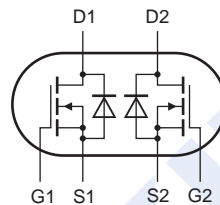
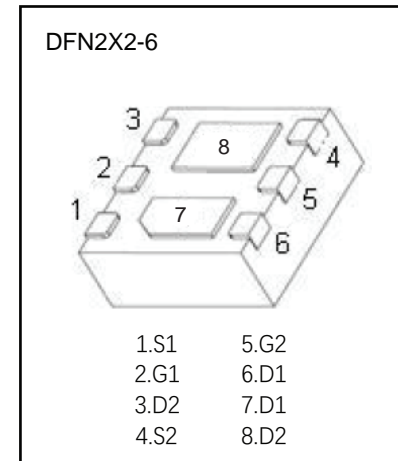


## Dual N-channel MOSFET

## 2KK5014DFN

## ■ Features

- $V_{DS} = 20\text{ V}$
- $I_D = 8\text{ A}$
- 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	$V_{GS}$	$\pm 8$		
Continuous Drain Current	$I_D$	8	A	
Pulsed Drain Current	$I_{DM}$	26		
Power Dissipation	P <sub>D</sub>	$T_A = 25^\circ\text{C}$	1.4	W
		$T_A = 70^\circ\text{C}$	0.9	
Thermal Resistance, Junction- to-Ambient (Note 1)	$R_{\theta JA}$	90	$^\circ\text{C}/\text{W}$	
Operating Junction Temperature	$T_J$	-55 to 150	$^\circ\text{C}$	

1. The device mounted on 1in<sup>2</sup> FR4 board with 2 oz copper

## Dual N-channel MOSFET

## 2KK5014DFN

■ 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	$\mu\text{A}$
Gate to Source Leakage Current	$I_{GSS}$	$V_{DS} = 0\text{V}$ , $V_{GS} = \pm 8\text{V}$			$\pm 100$	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)	$R_{DS(on)}$	$V_{GS} = 4.5\text{V}$ , $I_D = 4\text{A}$		22	25	m $\Omega$
		$V_{GS} = 2.5\text{V}$ , $I_D = 4\text{A}$		26	30	
		$V_{GS} = 1.8\text{V}$ , $I_D = 4\text{A}$		32	50	
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  $\leq 2\%$

