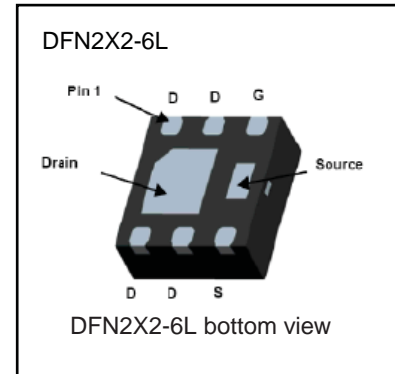
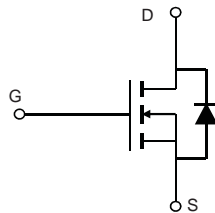


N-Channel MOSFET

2KK5051DFN

■ Features

- $V_{DS} = 20\text{ V}$
- $I_D = 12\text{ A}$
- Low Gate Threshold Voltage
- Fast Switching Speed

■ Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	20	V	
Gate-Source Voltage	V_{GS}	± 8		
Continuous Drain Current	I_D	12	A	
Pulsed Drain Current	I_{DM}	26		
Power Dissipation	PD	$T_A=25^\circ\text{C}$	1.4	W
		$T_A=70^\circ\text{C}$	0.9	
Thermal Resistance, Junction- to-Ambient (Note 1)	$R_{\theta JA}$	90	$^\circ\text{C/W}$	
Operating Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$	

1. The device mounted on 1 in^2 FR4 board with 2 oz copper

N-Channel MOSFET

2KK5051DFN

■ Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\ \mu\text{A}$, $V_{GS} = 0\ \text{V}$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20\ \text{V}$, $V_{GS} = 0\ \text{V}$			1	μA
Gate to Source Leakage Current	I_{GSS}	$V_{DS} = 0\ \text{V}$, $V_{GS} = \pm 8\ \text{V}$			± 100	nA
Gate to Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	0.4		1	V
Static Drain-Source On-Resistance (Note 2)	$R_{DS(on)}$	$V_{GS} = 4.5\ \text{V}$, $I_D = 4\ \text{A}$		12	15	m Ω
		$V_{GS} = 2.5\ \text{V}$, $I_D = 4\ \text{A}$		16	20	
		$V_{GS} = 1.8\ \text{V}$, $I_D = 4\ \text{A}$		20	30	
Input Capacitance	C_{iss}	$V_{GS} = 0\ \text{V}$, $V_{DS} = 10\ \text{V}$, $f = 1\ \text{MHz}$		150		pF
Output Capacitance	C_{oss}			95		
Reverse Transfer Capacitance	C_{rss}			25		
Total Gate Charge	Q_g	$V_{GS} = 4.5\ \text{V}$, $V_{DS} = 10\ \text{V}$, $I_D = 6.5\ \text{A}$		10		nC
Gate Source Charge	Q_{gs}			0.9		
Gate Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 5\ \text{V}$, $R_L = 1.5\ \Omega$, $V_{DS} = 10\ \text{V}$, $R_{GEN} = 3\ \Omega$		250		ns
Turn-On Rise Time	t_r			420		
Turn-Off Delay Time	$t_{d(off)}$			3950		
Turn-Off Fall Time	t_f			3700		
Diode Forward Voltage	V_{SD}	$V_{GS} = 0\ \text{V}$, $I_S = 5\ \text{A}$			1	V

2. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$

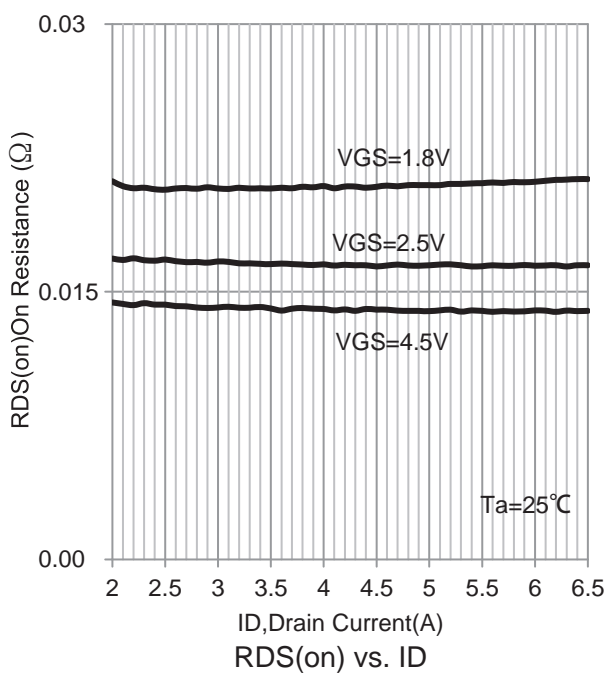
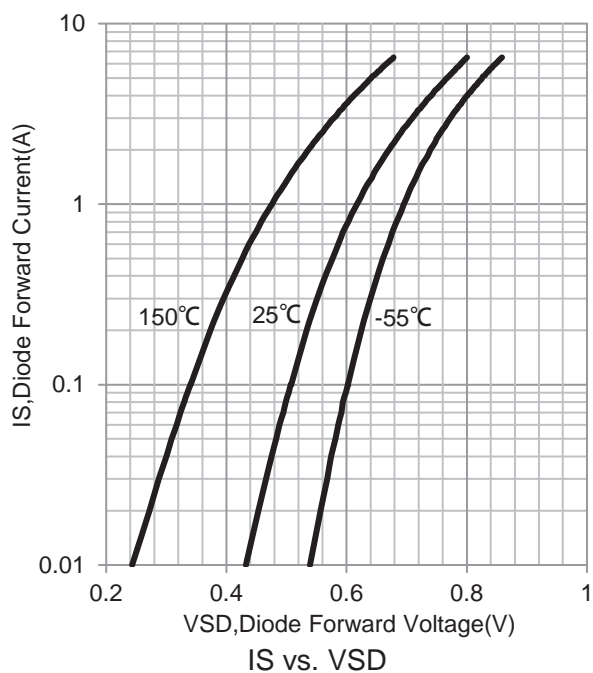
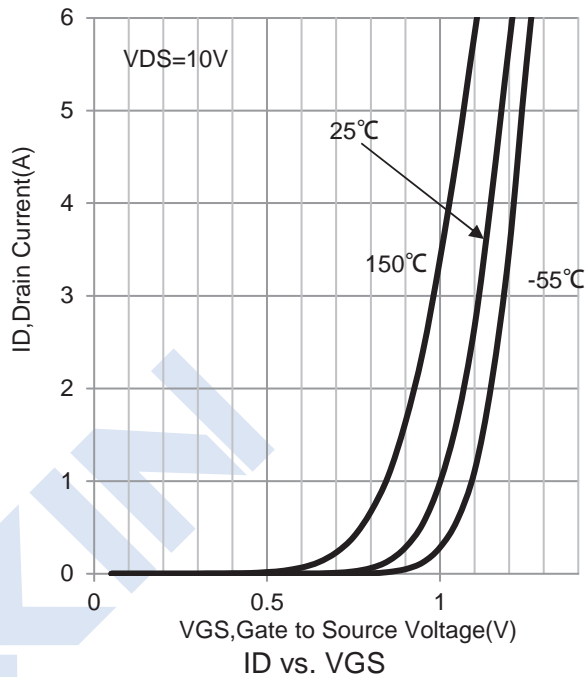
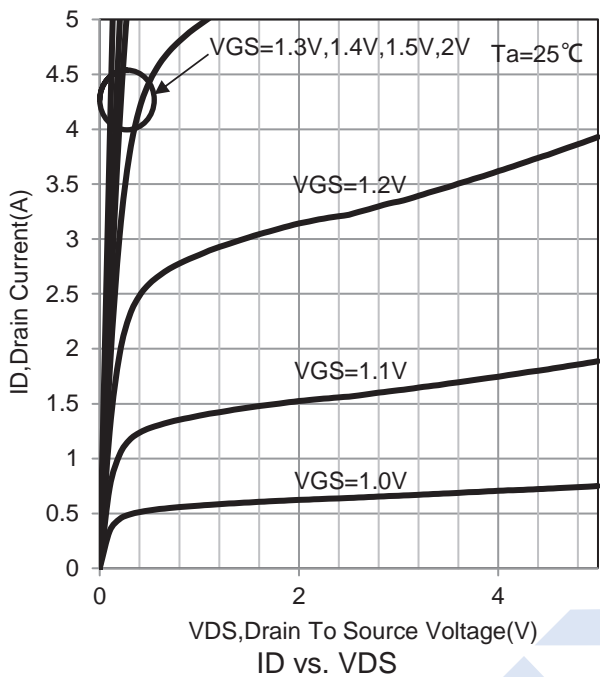
■ Marking

