

DFNWB2×2-6L-A Power Management MOSFETs-Schottky

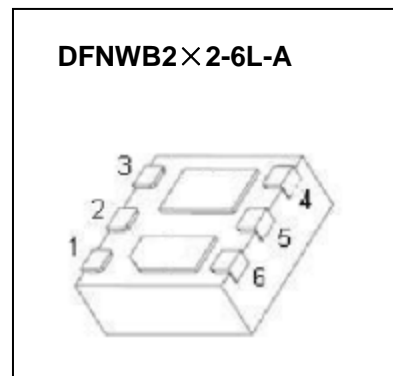
CJLJF3117P P-channel MOSFET and Schottky Barrier Diode

FEATURES

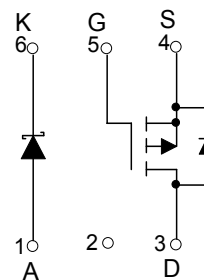
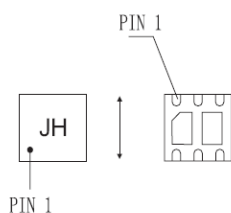
- Independent Pinout to Each Device to Ease Circuit Design
- High Current Schottky Diode
- Including a CJ2301 MOSFET and a RB551V-30 Schottky (independently) in a package

APPLICATIONS

- Optimized for Portable Applications Like Cell Phones, Digital Cameras, Media Players, etc
- DC-DC Buck Circuits
- Li-ion Battery Applications
- Color Display and Camera Flash Regulators



MARKING:



MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|--|--|----------|------|
| P-MOSFET | | | |
| V _{DS} | Drain-Source Voltage | -20 | V |
| V _{GS} | Gate-Source Voltage | ±8 | V |
| I _D | Continuous Drain Current | -3.3 | A |
| I _{DM} * | Pulse Drain Current | -10 | A |
| Schottky Barrier Diode | | | |
| V _{RRM} | Peak Repetitive Reverse Voltage | 30 | V |
| V _R | DC Blocking Voltage | 30 | V |
| I _O | Average Rectified Forward Current | 2 | A |
| Power Dissipation, Temperature and Thermal Resistance | | | |
| P _D | Power Dissipation | 0.75 | W |
| R _{θJA} | Thermal Resistance from Junction to Ambient | 83.3 | °C/W |
| T _j | Junction Temperature | 150 | °C |
| T _{stg} | Storage Temperature | -55~+150 | °C |
| T _L | Lead Temperature for Soldering Purposes(1/8" from case for 10 s) | 260 | °C |

*Repetitive rating: Pluse width limited by junction temperature.

