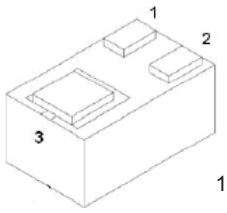
N-Channel MOSFET

2KK6009DFN

DFN1006-3



1.GATE
2.SOURCE
3.DRAIN

■ Features

- $V_{DS\ (V)}$ = 20 V
- I_D = 0.75 A
- $R_{DS(ON)}$ (at V_{GS} = 4.5 V) <380 mΩ
- $R_{DS(ON)}$ (at V_{GS} = 2.5 V) <450 mΩ
- $R_{DS(ON)}$ (at V_{GS} = 1.8 V) <800 mΩ

■ Absolute Maximum Ratings (T_a = 25℃ unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	
Continuous Drain Current (Note 1)	I_D	0.75	A
Pulsed Drain Current (tp=10μs)	I_{DM}	1.8	
Power Dissipation (Note 1)	P_D	100	mW
Thermal Resistance, Junction-to-Ambient (Note 1)	$R_{\theta JA}$	1250	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note 1.Surface mounted on FR4 board using the minimum recommended pad size.

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■ Electrical Characteristics (T_a = 25℃ unless othewise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D = 250 μA, V_{GS} = 0V	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20 V, V_{GS} = 0 V			1	μA
Gate to Source Leakage Current	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±10 V			±20	
Gate to Source Threshold Voltage (Note 2)	$V_{GS(th)}$	V_{DS} = V_{GS} , I_D = 250μA	0.35		1.1	V
Static Drain-Source On-Resistance (Note 2)	$R_{DS(ON)}$	V_{GS} = 4.5 V, I_D = 0.65 A			380	mΩ
		V_{GS} = 2.5 V, I_D = 0.55 A			450	
		V_{GS} = 1.8 V, I_D = 0.45 A			800	
Forward Transconductance (Note 2)	g_{FS}	V_{DS} = 10 V, I_D = 0.8 A		1.6		S
Diode Forward Voltage	V_{SD}	V_{GS} = 0 V, I_S = 0.15 A			1.2	V
DYNAMIC PARAMETERS (Note 4)						
Input Capacitance	C_{iss}	V_{GS} = 0 V, V_{DS} = 16 V, f = 1 MHz		79	120	pF
Output Capacitance	C_{oss}			13	20	
Reverse Transfer Capacitance	C_{rss}			9	15	
SWITCHING PARAMETERS (Note 4)						
Turn-On DelayTime (Note 3)	$t_{d(on)}$	V_{GS} = 10V, V_{DD} = 4.5 V, I_D = 0.5A, R_{GEN} = 10 Ω		6.7		ns
Turn-On Rise Time (Note 3)	t_r			4.8		
Turn-Off DelayTime (Note 3)	$t_{d(off)}$			17.3		
Turn-Off Fall Time (Note 3)	t_f			7.4		

Notes:

2. Pulse Test : Pulse width=300 μs, duty cycle≤2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Graranted by design，not subject to producting.

■ Marking

Marking	A

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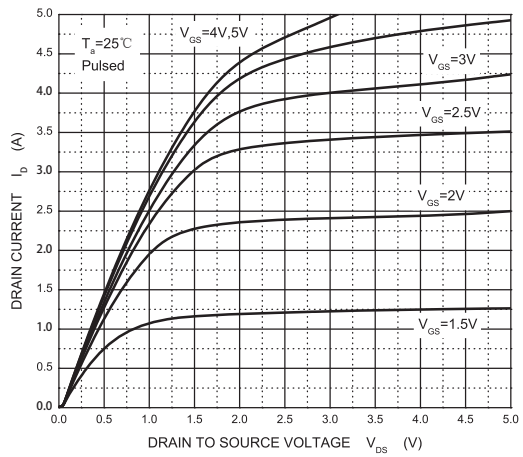
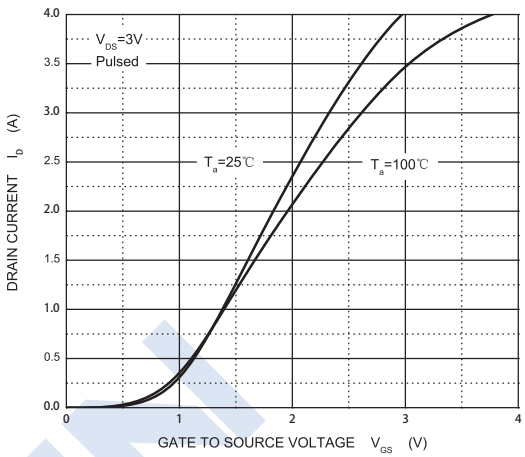
■ Typical Characterisitics