Marking	KBY
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N-Channel MOSFET

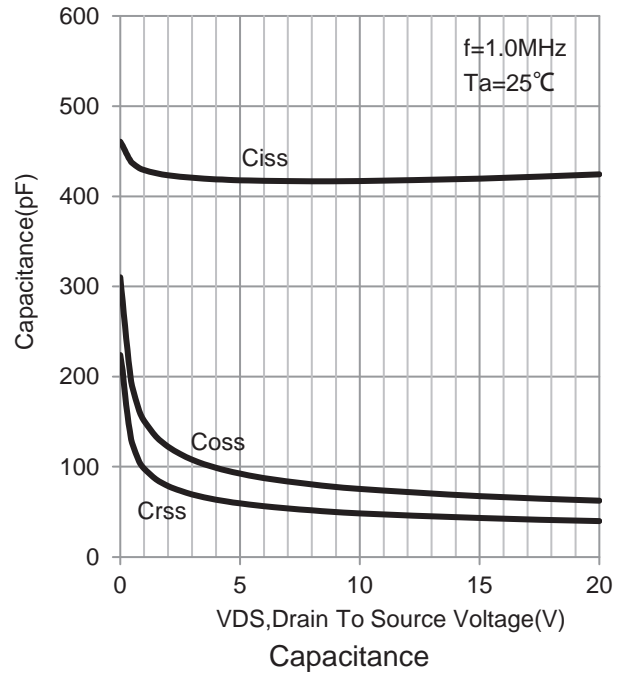
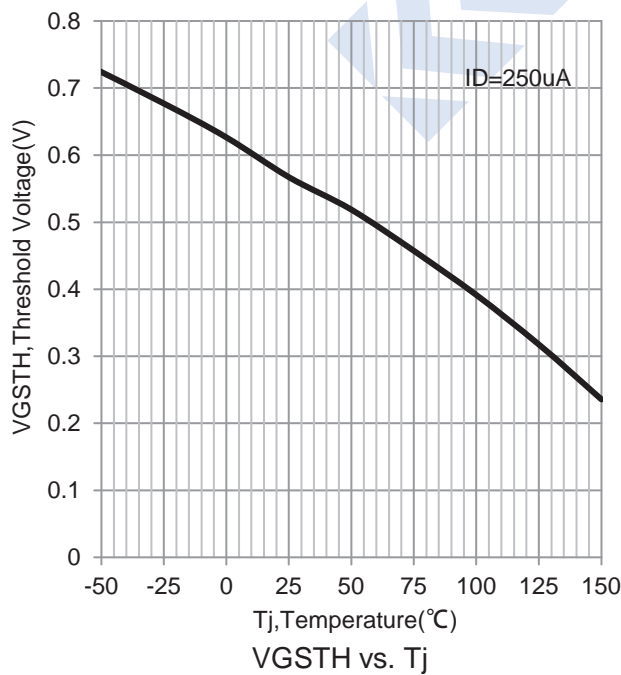
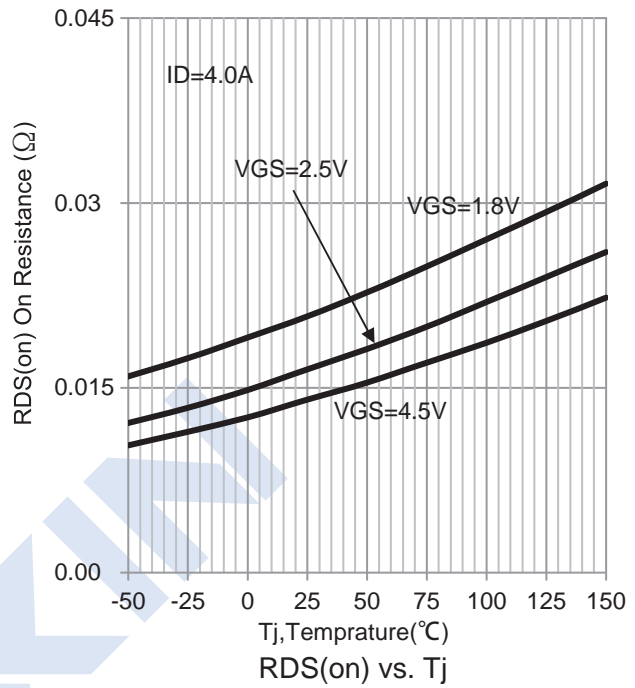
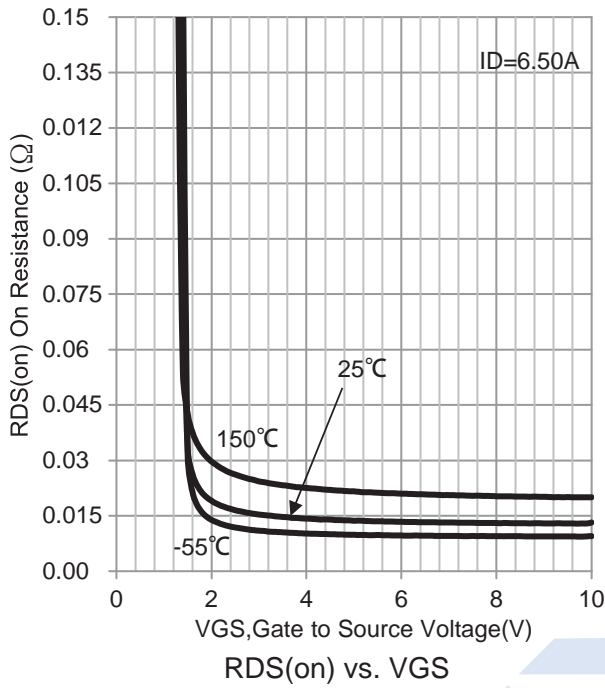
2KK5051DFN