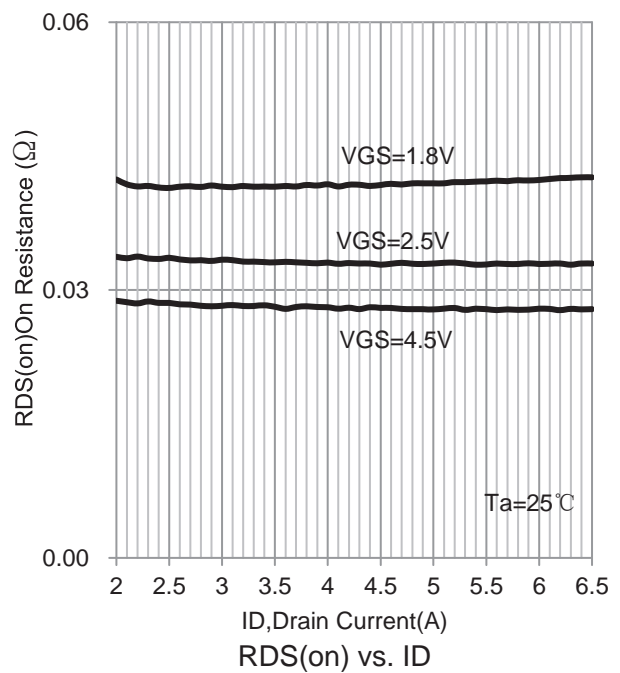
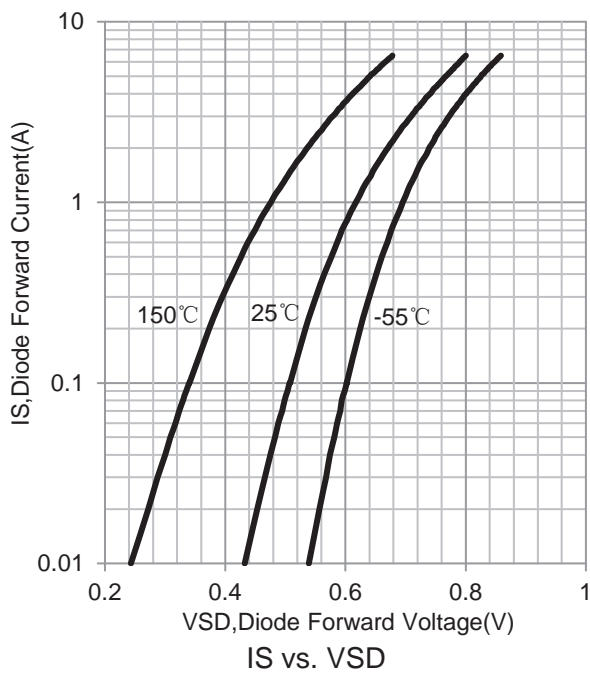
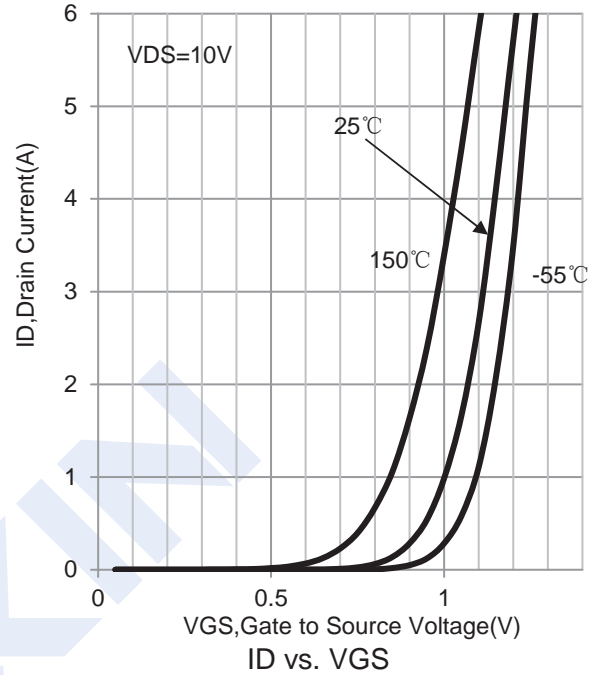
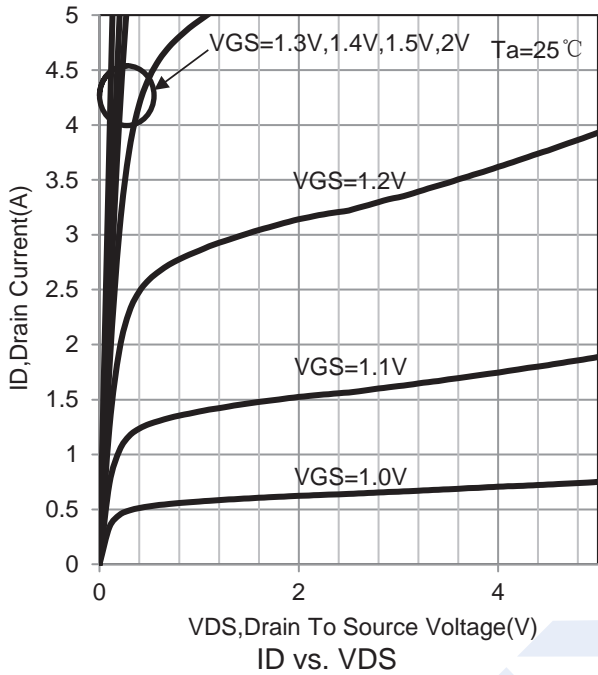
## ■ Marking

Marking	KBZ
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### Dual N-channel MOSFET

