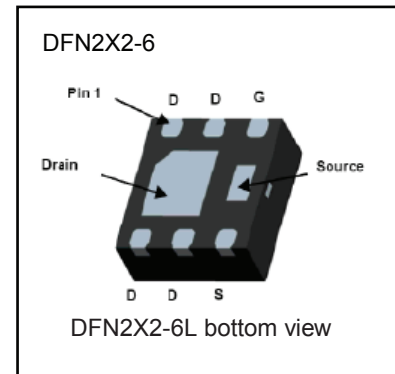
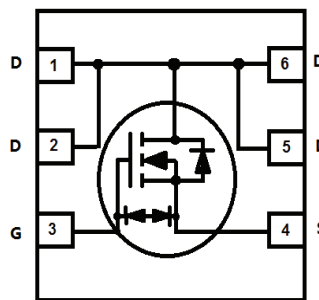


## N-Channel MOSFET

## 2KK5018DFN

### ■ Features

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



### ■ 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	$V_{GS}$	$\pm 10$		
Continuous Drain Current	$I_D$	12	A	
Pulsed Drain Current	$I_{DM}$	40		
Power Dissipation	$P_D$	$T_A = 25^\circ\text{C}$	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  $1\text{ in}^2$  FR4 board with 2 oz copper

## N-Channel MOSFET

## 2KK5018DFN

■ Electrical Characteristics (T<sub>J</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	I <sub>D</sub> = 250 μA, V <sub>GS</sub> = 0V	20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 20 V, V <sub>GS</sub> = 0 V			1	μA
Gate to Source Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±10 V			±10	μA
Gate to Source Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	0.4		1	V
Static Drain-Source On-Resistance (Note 2)	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 5 A			15	mΩ
		V <sub>GS</sub> = 2.5 V, I <sub>D</sub> = 5 A			18	
		V <sub>GS</sub> = 1.8 V, I <sub>D</sub> = 5 A			30	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 10 V, f = 1 MHz		150		pF
Output Capacitance	C <sub>oss</sub>			95		
Reverse Transfer Capacitance	C <sub>rss</sub>			25		
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> = 4.5V, V <sub>DS</sub> = 10 V, I <sub>D</sub> = 6.5A		10		nC
Gate Source Charge	Q <sub>gs</sub>			0.9		
Gate Drain Charge	Q <sub>gd</sub>			3		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> = 5V, R <sub>L</sub> = 1.5Ω, V <sub>DS</sub> = 10 V, R <sub>GEN</sub> = 3Ω		250		ns
Turn-On Rise Time	t <sub>r</sub>			420		
Turn-Off DelayTime	t <sub>d(off)</sub>			3950		
Turn-Off Fall Time	t <sub>f</sub>			3700		
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0 V, I <sub>S</sub> = 5 A			1	V

2. Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%

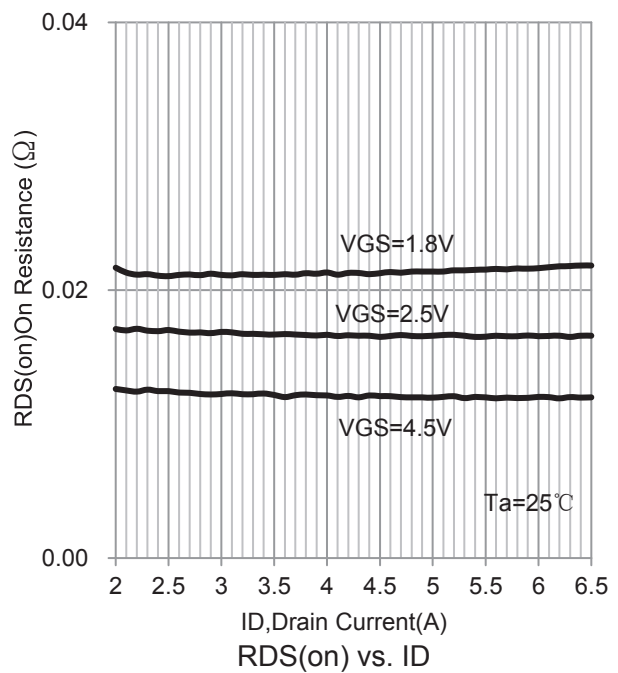
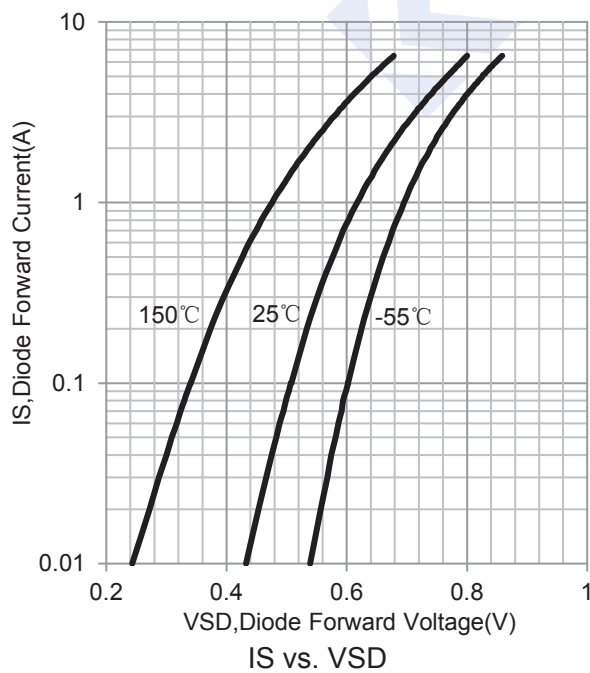
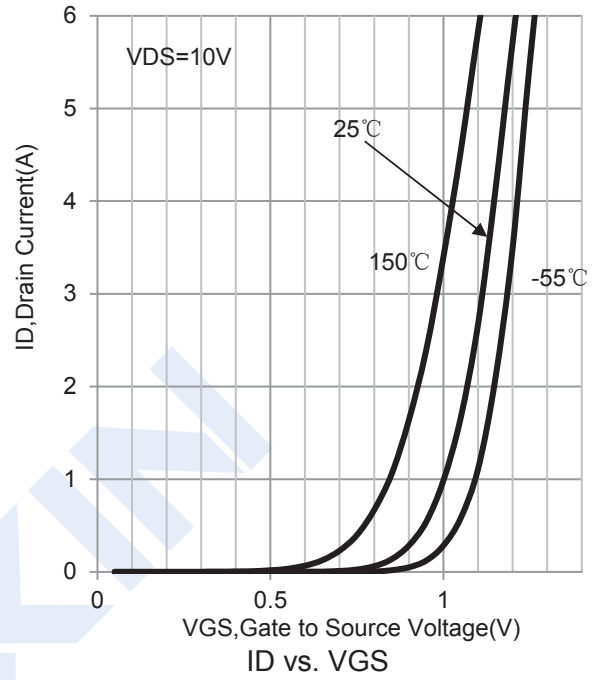
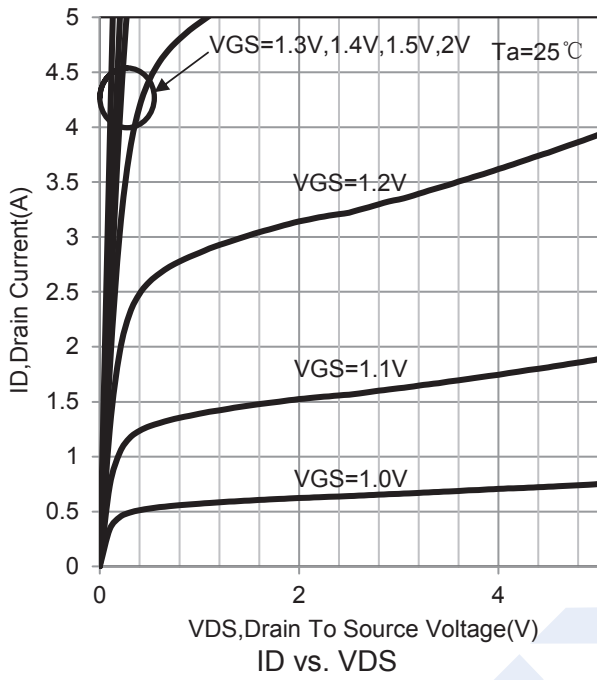
## ■ Ordering Information