■ Typical Characteristics



N-Channel MOSFET

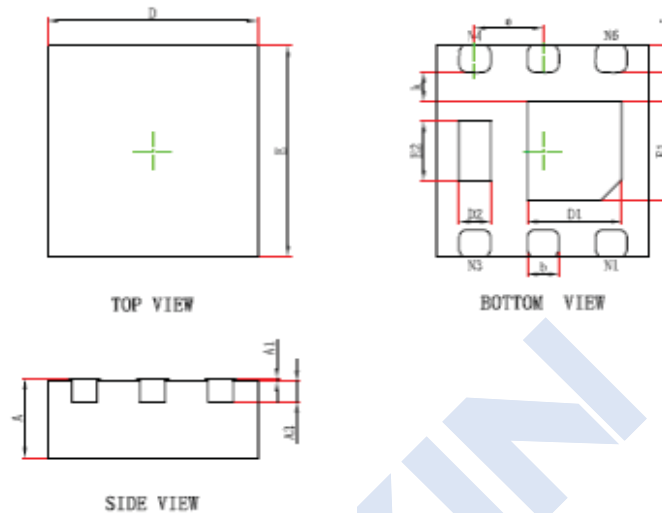
2KK5051DFN



N-Channel MOSFET

2KK5051DFN

■ DFN2X2-6L Package Outline Dimensions



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	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	0.018	0.026
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013

Notes

1. All dimensions are in millimeters.
2. Tolerance $\pm 0.10\text{mm}$ (4 mil) unless otherwise specified
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.
4. Dimension L is measured in gauge plane.
5. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.