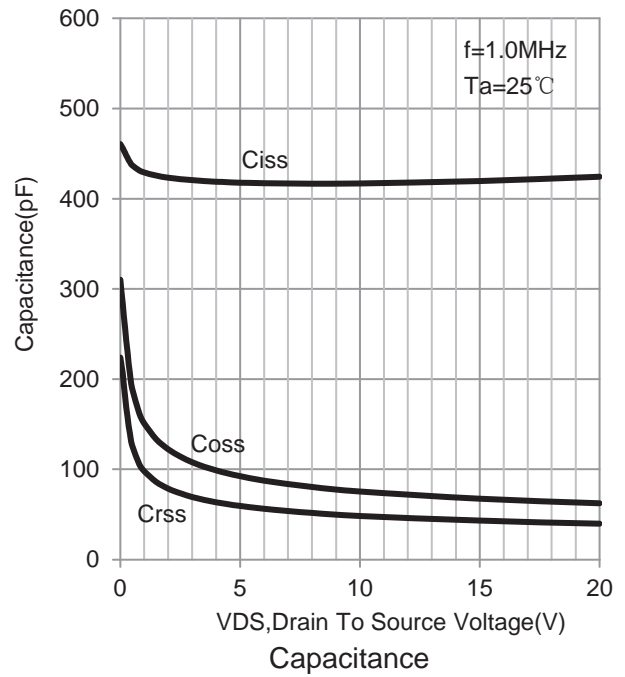
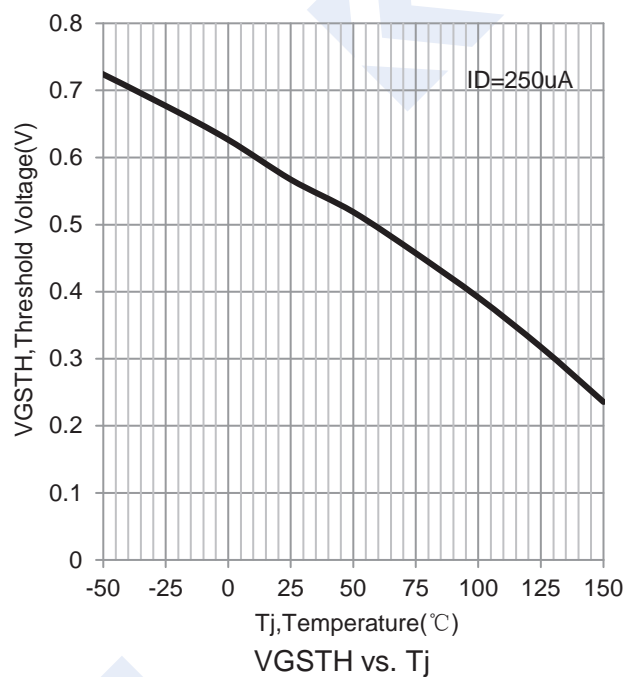
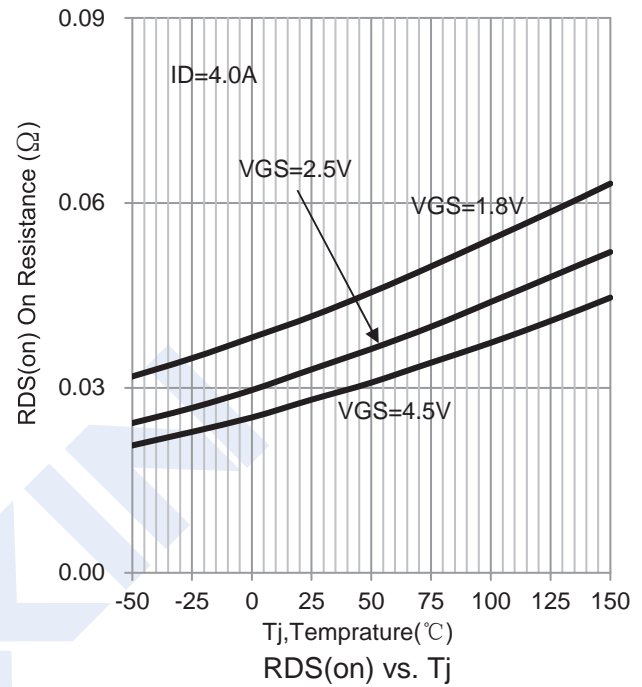
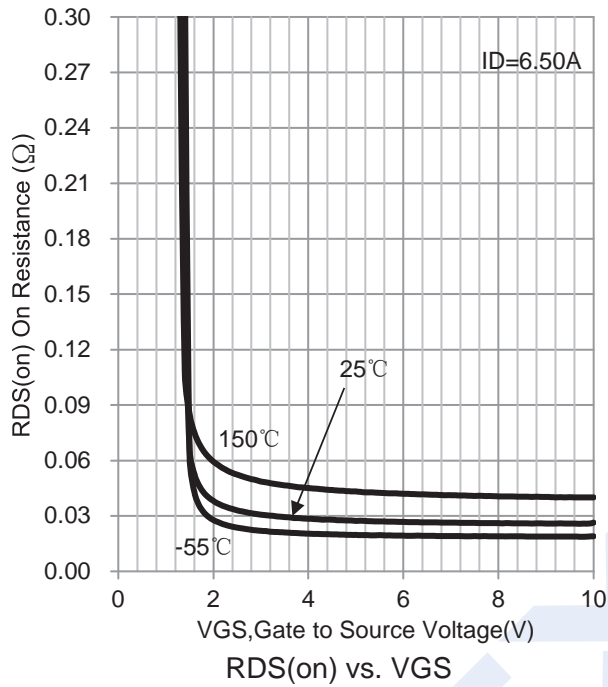
### 2KK5014DFN