Device	Marking	Shipping
2KK5018DFN	2408E	4000/Tape&Reel

### N-Channel MOSFET

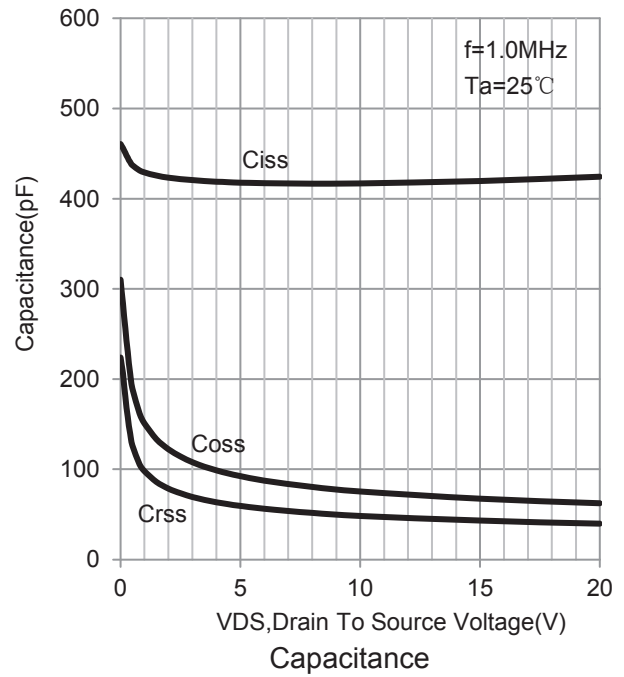
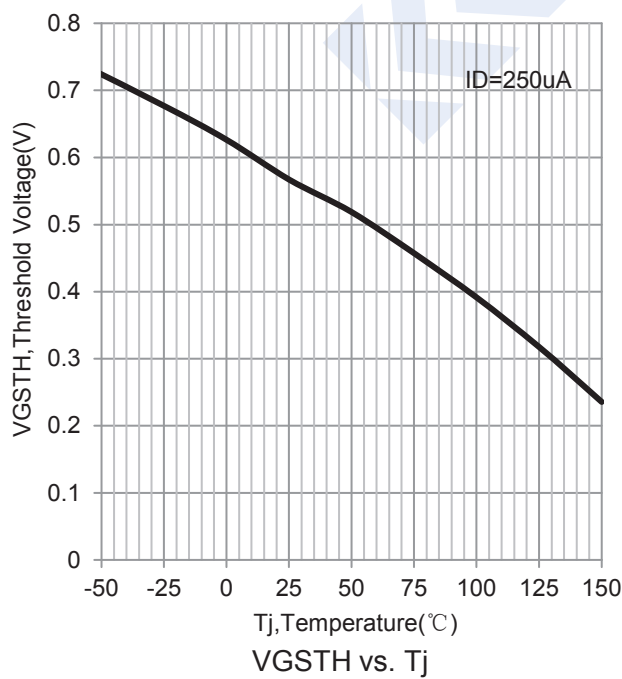
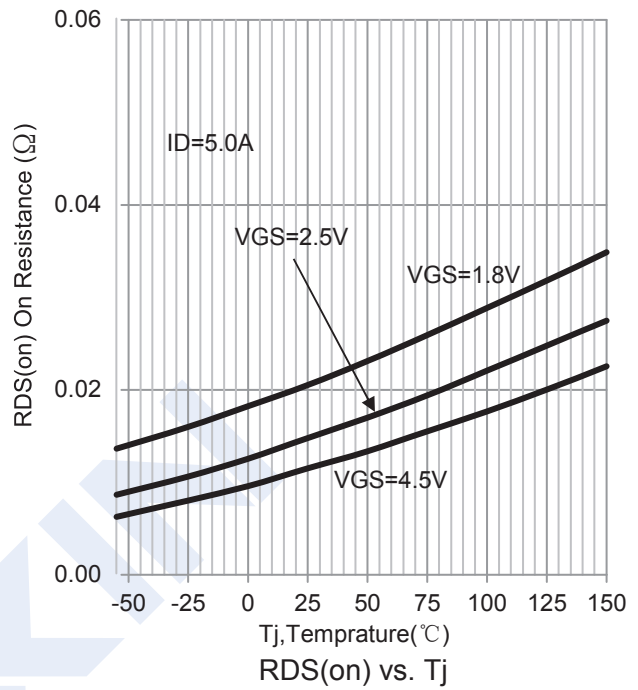
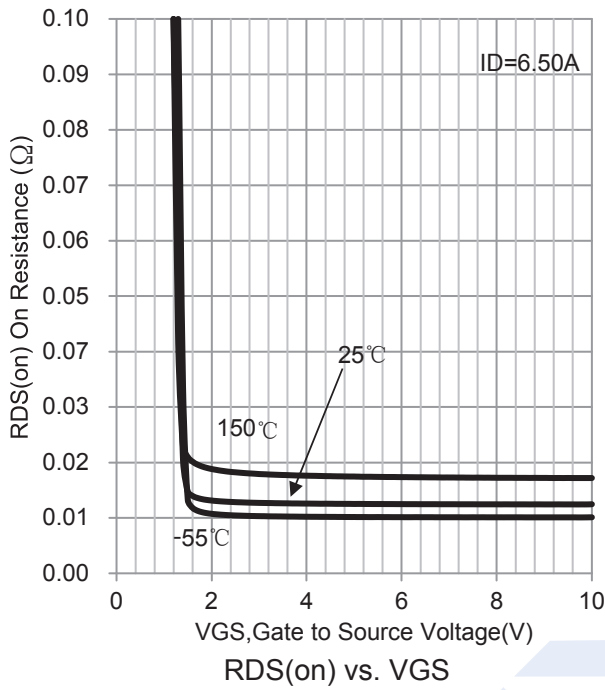
### 2KK5018DFN

