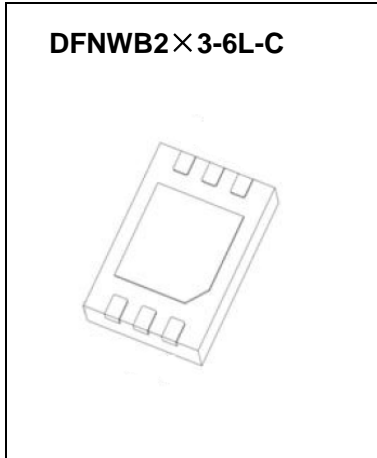


**CJCD2003 Dual N-Channel MOSFET**

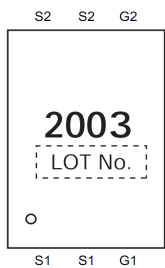


$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
18V	6.2 mΩ@4.5V	10A
	6.4 mΩ@4.0V	
	6.8 mΩ@3.8V	
	7.2 mΩ@3.1V	
	8.2 mΩ@2.5V	

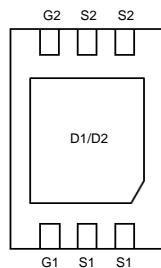
**DESCRIPTION**

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:**

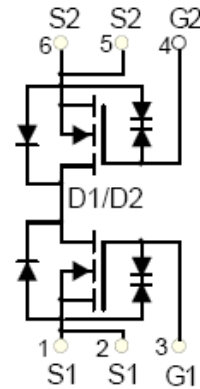


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**Equivalent Circuit**



**MAXIMUM RATINGS ( $T_a=25^{\circ}C$  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	$^{\circ}C/W$
Junction Temperature	$T_j$	150	$^{\circ}C$
Storage Temperature	$T_{stg}$	-55~+150	$^{\circ}C$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	$T_L$	260	$^{\circ}C$