■ Typical Characteristics



### Dual N-channel MOSFET

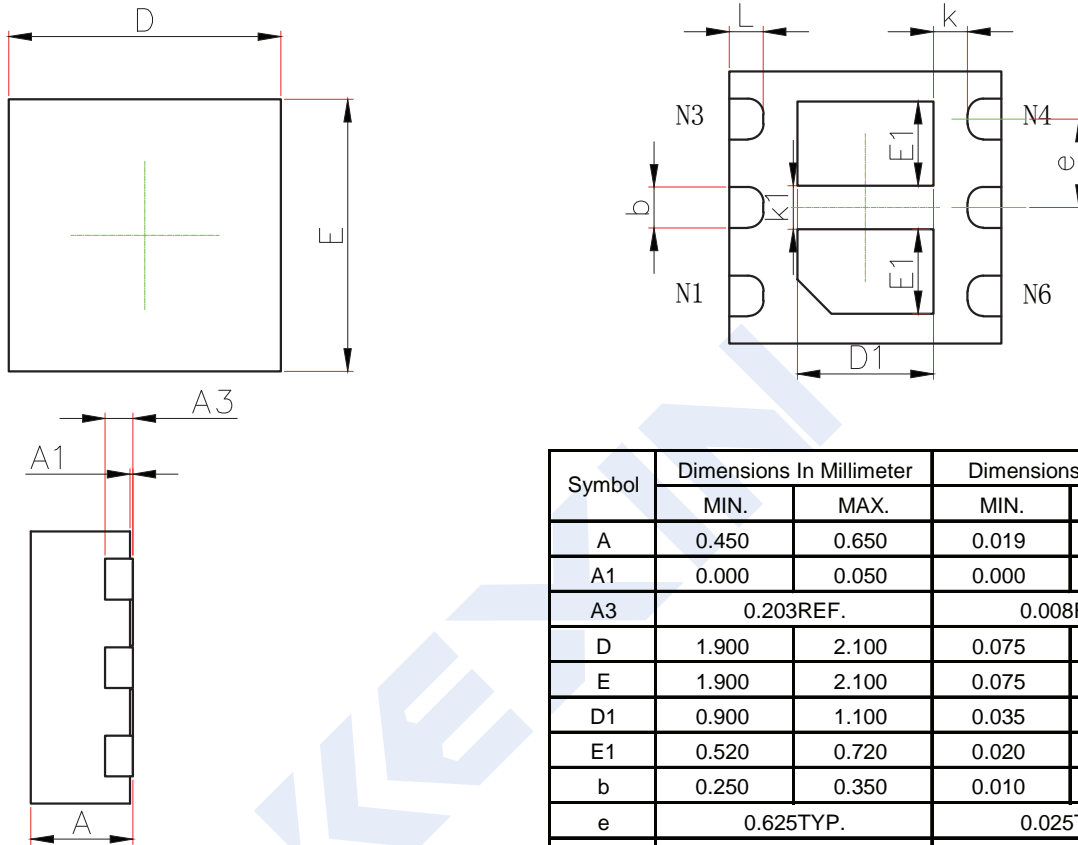
### 2KK5014DFN



## Dual N-channel MOSFET

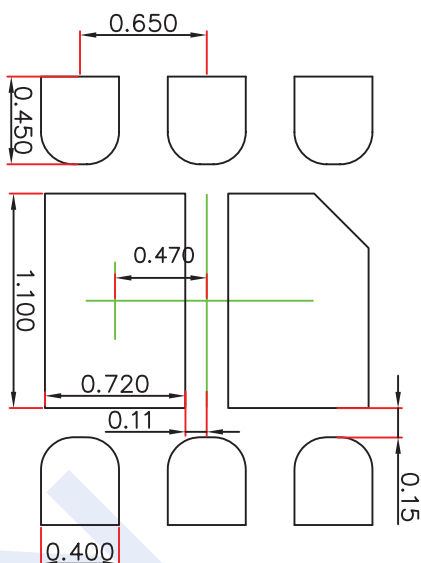
## 2KK5014DFN

## ■ DFN2X2-6 Package Outline Dimensions



Symbol	Dimensions In Millimeter		Dimensions In Inches	
	MIN.	MAX.	MIN.	MAX.
A	0.450	0.650	0.019	0.026
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.900	1.100	0.035	0.043
E1	0.520	0.720	0.020	0.028
b	0.250	0.350	0.010	0.014
e	0.625TYP.		0.025TYP.	
k	0.200MIN.		0.008MIN.	
k1	0.320REF.		0.013REF.	
L	0.200	0.300	0.008	0.012

## ■ DFN2X2-6L-A Suggested Pad Layout



## Note:

1. Controlling dimension: in millimeters,
2. General tolerance:  $\pm 0.050\text{mm}$ ,
3. The pad layout is for reference purposes only.