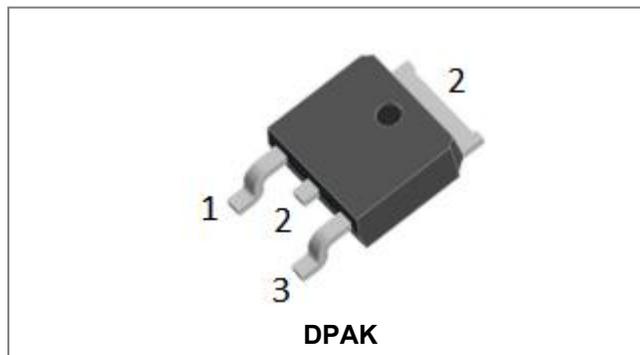


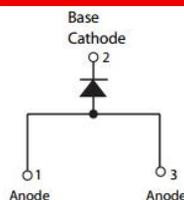
## 30WQ20FN SCHOTTKY RECTIFIER



### Features

- Small foot print, surface mountable
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Green products in compliance with the ROHS directive
- 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

- Disk drives
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Battery charging

### Maximum Ratings:

| Characteristics                             | Symbol      | Condition   | Max. | Units |
|---|-------------|---|------|-------|
| Peak Repetitive Reverse Voltage             | $V_{RRM}$   | -   | 200  | V     |
| Working Peak Reverse Voltage                | $V_{RWM}$   |   |      |       |
| DC Blocking Voltage                         | $V_R$       |   |      |       |
| Average Rectified Forward Current           | $I_{F(AV)}$ | 50% duty cycle @ $T_c=134^{\circ}C$ , rectangular wave form | 3.5  | A     |
| Peak One Cycle Non-Repetitive Surge Current | $I_{FSM}$   | 8.3ms, Half Sine pulse                                      | 84   | A     |

### Electrical Characteristics:

| Characteristics           | Symbol   | Condition   | Typ.   | Max.   | Units      |
|---------------------------|----------|---|--------|--------|------------|
| Forward Voltage Drop*     | $V_{F1}$ | @ 3A, Pulse, $T_J = 25^{\circ}C$                    | 0.84   | 0.89   | V          |
|                           | $V_{F2}$ | @ 3A, Pulse, $T_J = 125^{\circ}C$                   | 0.69   | 0.71   | V          |
| Reverse Current *         | $I_{R1}$ | @ $V_R = \text{rated } V_R, T_J = 25^{\circ}C$      | 0.0001 | 1.00   | mA         |
|                           | $I_{R2}$ | @ $V_R = \text{rated } V_R, T_J = 125^{\circ}C$     | 0.03   | 5      | mA         |
| Junction Capacitance      | $C_T$    | @ $V_R = 5V, T_C = 25^{\circ}C$<br>$f_{SIG} = 1MHz$ | 50     | 60     | pF         |
| Typical Series Inductance | $L_S$    | Measured lead to lead 5 mm from package body        | 5.0    | -      | nH         |
| Voltage Rate of Change    | dv/dt    | -   | -      | 10,000 | V/ $\mu s$ |

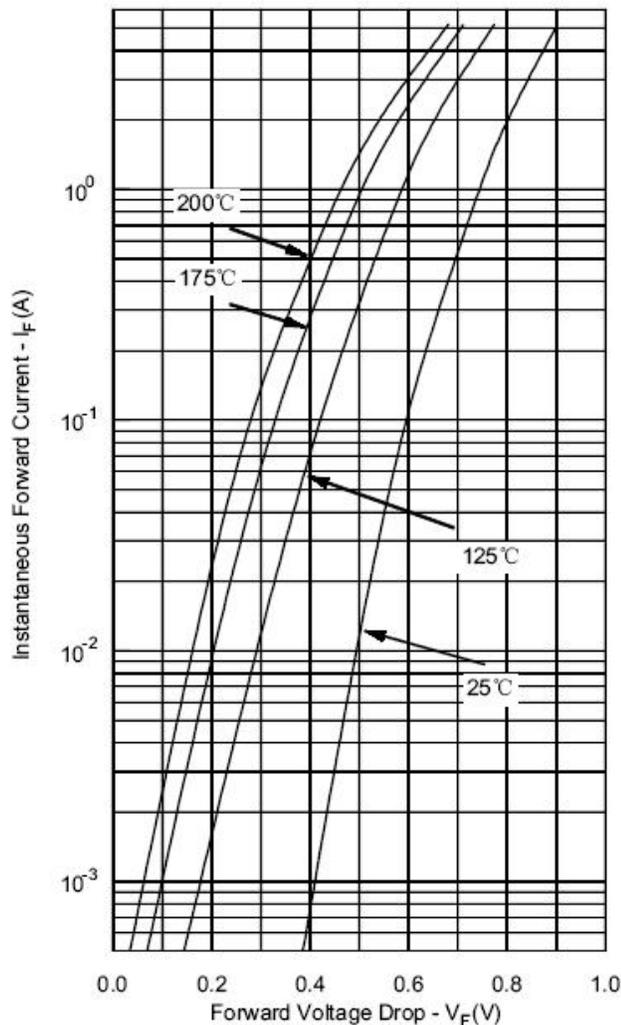
\* Pulse width < 300  $\mu s$ , duty cycle < 2%