# MOSFET ELECTRICAL CHARACTERISTICS

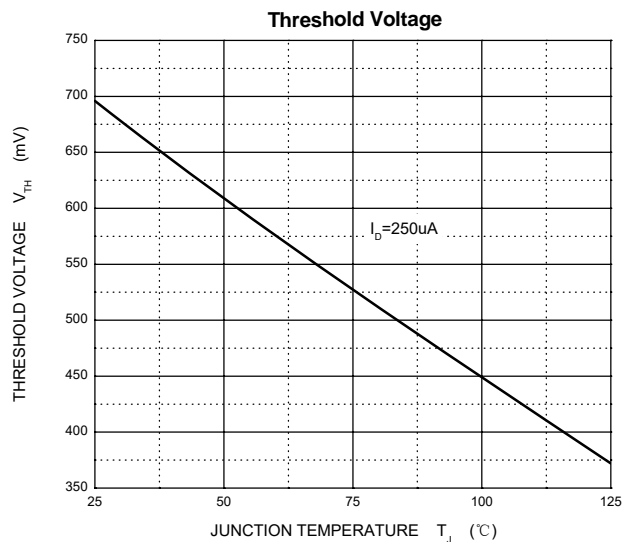
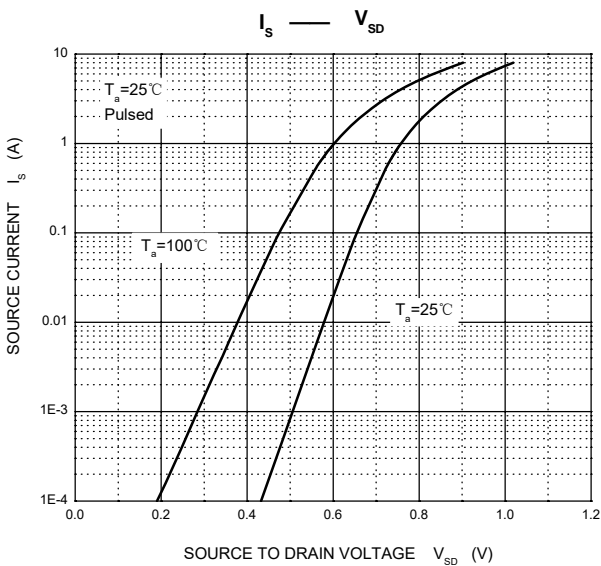
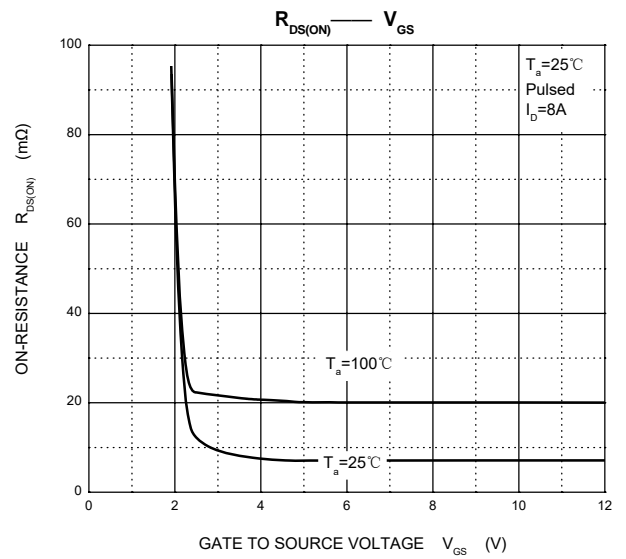
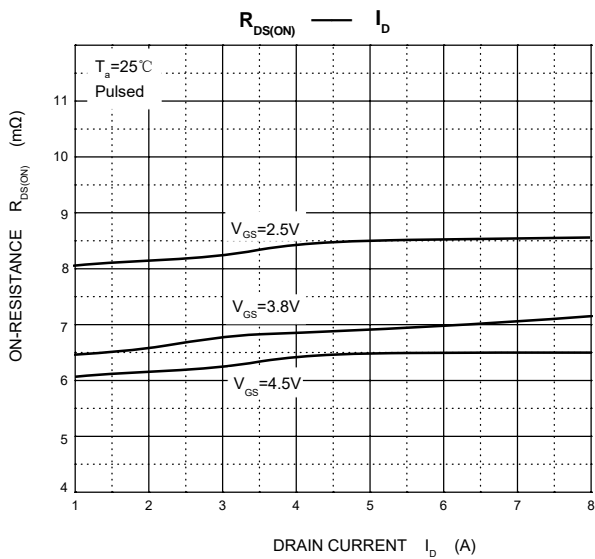
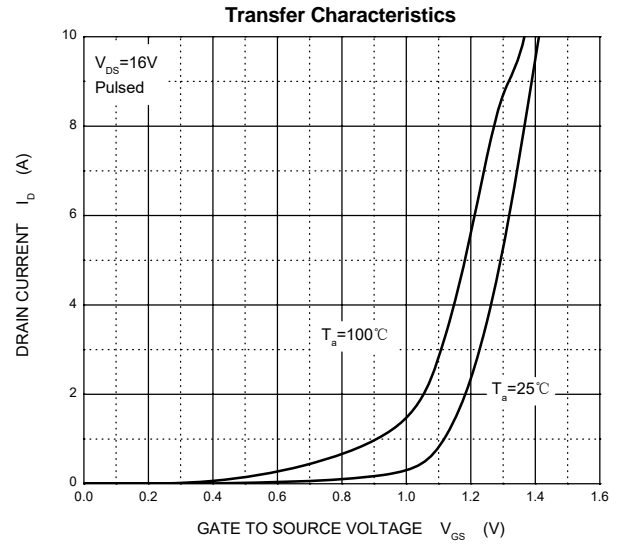
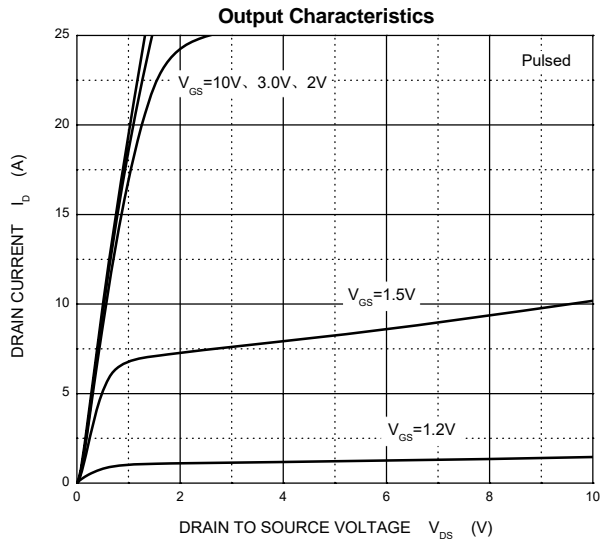
$T_a = 25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
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	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 4.5V, V_{DS} = 0V$			$\pm 1$	$\mu A$
		$V_{GS} = \pm 8V, V_{DS} = 0V$			$\pm 10$	$\mu A$
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
<b>DYNAMIC PARAMETERS (note 2)</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		1950		pF
Output Capacitance	$C_{oss}$			250		pF
Reverse Transfer Capacitance	$C_{rss}$			210		pF
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
<b>SWITCHING PARAMETERS (note 2)</b>						
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
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Current	$I_S$		-	-	6.0	A

**Notes :**

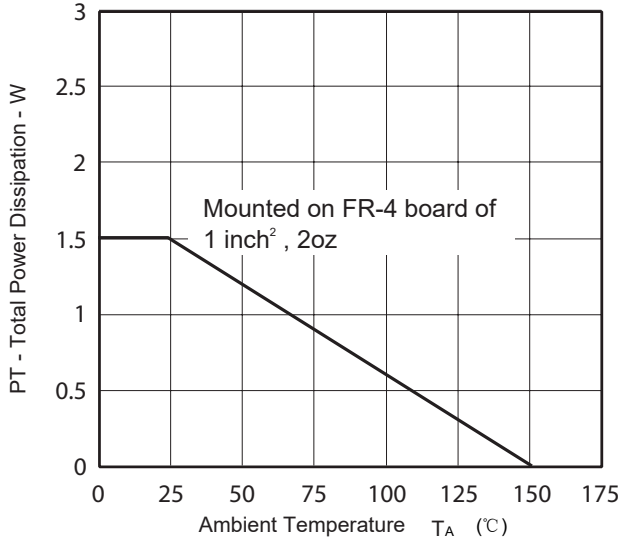
1. Pulse Test : Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 0.5\%$ .
2. Guaranteed by design, not subject to production testing.

