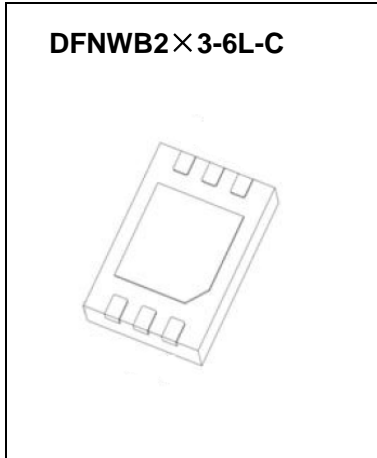


CJCD2003 Dual N-Channel MOSFET

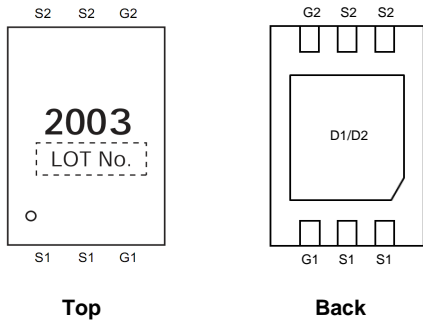


| $V_{(BR)DSS}$ | $R_{DS(on)TYP}$ | I_D |
|---------------|-----------------|-------|
| 18V | 6.2 mΩ@4.5V | 10A |
| | 6.4 mΩ@4.0V | |
| | 6.8 mΩ@3.8V | |
| | 7.2 mΩ@3.1V | |
| | 8.2 mΩ@2.5V | |

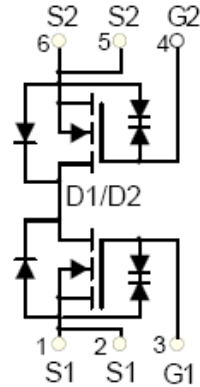
DESCRIPTION

The CJCD2003 uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. It is ESD protected. This device is suitable for use as a uni-directional or bi-directional load switch, facilitated by its common-drain configuration.

MARKING:



Equivalent Circuit



MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|-----------------|----------|---------------------------|
| Drain-Source Voltage | V_{DS} | 18 | V |
| Gate-Source Voltage | V_{GS} | ±12 | V |
| Continuous Drain Current | I_D | 10 | A |
| Pulsed Drain Current | I_{DM}^* | 50 | A |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 83.3 | $^\circ\text{C}/\text{W}$ |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55~+150 | $^\circ\text{C}$ |
| Lead Temperature for Soldering Purposes(1/8" from case for 10 s) | T_L | 260 | $^\circ\text{C}$ |

