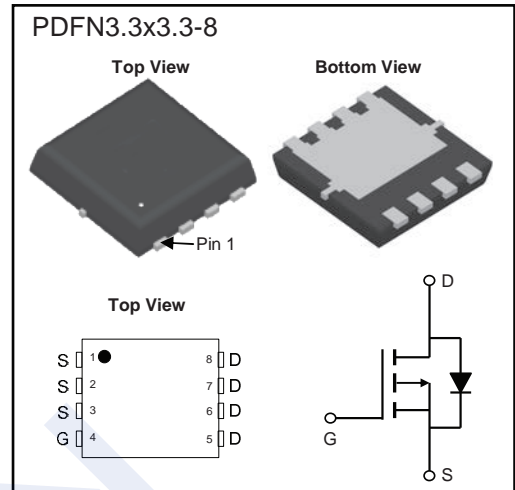


## P-Channel MOSFET

## 2KJ6048DFN

## ■ Features

- $V_{DS}$  -40 V
- $I_D$  (at  $V_{GS}=-10V$ ) -14 A
- $R_{DS(ON)}$  (at  $V_{GS} = -10V$ ) = 25 m $\Omega$  (typ.)
- $R_{DS(ON)}$  (at  $V_{GS} = -4.5V$ ) = 33 m $\Omega$  (typ.)

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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	-40	V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current (Note 1)	$I_D$	$T_A=25^\circ\text{C}$	-14	A
		$T_A=70^\circ\text{C}$	-12	
Pulsed Drain Current (Note 2)	$I_{DM}$	-50		
Power Dissipation (Note 1)	$P_D$	$T_A=25^\circ\text{C}$	3.5	W
		$T_A=70^\circ\text{C}$	2	
Thermal Resistance, Junction- to-Ambient (Note 1)	$R_{\theta JA}$	81	$^\circ\text{C}/\text{W}$	
Junction Temperature	$T_J$	150	$^\circ\text{C}$	
Storage Temperature Range	$T_{stg}$	-55 to 150		

Notes:

1. Surface mounted on 1.5" x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.
2. Pulse width limited by maximum junction temperature.

## P-Channel MOSFET

## 2KJ6048DFN

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	$I_D = -250\mu\text{A}$ , $V_{GS} = 0\text{V}$	-40			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	$V_{DS} = -32\text{V}$ , $V_{GS} = 0\text{V}$			-1	$\mu\text{A}$
		$V_{DS} = -32\text{V}$ , $V_{GS} = 0\text{V}$ , $T_J = 55^\circ\text{C}$			-25	
Gate-Body Leakage Current	I <sub>GSS</sub>	$V_{DS} = 0\text{V}$ , $V_{GS} = \pm 20\text{V}$			$\pm 100$	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	$V_{DS} = V_{GS}$ , $I_D = -250\mu\text{A}$	-1.1		-2.2	V
Static Drain-Source On-Resistance (Note 3)	R <sub>DS(on)</sub>	$V_{GS} = -10\text{V}$ , $I_D = -14\text{A}$		25	33	m $\Omega$
		$V_{GS} = -4.5\text{V}$ , $I_D = -10\text{A}$		33	42	
Diode Forward Voltage (Note 3)	V <sub>SD</sub>	$I_S = -5\text{A}$ , $V_{GS} = 0\text{V}$			-1.2	V
<b>DYNAMIC CHARACTERISTICS</b> (Note 4)						
Input Capacitance	C <sub>iss</sub>	$V_{GS} = 0\text{V}$ , $V_{DS} = -20\text{V}$ , $f = 1\text{MHz}$		2800		pF
Output Capacitance	C <sub>oss</sub>			300		
Reverse Transfer Capacitance	C <sub>rss</sub>			260		
Total Gate Charge	Q <sub>g</sub>	$V_{DS} = -20\text{V}$ , $V_{GS} = -10\text{V}$ , $I_D = -14\text{A}$		45		nC
Gate Source Charge	Q <sub>gs</sub>			8		
Gate Drain Charge	Q <sub>gd</sub>			8		
<b>SWITCHING CHARACTERISTICS</b> (Note 5)						
Turn-On Delay Time	t <sub>d(on)</sub>	$V_{DS} = -20\text{V}$ , $R_{GEN} = 3\Omega$ , $I_D = -14\text{A}$ , $V_{GS} = -10\text{V}$ ,		11		ns
Turn-On Rise Time	t <sub>r</sub>			9.4		
Turn-Off Delay Time	t <sub>d(off)</sub>			52		
Turn-Off Fall Time	t <sub>f</sub>			21		

Notes:

- Measured under pulsed conditions. Pulse width  $\leq 300\mu\text{s}$ ; duty cycle  $\leq 2\%$ .
- For design aid only, not subject to production testing.
- Switching characteristics are independent of operating junction temperatures.

