

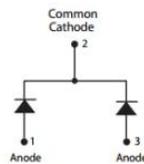
## 30CPQ080/30CPQ100 SCHOTTKY RECTIFIER



### Features

- 175 °C T<sub>J</sub> operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Center tap configuration

### Maximum Ratings:

| Characteristics                                      | Symbol             | Condition  | Max.                          | Units |
|--|--------------------|--|-------------------------------|-------|
| Peak Repetitive Reverse Voltage                      | V <sub>RRM</sub>   | -  | 80(30CPQ080)                  | V     |
| Working Peak Reverse Voltage                         | V <sub>RWM</sub>   | -  | 100(30CPQ100)                 |       |
| DC Blocking Voltage                                  | V <sub>R</sub>     | -  | -                             |       |
| Average Rectified Forward Current                    | I <sub>F(AV)</sub> | 50% duty cycle @T <sub>c</sub> =140°C, rectangular wave form | 15(Per Leg)<br>30(Per Device) | A     |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | I <sub>FSM</sub>   | 8.3ms, Half Sine pulse, T <sub>c</sub> = 25 °C               | 280                           | A     |

### Electrical Characteristics:

| Characteristics                 | Symbol          | Condition   | Typ.   | Max.   | Units |
|---------------------------------|-----------------|---|--------|--------|-------|
| Forward Voltage Drop (Per Leg)* | V <sub>F1</sub> | @ 15A, Pulse, T <sub>J</sub> = 25 °C                                    | 0.76   | 0.86   | V     |
|                                 | V <sub>F2</sub> | @ 30A, Pulse, T <sub>J</sub> = 25 °C                                    | -      | 1.05   |       |
| Reverse Current (Per Leg)*      | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub><br>T <sub>J</sub> = 25 °C        | 0.0003 | 0.55   | mA    |
|                                 | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub><br>T <sub>J</sub> = 125 °C       | 0.2    | 7.0    |       |
| Junction Capacitance(Per Leg)   | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>c</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz | 400    | 500    | pF    |
| Voltage Rate of Change          | dv/dt           | -   | -      | 10,000 | V/μs  |

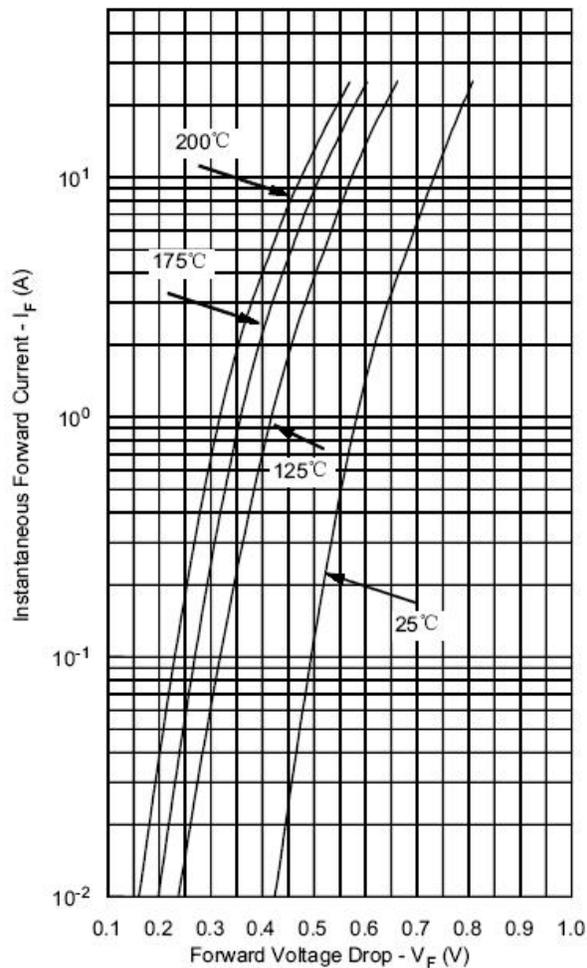
\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

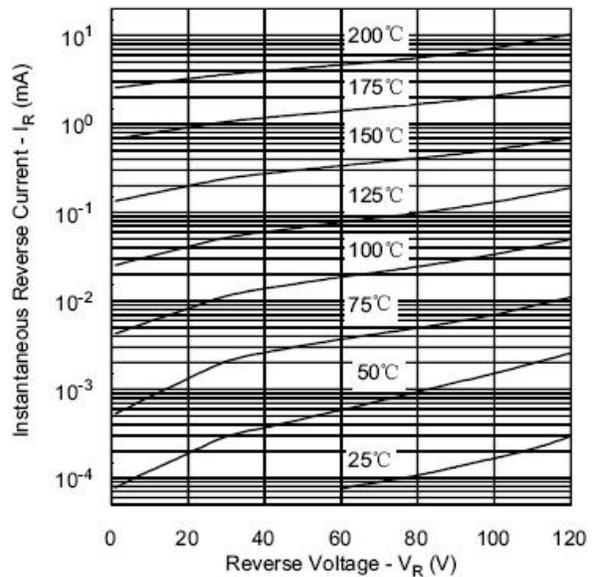
| Characteristics                               | Symbol          | Condition                            | Specification                    | Units |
|---|-----------------|--------------------------------------|----------------------------------|-------|
| Junction Temperature                          | $T_J$           | -                                    | -55 to +175                      | °C    |
| Storage Temperature                           | $T_{stg}$       | -                                    | -55 to +175                      | °C    |
| Typical Thermal Resistance Junction to Case   | $R_{\theta JC}$ | DC operation                         | 2.2(Peg Leg)<br>1.10(Peg Device) | °C/W  |
| Typical Thermal Resistance, case to Heat Sink | $R_{\theta cs}$ | Mounting surface, smooth and greased | 0.24                             | °C/W  |
| Approximate Weight                            | wt              | -                                    | 6.28                             | g     |
| Case Style                                    | TO-247AD        |                                      |                                  |       |