MOSFET ELECTRICAL CHARACTERISTICS

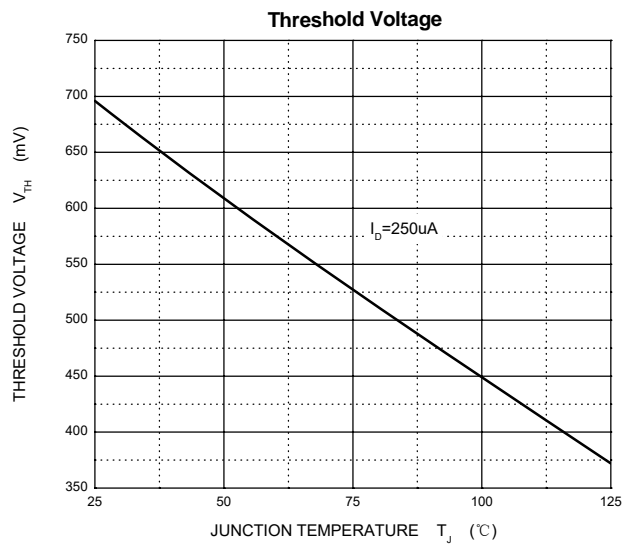
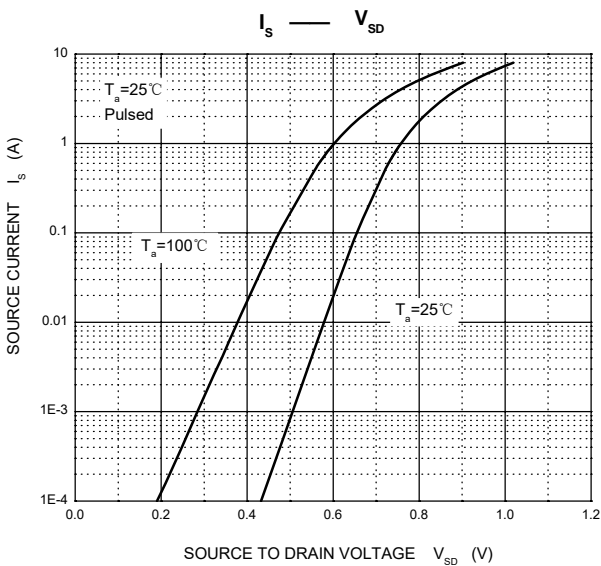
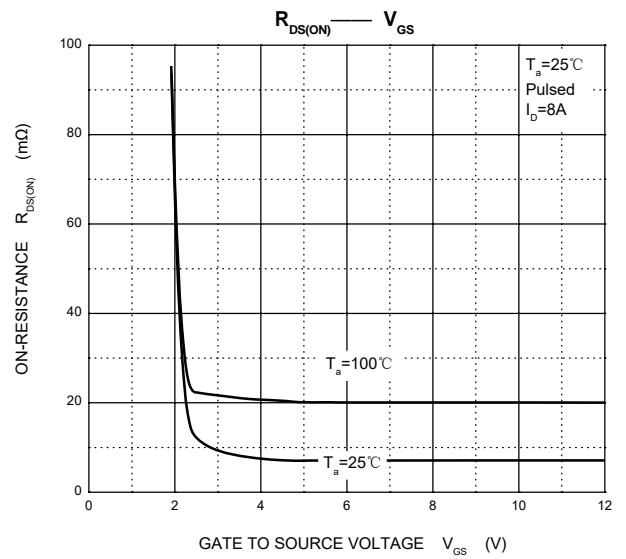
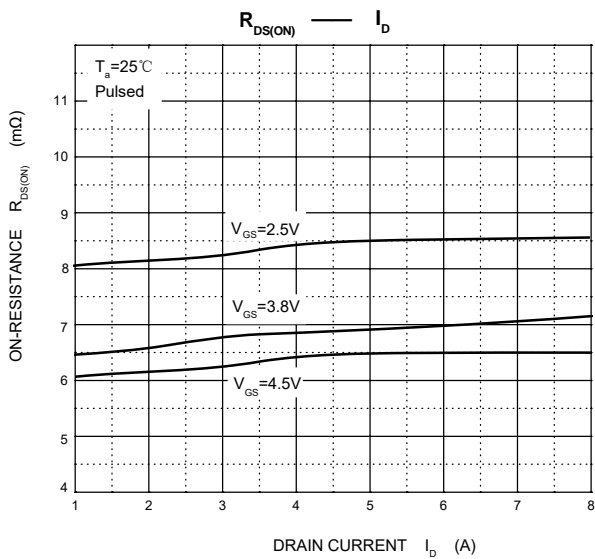
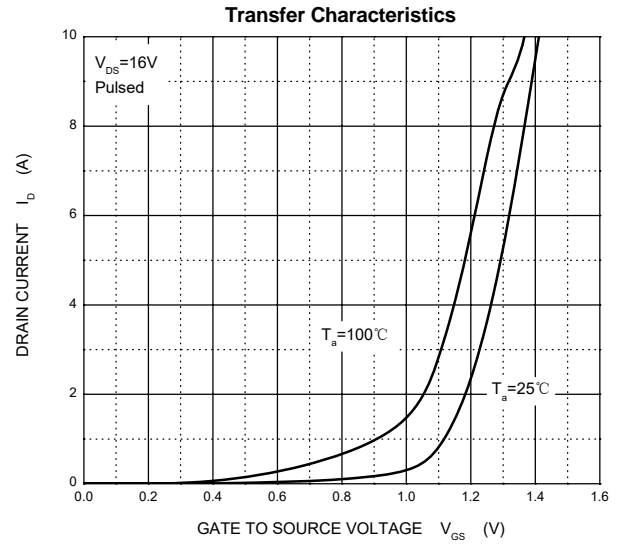
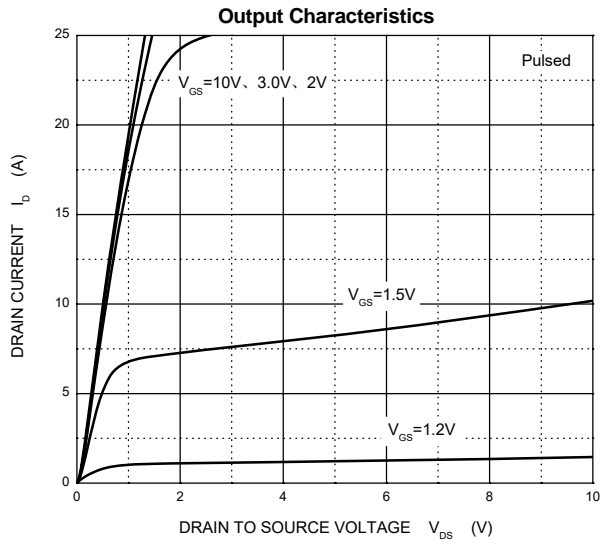
$T_a = 25^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---------------|---|-----|------|----------|-----------|
| STATIC PARAMETERS | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 250\mu A$ | 18 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = 16V, V_{GS} = 0V$ | | | 1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 4.5V, V_{DS} = 0V$ | | | ± 1 | μA |
| | | $V_{GS} = \pm 8V, V_{DS} = 0V$ | | | ± 10 | μA |
| Gate threshold voltage (note 1) | $V_{GS(th)}$ | $V_{bs} = V_{GS}, I_D = 250\mu A$ | 0.4 | | 1 | V |
| Drain-source on-resistance (note 1) | $R_{DS(on)}$ | $V_{GS} = 4.5V, I_D = 3A$ | 4.5 | 6.2 | 7.2 | $m\Omega$ |
| | | $V_{GS} = 4.0V, I_D = 3A$ | 4.8 | 6.4 | 7.5 | $m\Omega$ |
| | | $V_{GS} = 3.8V, I_D = 3A$ | 5.0 | 6.8 | 8.2 | $m\Omega$ |
