |       | 0.024 |
| C2   | 1.23        |      | 1.32 | 0.048  |       | 0.052 |
| C3   | 2.20        |      | 2.60 | 0.087  |       | 0.102 |
| D    | 8.90        |      | 9.90 | 0.350  |       | 0.390 |
| E    | 9.90        |      | 10.3 | 0.390  |       | 0.406 |
| F    | 6.30        |      | 6.90 | 0.248  |       | 0.272 |
| G    |             | 5.08 |      |        | 0.200 |       |
| H    | 28.0        |      | 29.8 | 1.102  |       | 1.173 |
| L1   |             | 3.39 |      |        | 0.133 |       |
| L2   | 1.14        |      | 1.70 | 0.045  |       | 0.067 |
| L3   | 2.65        |      | 2.95 | 0.104  |       | 0.116 |
| Φ    |             | 3.6  |      |        | 0.142 |       |

## PACKAGE INFORMATION- TO-220C-2L

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

## CHARACTERISTICS CURVE

FIG.1 Typical forward characteristics

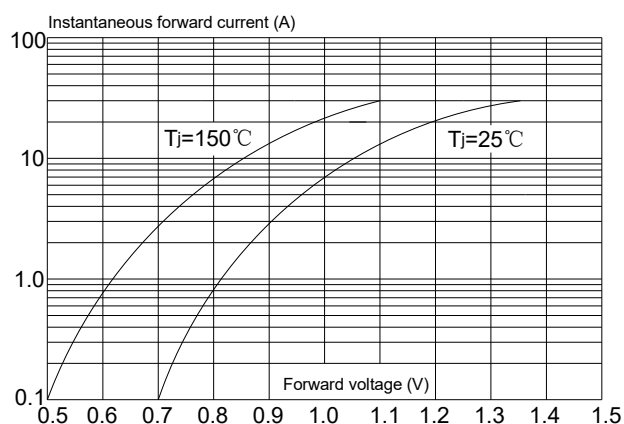


FIG.2 Typical reverse characteristics

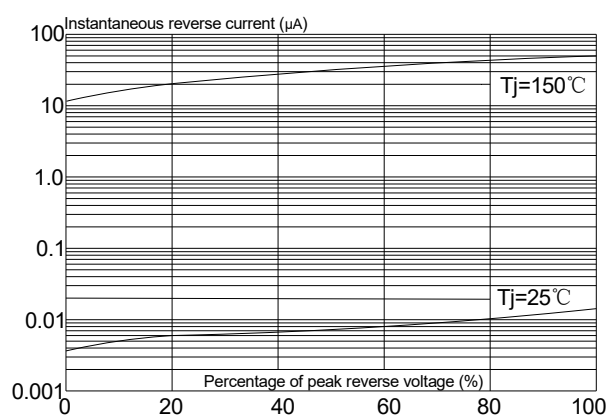


FIG.3 Maximum non-repetitive peak forward surge current(8.3ms single half sine-wave)

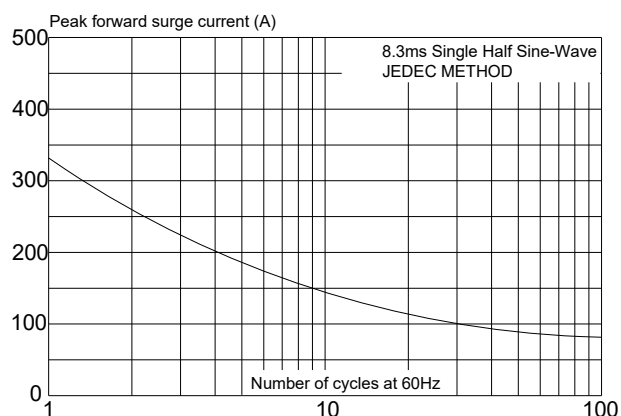


FIG.4: Maximum non-repetitive peak forward surge current(10ms single half sine-wave)

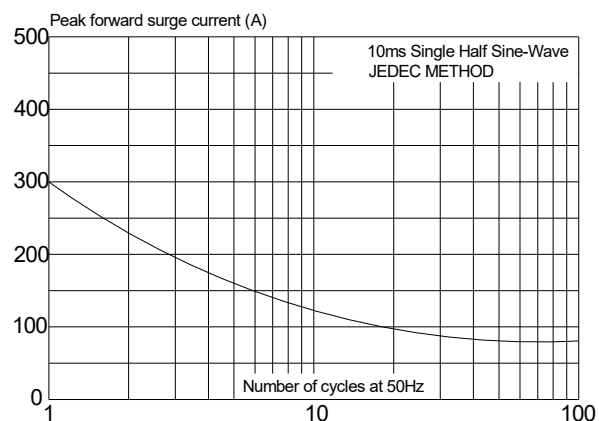


FIG.5: Forward current derating curve

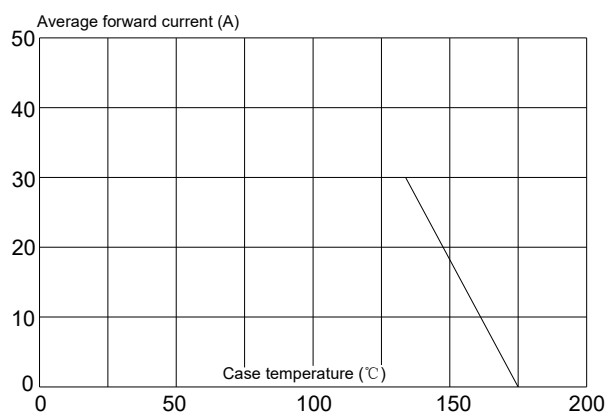
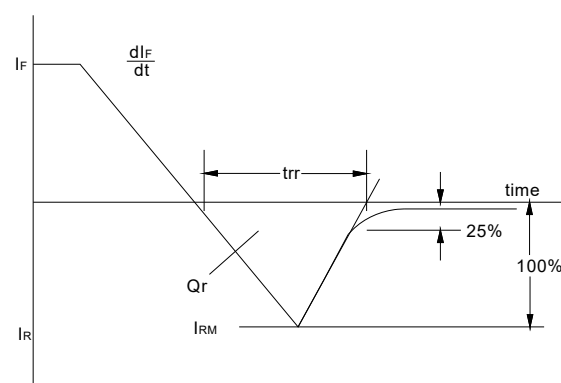


FIG.6: Reverse recovery definitions



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