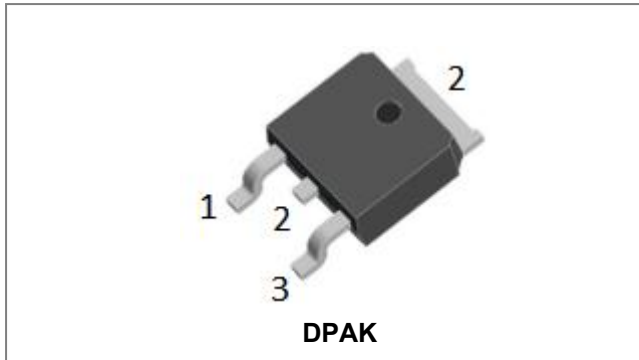


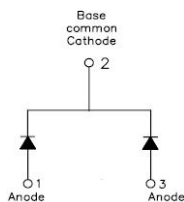
12CWQ06FN SCHOTTKY RECTIFIER



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
- “-A” is an AEC-Q101 qualified device
- 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 Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | - | 60 | V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 131^\circ\text{C}$, rectangular wave form | 6(peg leg) 12(peg device) | A |
| Peak One Cycle Non-Repetitive Surge Current(peg leg) | I_{FSM} | 8.3 ms, half Sine pulse | 126 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|-------------------------------------|----------|--|------|--------|------------------|
| Forward Voltage Drop (per leg) * | V_{F1} | @ 6A, Pulse, $T_J = 25^\circ\text{C}$ | 0.50 | 0.61 | V |
| | V_{F2} | @ 6A, Pulse, $T_J = 125^\circ\text{C}$ | 0.42 | 0.57 | V |
| Reverse Current (per leg) * | I_{R1} | @ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$ | 0.07 | 3 | mA |
| | I_{R2} | @ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$ | 3 | 35 | mA |
| Junction Capacitance (per leg) | C_T | @ $V_R = 5\text{V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$ | 340 | 360 | pF |
| Voltage Rate of Change | dv/dt | - | - | 10,000 | V/ μs |

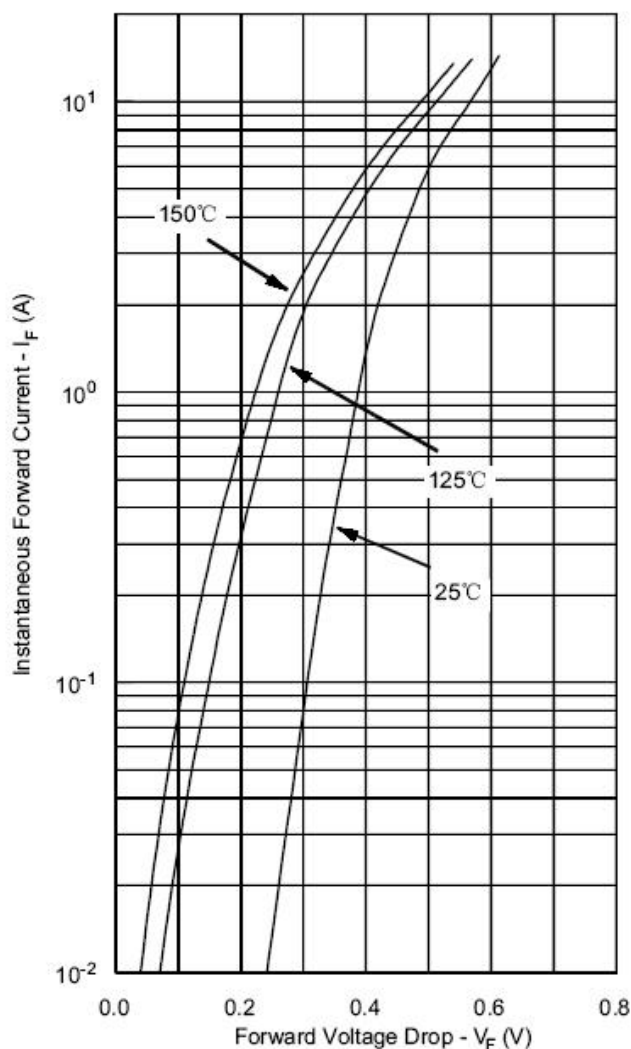
* Pulse width < 300 μs , duty cycle < 2%

Thermal-Mechanical Specifications:

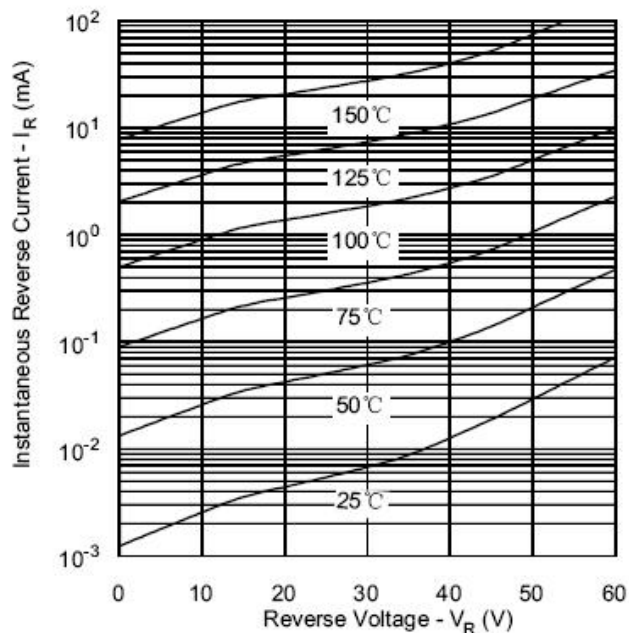
| Characteristics | Symbol | Condition | Specification | Units |
|---|-----------------|-----------|-----------------|----------------------|
| Junction Temperature | T_J | - | -55 to +125 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{stg} | - | -55 to +150 | $^{\circ}\text{C}$ |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | - | 3.0(per leg) | $^{\circ}\text{C/W}$ |
| | | | 1.5(per device) | |
| Approximate Weight | wt | - | 0.39 | g |
| Case Style | DPAK | | | |