■ Typical Characteristics



### N-Channel MOSFET

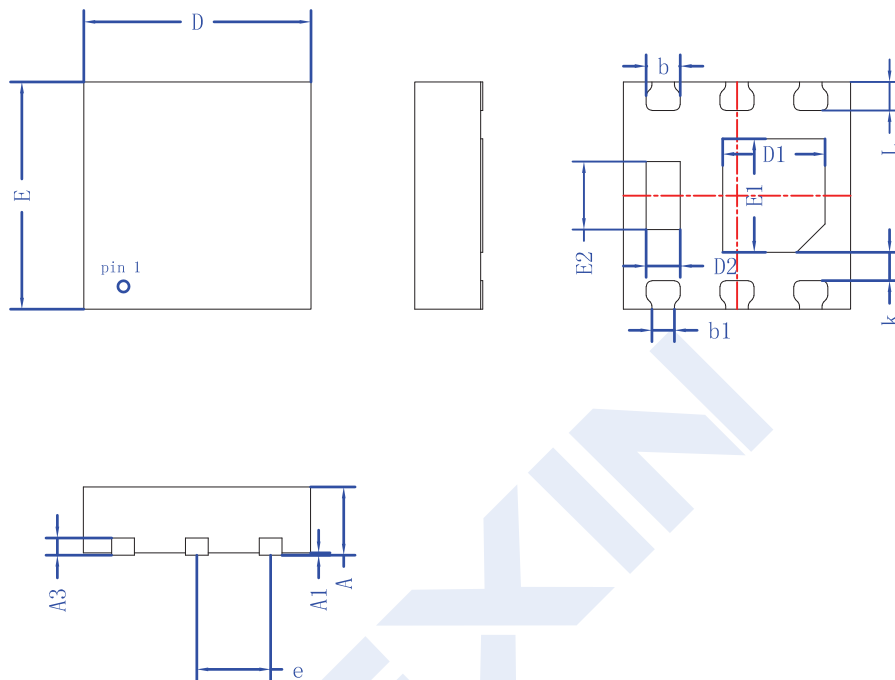
### 2KK5018DFN



## N-Channel MOSFET

## 2KK5018DFN

## ■ DFN2X2-6 Package Outline Dimensions



Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.50	0.55	0.65	0.022	0.024	0.026
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3	0.152 REF.			0.006REF.		
D	1.90	2.00	2.10	0.075	0.079	0.083
D1	0.80	0.90	1.00	0.031	0.035	0.039
D2	0.20	0.30	0.40	0.008	0.012	0.016
E	1.90	2.00	2.10	0.075	0.079	0.083
E1	0.90	1.00	1.10	0.035	0.039	0.043
E2	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
b1	0.15	0.20	0.25	0.006	0.008	0.010
e	0.65TYP.			0.026TYP.		
k	0.20MIN.			0.006MIN.		
L	0.20	0.25	0.30	0.008	0.010	0.012