| | | $V_{GS} = 3.1V, I_D = 3A$ | 5.5 | 7.2 | 9.2 | $m\Omega$ |
| | | $V_{GS} = 2.5V, I_D = 3A$ | 6.2 | 8.2 | 10.5 | $m\Omega$ |
| Forward transconductance (note 1) | g_{FS} | $V_{DS} = 5V, I_D = 7A$ | 9 | 36 | | S |
| Diode forward voltage (note 1) | V_{SD} | $I_S = 1A, V_{GS} = 0V$ | | | 1 | V |
| DYNAMIC PARAMETERS (note 2) | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$ | | 1950 | | μF |
| Output Capacitance | C_{oss} | | | 250 | | μF |
| Reverse Transfer Capacitance | C_{rss} | | | 210 | | μF |
| Total gate charge | Q_g | $V_{DS} = 10V, V_{GS} = 4.5V, I_D = 7A$ | | 17 | | nC |
| Gate-source charge | Q_{gs} | | | 2.0 | | nC |
| Gate-drain charge | Q_{gd} | | | 5.1 | | nC |
| SWITCHING PARAMETERS (note 2) | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{GS} = 5V, V_{DD} = 10V,$ $R_L = 1.35\Omega, R_{GEN} = 3\Omega$ | | 2.2 | | ns |
| Turn-on rise time | t_r | | | 5.9 | | ns |
| Turn-off delay time | $t_{d(off)}$ | | | 40 | | ns |
| Turn-off fall time | t_f | | | 90 | | ns |
| Drain-Source Diode Characteristics | | | | | | |
| Diode Forward Current | I_S | | - | - | 6.0 | A |

