

DFNWB3×2-08L-B Power Management MOSFETS-Schottky

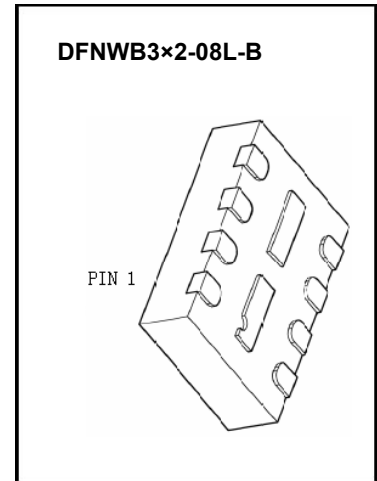
CJHD3101F P-channel MOSFET and Schottky Barrier Diode

FEATURES

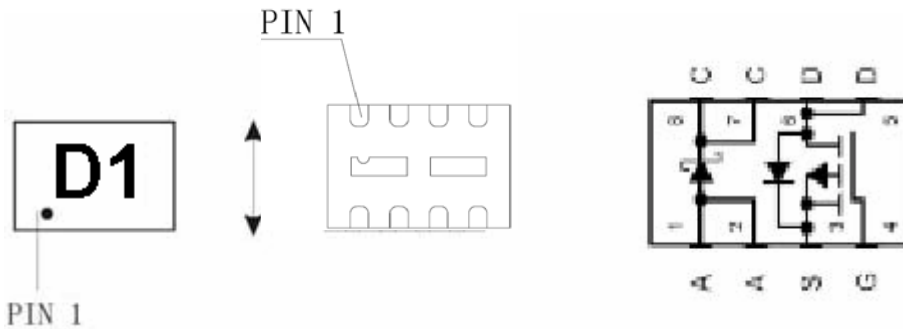
- Both a MOSFET Chip and a Schottky Diode Ship in an Package.
- Leadless Package Provides Great Thermal Characteristics
- Independent Pinout to Each Device to Ease Circuit Design
- Trench P-Channel for Low On Resistance
- Ultra Low V_f Schottky
- Pb-Free Package are Available

APPLICATIONS

- Li-Ion Battery Charging
- High Side DC-DC Conversion Circuits
- High Side Drive for Small Brushless DC Motors
- Power Management in Portable, Battery Powered Products



MARKING



MOSFET MAXIMUM RATINGS (Ta = 25°C unless otherwise noted)

| Symbol | Parameter | Value | Units |
|-----------------|---|---------|-------|
| V_{DSS} | Drain-Source voltage | -20 | V |
| V_{GS} | Gate-Source Voltage | ±8 | V |
| I_D | Continuous Drain Current | -3.2 | A |
| I_{DM} | Drain Current-Pulsed | -13 | A |
| P_D | Power Dissipation | 1.1 | W |
| T_J | Junction Temperature | 150 | °C |
| T_{stg} | Storage Temperature | -55-150 | °C |
| $R_{\theta JA}$ | Thermal Resistance from Junction to Ambient | 110 | °C /W |

SCHOTTKY DIODE MAXIMUM RATINGS(Ta= 25°C unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|-----------|-----------------------------------|-------|------|
| V_{RRM} | Peak repetitive reverse voltage | 20 | V |
| V_R | DC Blocking voltage | 20 | V |
| I_F | Average rectified forward current | 2.2 | A |

MOSFET ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Units |
|---|---------------------|--|-------|------|------|-------|
| Off Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | V _{GS} = 0V, I _D = -250μA | -20 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = -16V, V _{GS} = 0V | | | -1 | μA |
| Gate –Source leakage current | I _{GSS} | V _{GS} = ±8V, V _{DS} = 0V | | | ±100 | nA |
| On Characteristics (Note 1) | | | | | | |
| Gate Threshold Voltage | V _{GS(th)} | V _{GS} = V _{DS} , I _D = -250μA | -0.45 | | -1.5 | V |
| Drain-Source On-Resistance | R _{DS(on)} | V _{GS} = -4.5V, I _D = -3.2A | | | 80 | mΩ |
| | | V _{GS} = -2.5V, I _D = -2.2A | | | 110 | mΩ |
| | | V _{GS} = -1.8V, I _D = -1A | | | 170 | mΩ |
| Forward Transconductance | g _{FS} | V _{DS} = -10V, I _D = -2.9A | | 8.0 | | S |
| Dynamic Characteristics | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} = -10V, V _{GS} = 0V, f = 1MHz | | 680 | | pF |
| Output Capacitance | C _{oss} | | | 100 | | pF |
| Reverse Transfer Capacitance | C _{rss} | | | 70 | | pF |
| Total Gate Charge | Q _{G(TOT)} | V _{DS} = -10V, I _D = -3.2A, V _{GS} = -4.5V | | 7.4 | | nC |
| Threshold gate charge | Q _{G(TH)} | | | 0.6 | | nC |
| Gate-Source Charge | Q _{GS} | | | 1.4 | | nC |
| Gate-Drain Charge | Q _{GD} | | | 2.5 | | nC |
| Switching Characteristics(note 2) | | | | | | |
| Turn-On Delay Time | t _{d(on)} | V _{GS} = -4.5V V _{DD} = -10V, I _D = -3.2A, R _G =2.4Ω, | | 5.8 | | ns |
| Turn-On Rise Time | t _r | | | 11.7 | | ns |
| Turn-Off Delay Time | t _{d(off)} | | | 16 | | ns |
| Turn-Off Fall Time | t _f | | | 12.4 | | ns |
| Drain-Source Diode Characteristics and Maximun Ratings | | | | | | |
| Forward Diode Voltage | V _{SD} | V _{GS} = 0V, I _S = -2.5A | | | -1.2 | V |

1. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%.

2. Switching characteristics are independent of operating junction temperatures.

SCHOTTKY DIODE ELECTRICAL CHARACTERISTICS (Ta= 25°C unless otherwise noted)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|-----------------|-----------------|------|-------|-------|------|----------------------|
| Forward voltage | V _{F1} | | 0.425 | | | I _F =0.1A |
| | V _{F2} | | | 0.575 | | I _F =1A |
| Reverse current | I _{R1} | | | 1 | μA | V _R =10V |
| | I _{R2} | | | 5 | μA | V _R =20V |