**Thermal-Mechanical Specifications:**

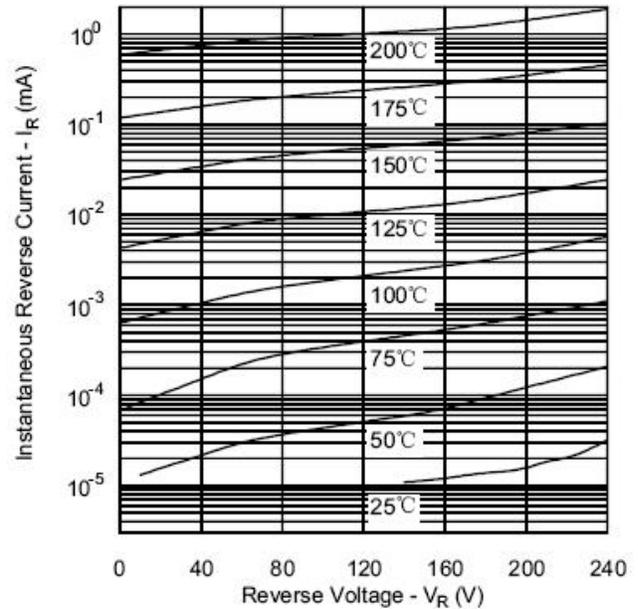
| Characteristics                             | Symbol          | Condition | Specification | Units |
|---|-----------------|-----------|---------------|-------|
| Junction Temperature                        | $T_J$           | -         | -40 to +175   | °C    |
| Storage Temperature                         | $T_{stg}$       | -         | -40 to +175   | °C    |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | -         | 5.0           | °C/W  |
| Approximate Weight                          | wt              | -         | 0.39          | g     |
| Case Style                                  | DPAK            |           |               |       |