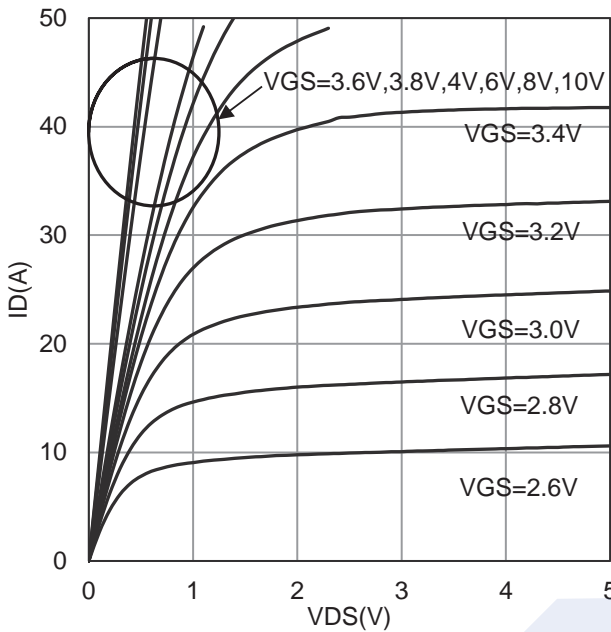
## ■ Marking

Marking	J6048 KC****
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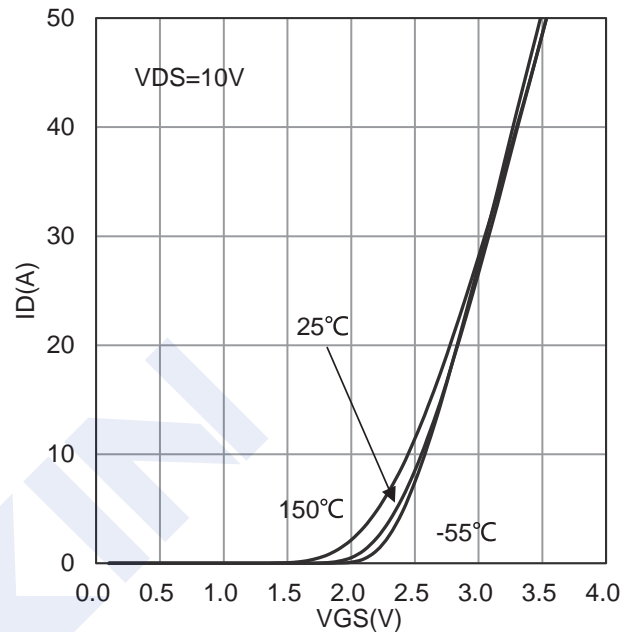
### P-Channel MOSFET