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

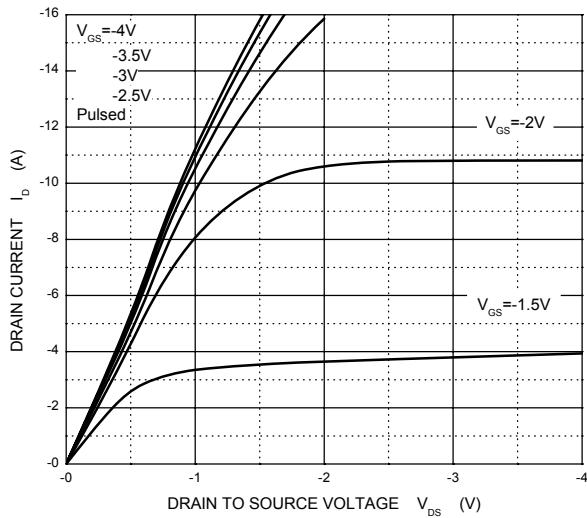
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|--|------|------|------|------|
| P-MOSFET | | | | | | |
| STATIC PARAMETERS | | | | | | |
| Drain-source breakdown voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D = -250μA | -20 | | | V |
| Zero gate voltage drain current | I _{DSS} | V _{DS} = -16V, V _{GS} = 0V | | | -1 | μA |
| Gate-body leakage current | I _{GSS} | V _{GS} = ±8V, V _{DS} = 0V | | | ±100 | nA |
| Gate threshold voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = -250μA | -0.4 | | -1 | V |
| Drain-source on-resistance(note1) | R _{DS(on)} | V _{GS} = -4.5V, I _D = -2A | | | 100 | mΩ |
| | | V _{GS} = -2.5V, I _D = -2A | | | 135 | mΩ |
| | | V _{GS} = -1.8V, I _D = -1.6A | | | 250 | mΩ |
| Forward transconductance(note1) | g _{FS} | V _{DS} = -5V, I _D = -2A | 2.5 | | | S |
| Diode forward voltage(note1) | V _{SD} | I _S = -1A, V _{GS} = 0V | | | -1 | V |
| DYNAMIC PARAMETERS (note 2) | | | | | | |
| Input capacitance | C _{iss} | V _{DS} = -10V, V _{GS} = 0V, f = 1MHz | | 531 | | pF |
| Output capacitance | C _{oss} | | | 91 | | pF |
| Reverse transfer capacitance | C _{rss} | | | 56 | | pF |
| SWITCHING PARAMETERS (note 2) | | | | | | |
| Turn-on delay time | t _{d(on)} | V _{GS} = -4.5V, V _{DD} = -5V, R _G = 6Ω, I _D = -1A | | 5.2 | | ns |
| Turn-on rise time | t _r | | | 13.2 | | ns |
| Turn-off delay time | t _{d(off)} | | | 13.7 | | ns |
| Turn-off fall time | t _f | | | 19.1 | | ns |
| Total Gate Charge | Q _g | V _{DS} = -10V, V _{GS} = -4.5V, I _D = -2A | | 5.5 | 6.2 | nC |
| Gate-Source Charge | Q _{gs} | | | 1.0 | | nC |
| Gate-Drain Charge | Q _{gd} | | | 1.4 | | nC |
| Gate Resistance | R _g | | | 8.8 | | Ω |
| SCHOTTKY BARRIER DIODE | | | | | | |
| Forward voltage | V _F | I _F = 0.1A | | | 0.39 | V |
| | | I _F = 1A | | | 0.55 | V |
| Reverse current | I _R | V _R = 30V | | | 20 | μA |
| | | V _R = 20V | | | 8 | μA |
| | | V _R = 10V | | | 4.5 | μA |
| Junction capacitance | C _j | V _R = 5V, f = 1MHz | | 30 | | pF |

Note:

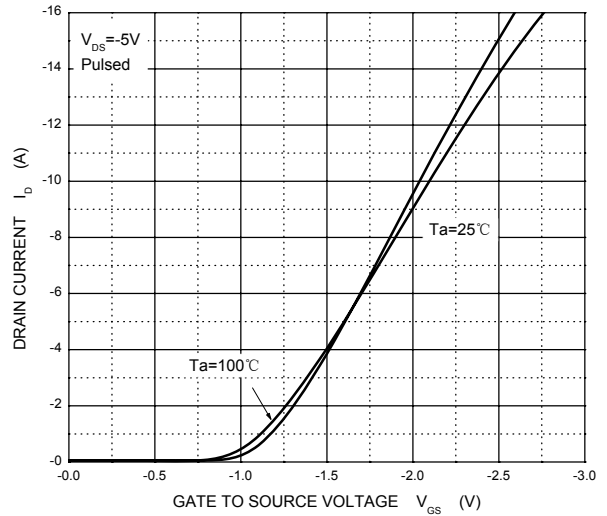
1. Pulse test: pulse width = 300μs, duty cycle ≤ 2%
2. These parameters have no way to verify.