**Ratings and Characteristics Curves**

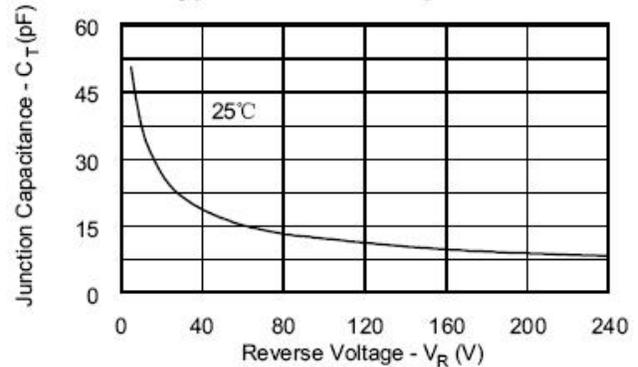
**Typical Forward Characteristics**

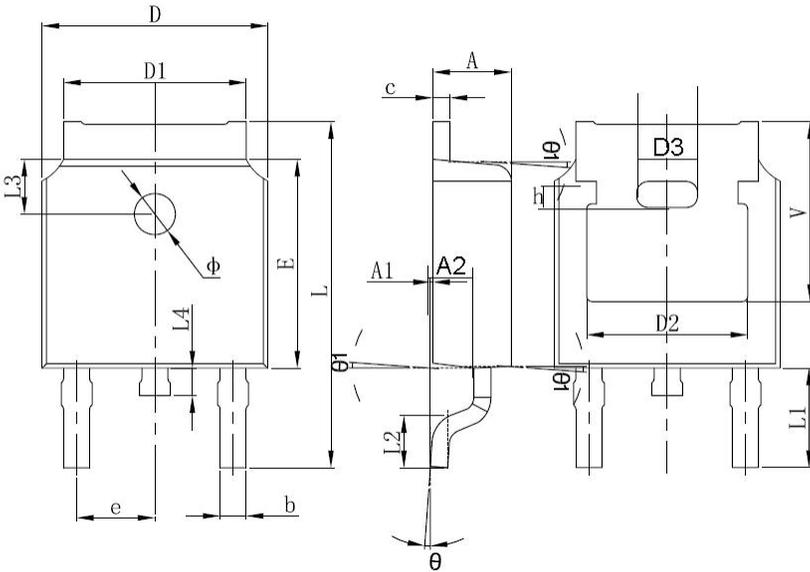


**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**Mechanical Dimensions DPAK**


| SYMBOL | Millimeters |       | Inches     |       |
|--------|-------------|-------|------------|-------|
|        | Min.        | Max.  | Min.       | Max.  |
| A      | 2.20        | 2.40  | 0.087      | 0.094 |
| A1     | 0.00        | 0.127 | 0.000      | 0.005 |
| b      | 0.66        | 0.86  | 0.026      | 0.034 |
| c      | 0.46        | 0.60  | 0.018      | 0.024 |
| D      | 6.50        | 6.70  | 0.256      | 0.264 |
| D1     | 5.13        | 5.46  | 0.202      | 0.215 |
| D2     | 4.83 REF.   |       | 0.190 REF. |       |
| E      | 6.00        | 6.20  | 0.236      | 0.244 |
| e      | 2.186       | 2.386 | 0.086      | 0.094 |
| L      | 9.70        | 10.40 | 0.381      | 0.409 |
| L1     | 2.90 REF.   |       | 0.144 REF. |       |
| L2     | 1.40        | 1.70  | 0.055      | 0.067 |
| L3     | 1.60 REF.   |       | 0.063 REF. |       |
| L4     | 0.60        | 1.00  | 0.024      | 0.039 |
| Φ      | 1.10        | 1.30  | 0.043      | 0.051 |
| θ      | 0°          | 8°    | 0°         | 8°    |
| h      | 0.00        | 0.30  | 0.000      | 0.012 |
| V      | 5.35 REF.   |       | 0.211 REF. |       |

**Ordering Information**

| Device   | Package        | Shipping       |
|----------|----------------|----------------|
| 30WQ20FN | DPAK (Pb-Free) | 2500pcs / reel |

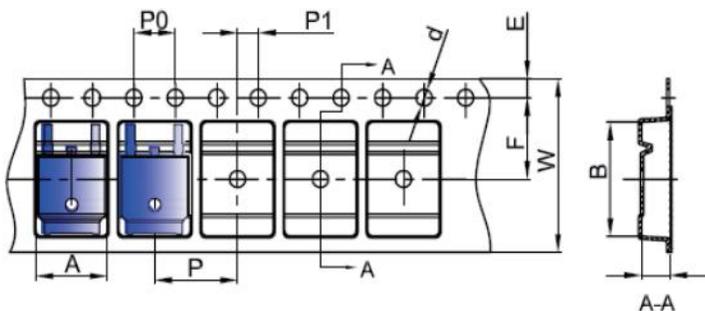
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


Where XXXXX is YYWWL

- 30 = Forward Current (3A)
- W = Configuration
- Q = Device Type
- 20 = Reverse Voltage (200V)
- FN = Package type
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Carrier Tape & Reel Specification DPAK**


| SYMBOL | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 6.80        | 7.00  |
| B      | 10.40       | 10.60 |
| C      | 2.60        | 2.80  |
| d      | Φ1.45       | Φ1.65 |
| E      | 1.65        | 1.85  |
| F      | 7.40        | 7.60  |
| P0     | 3.90        | 4.10  |
| P      | 7.90        | 8.10  |
| P1     | 1.90        | 2.10  |
| W      | 15.90       | 16.30 |

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