Notes :

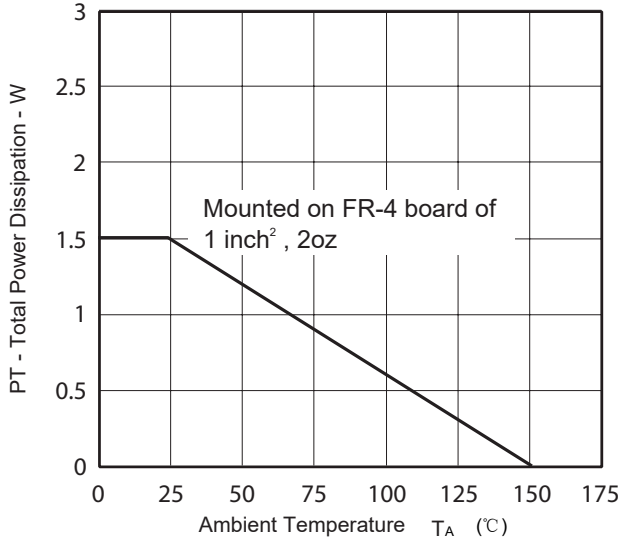
1. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.
2. Guaranteed by design, not subject to production testing.

Typical Characteristics

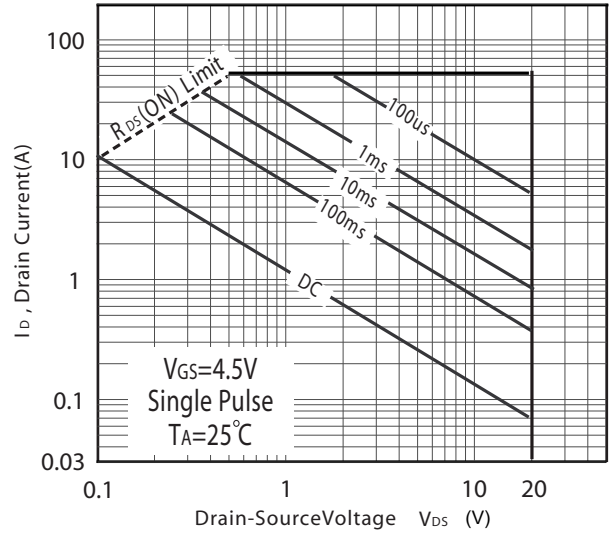


Typical Characteristics

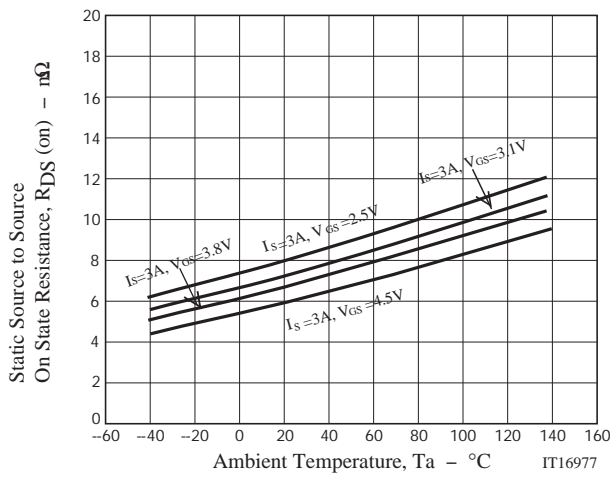
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



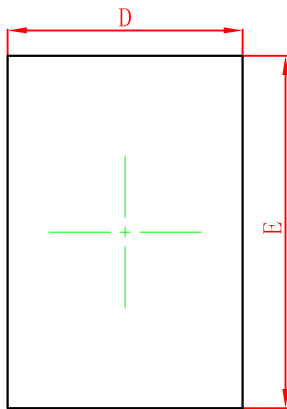
Maximum Safe Operating Area



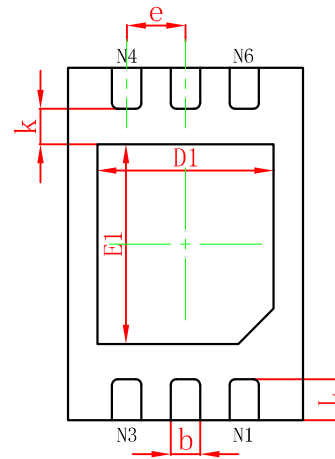
CJCD2003 $R_{DS(on)}$ vs. T_A



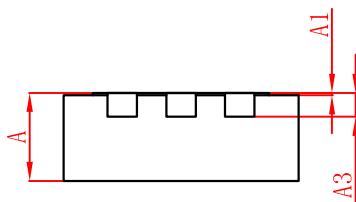
DFNWB2×3-6L Package Outline Dimensions(Unit:mm)



TOP VIEW



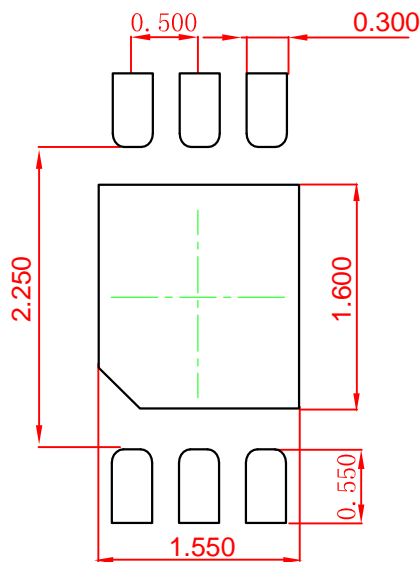
BOTTOM VIEW



SIDE VIEW

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.700 | 0.800 | 0.028 | 0.031 |
| A1 | 0.000 | 0.050 | 0.000 | 0.002 |
| A3 | 0.203REF. | | 0.008REF. | |
| D | 1.950 | 2.050 | 0.077 | 0.081 |
| E | 2.950 | 3.050 | 0.116 | 0.120 |
| D1 | 1.450 | 1.550 | 0.057 | 0.061 |
| E1 | 1.650 | 1.750 | 0.065 | 0.069 |
| k | 0.200MIN. | | 0.008MIN. | |
| b | 0.200 | 0.300 | 0.008 | 0.012 |
| e | 0.500TYP. | | 0.020TYP. | |
| L | 0.300 | 0.400 | 0.012 | 0.016 |

DFNWB2×3-6L Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.050 mm.
3. The pad layout is for reference purposes only.

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