### 2KJ6048DFN

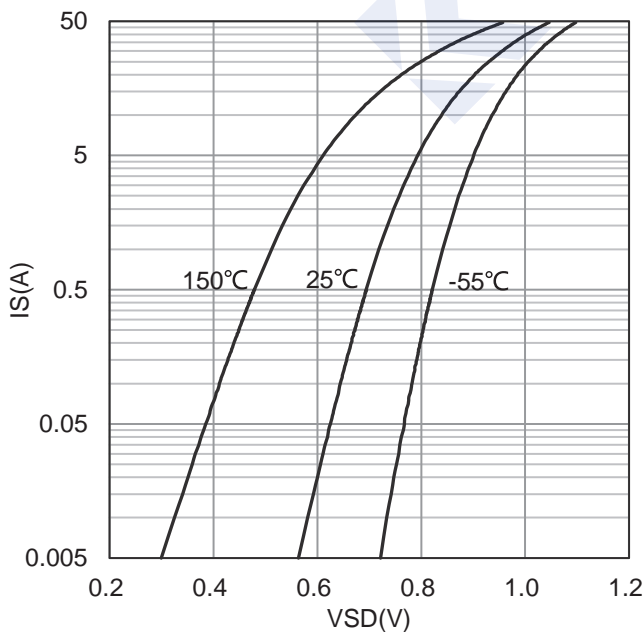
■ Typical Characteristics



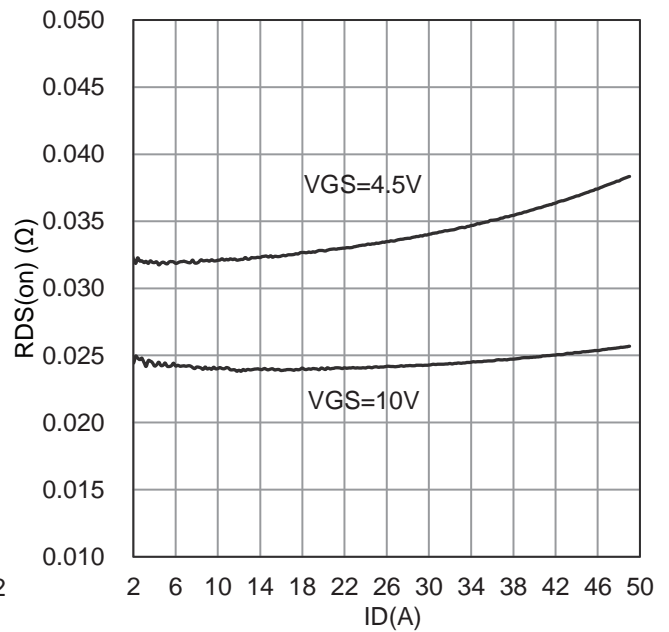
ID vs. VDS



ID vs. VGS



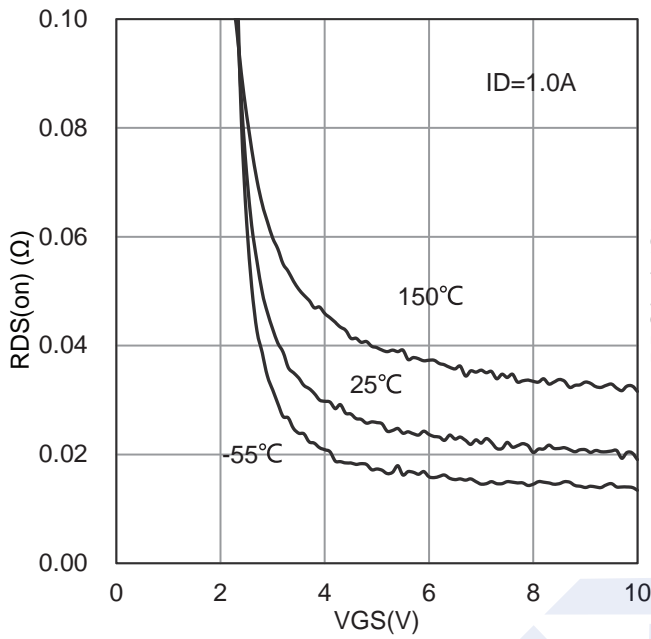
IS vs. VSD



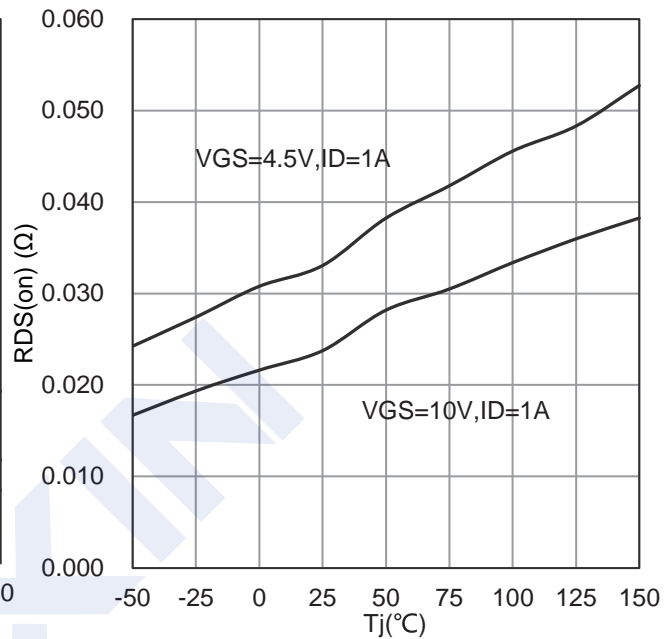
RDS(on) vs. ID

P-Channel MOSFET

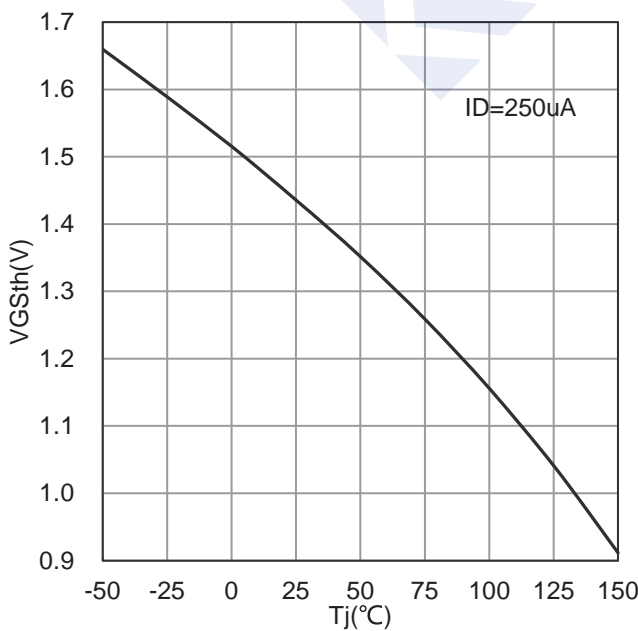