# Typical Characteristics

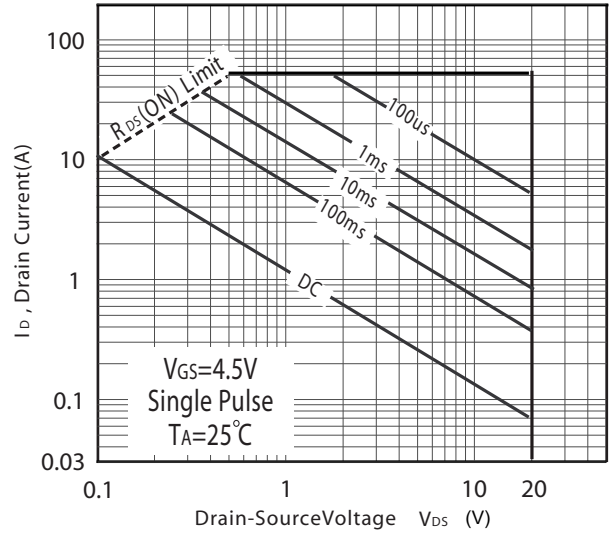


# Typical Characteristics

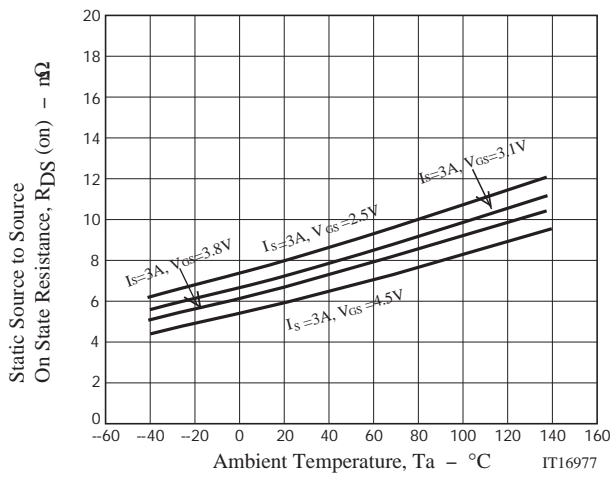
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



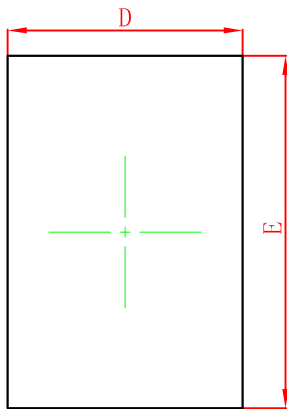
Maximum Safe Operating Area



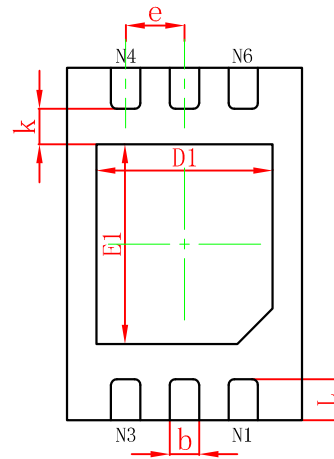
CJCD2003  $R_{DS(on)}$  vs.  $T_A$



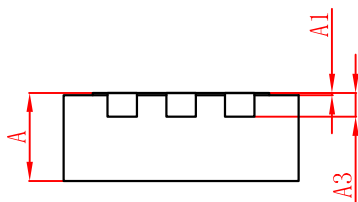
## DFNWB2×3-6L Package Outline Dimensions(Unit:mm)



TOP VIEW



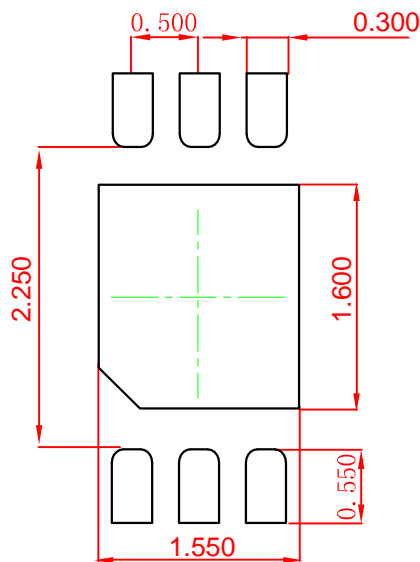
BOTTOM VIEW



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:  $\pm 0.050$ mm.
3. The pad layout is for reference purposes only.

### NOTICE

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