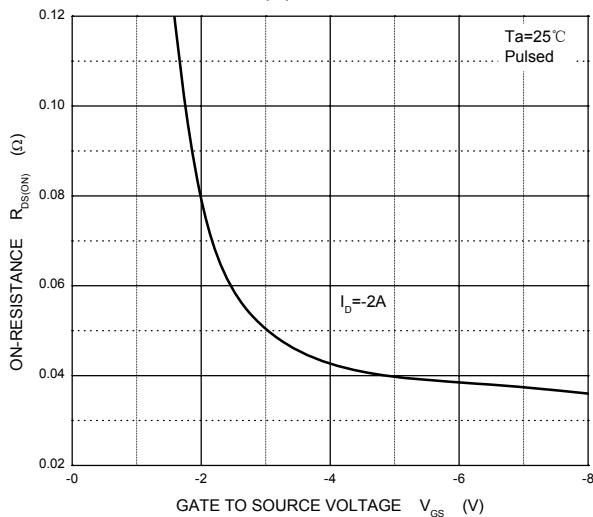
Output Characteristics



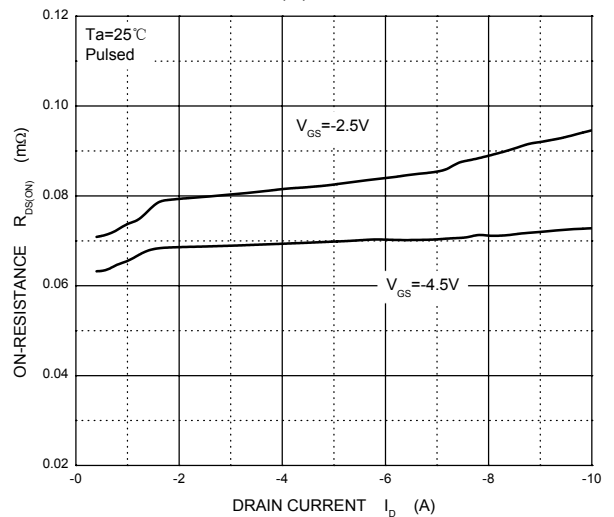
Transfer Characteristics



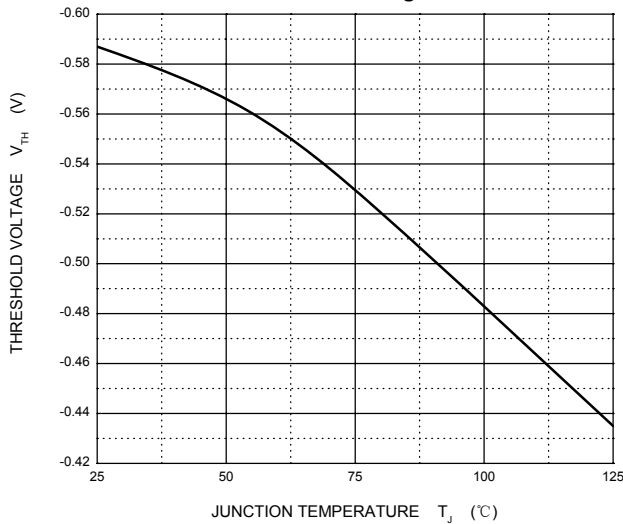
$R_{DS(ON)}$ — V_{GS}



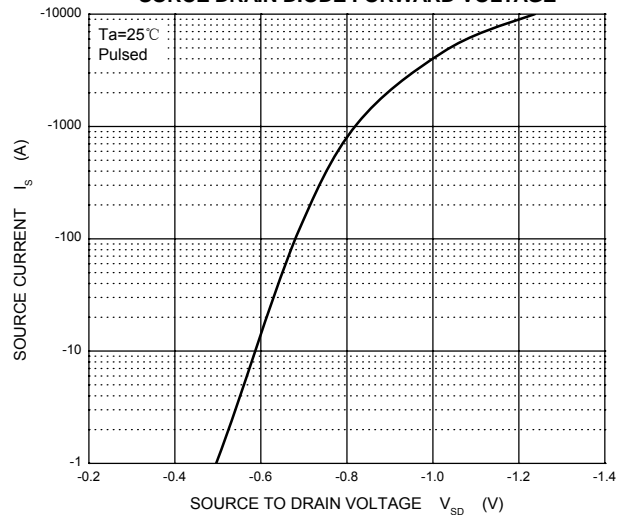
$R_{DS(ON)}$ — I_D



Threshold Voltage



SOURCE DRAIN DIODE FORWARD VOLTAGE



Schottky Characteristics