**Ratings and Characteristics Curves**

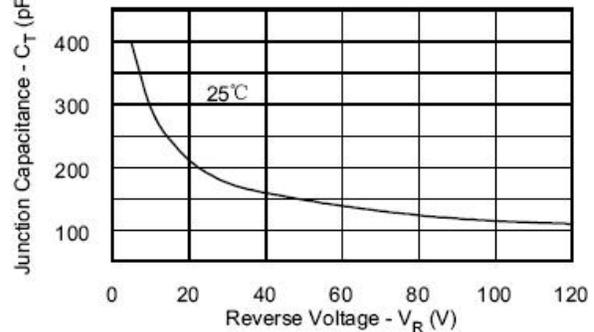
Typical Forward Characteristics



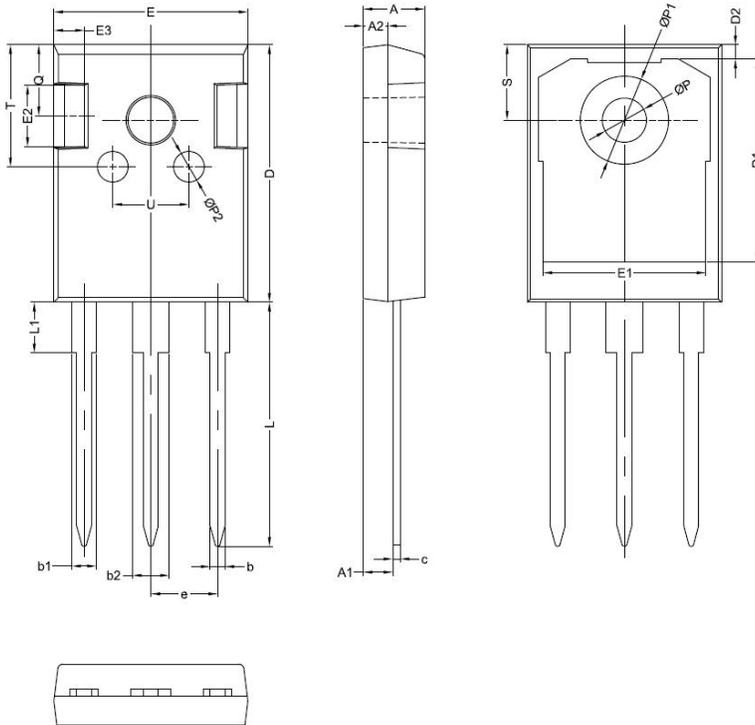
Typical Reverse Characteristics



Typical Junction Capacitance



**Mechanical Dimensions TO-247AD**



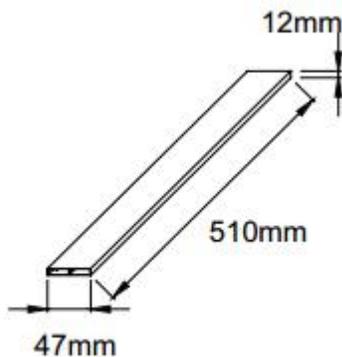
| SYMBOL | Millimeters |       |       |
|--------|-------------|-------|-------|
|        | MIN.        | TYP.  | MAX.  |
| A      | 4.80        | 5.00  | 5.20  |
| A1     | 2.20        | 2.41  | 2.61  |
| A2     | 1.90        | 2.00  | 2.10  |
| b      | 1.10        | 1.20  | 1.40  |
| b1     | 1.80        | 2.00  | 2.20  |
| b2     | 2.80        | 3.00  | 3.20  |
| c      | 0.50        | 0.60  | 0.75  |
| D      | 20.30       | 21.00 | 21.20 |
| D1     |             | 16.55 |       |
| D2     |             | 1.20  |       |
| E      | 15.45       | 15.80 | 16.00 |
| E1     |             | 13.30 |       |
| E2     |             | 5.00  |       |
| E3     |             | 2.50  |       |
| e      |             | 5.44  |       |
| L      | 19.42       | 19.92 | 20.70 |
| L1     |             | 4.13  |       |
| P      | 3.50        | 3.60  | 3.70  |
| P1     | 7.1         |       | 7.40  |
| P2     |             | 2.50  |       |
| Q      |             | 5.80  |       |
| S      | 6.05        | 6.15  | 6.25  |
| T      |             | 10.00 |       |
| U      |             | 6.20  |       |

**Ordering Information:**

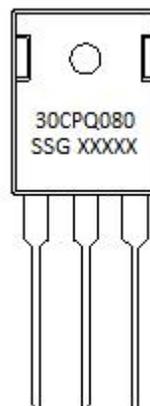
| Device        | Package           | Shipping     |
|---------------|-------------------|--------------|
| 30CPQ080(100) | TO-247AD(Pb-Free) | 25pcs / tube |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

- 30 = Forward Current (30A)
- C = Configuration
- PQ = Device Type
- 080 = Reverse Voltage (80V)
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

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