2KJ6048DFN



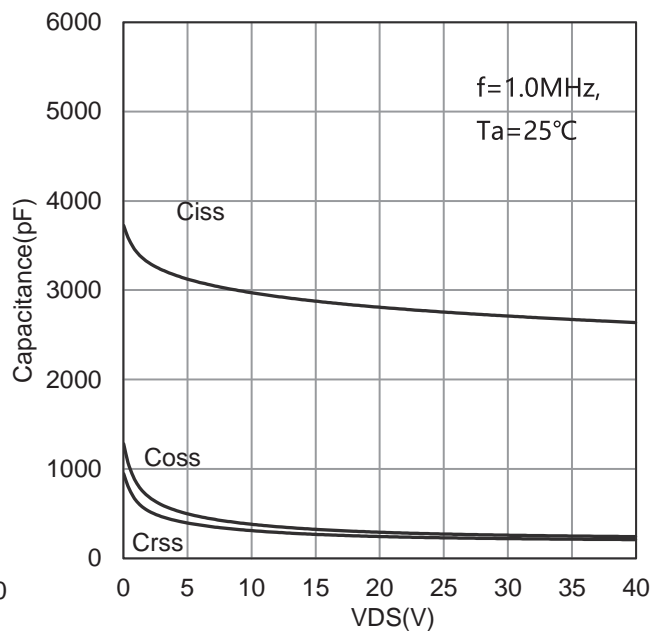
RDS(on) vs. VGS



RDS(on) vs. Tj



VGsth vs. Tj

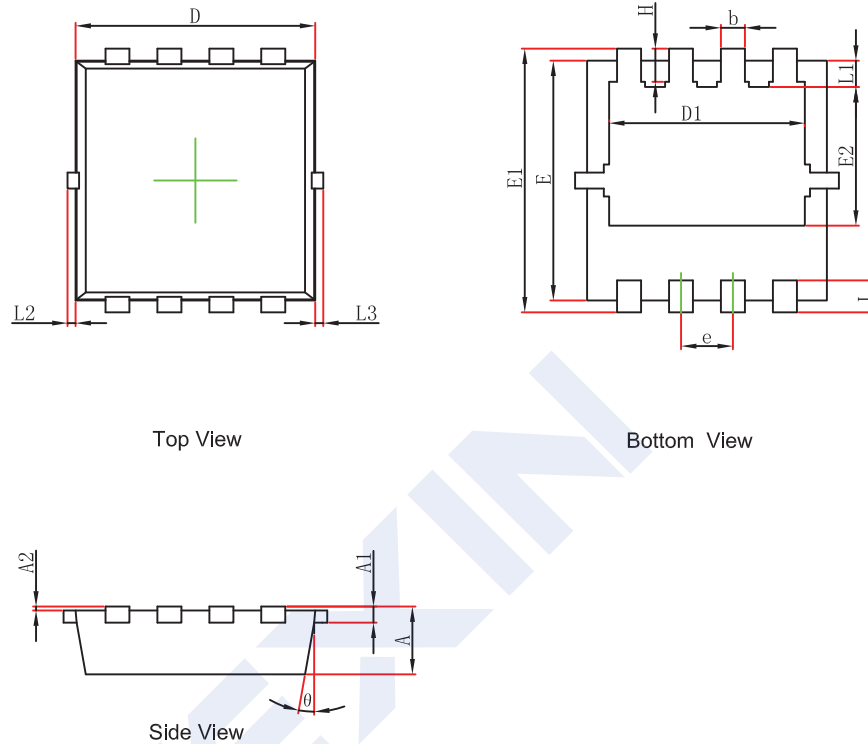


Capacitance

## P-Channel MOSFET

## 2KJ6048DFN

## ■ PDFN3.3x3.3-8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
$\theta$	9°	13°	9°	13°