Ratings and Characteristics Curves

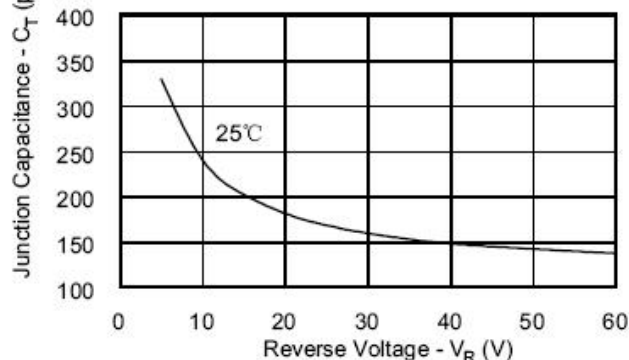
Typical Forward Characteristics



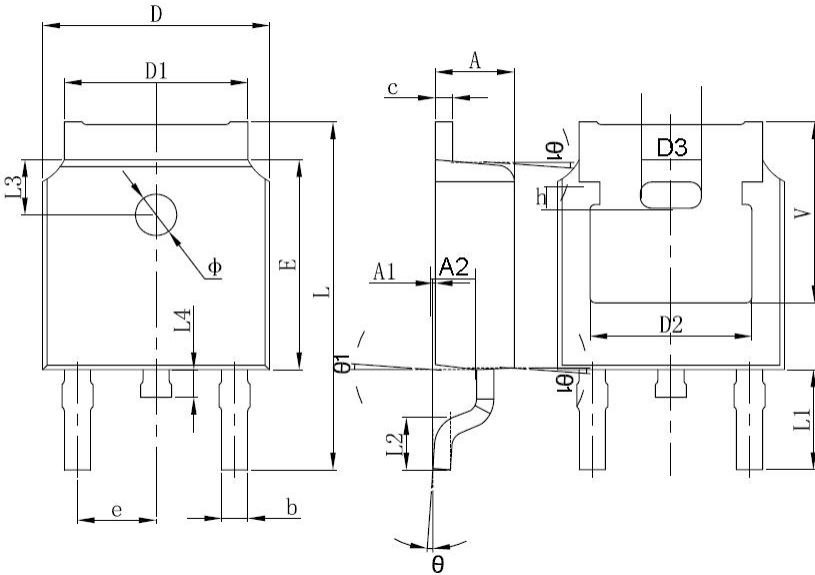
Typical Reverse Characteristics



Typical Junction Capacitance



Mechanical Dimensions DPAK



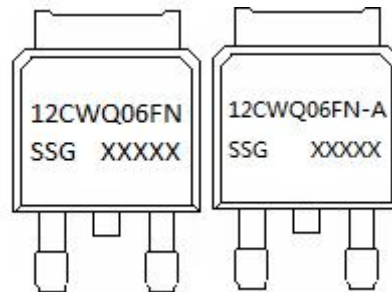
| SYMBOL | Millimeters | | Inches | |
|--------|-------------|-------|------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.20 | 2.40 | 0.087 | 0.094 |
| A1 | 0.00 | 0.127 | 0.000 | 0.005 |
| b | 0.66 | 0.86 | 0.026 | 0.034 |
| c | 0.46 | 0.60 | 0.018 | 0.024 |
| D | 6.50 | 6.70 | 0.256 | 0.264 |
| 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 |
|-----------|----------------|----------------|
| 12CWQ06FN | 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

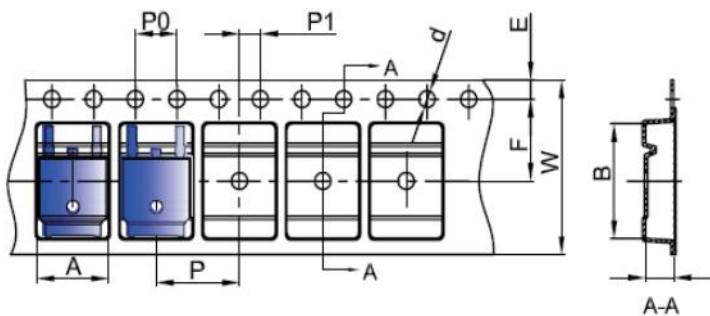


Where XXXXX is YYWWL

- 12 = Forward Current (12A)
- CW = Configuration
- Q = Device Type
- 06 = Reverse Voltage (60V)
- FN = Package type
- A = AEC-Q101
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Carrier Tape 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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