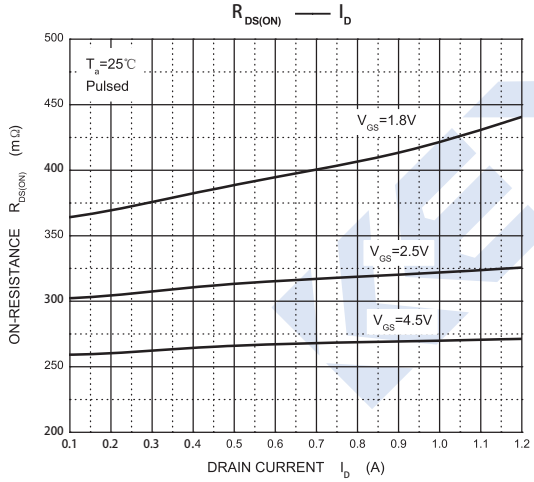
Output Characteristics



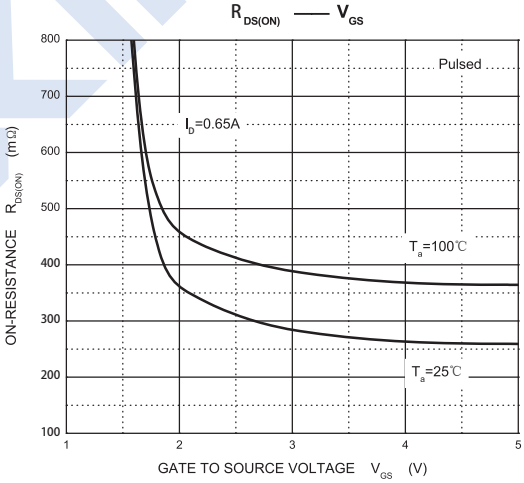
Transfer Characteristics



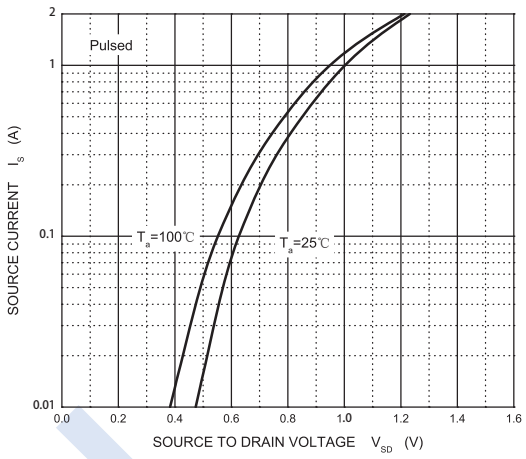
$R_{DS(ON)}$ —— I_D



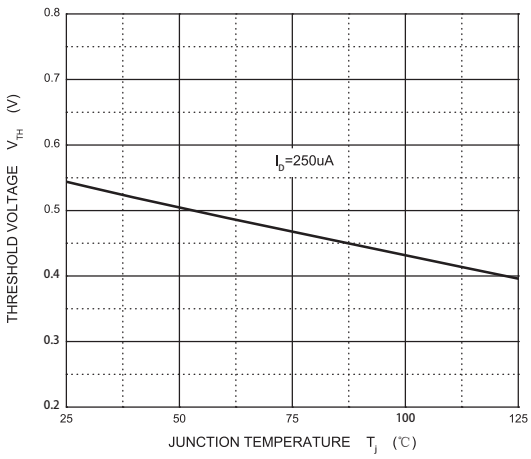
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}



Threshold Voltage



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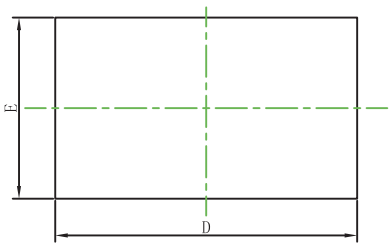
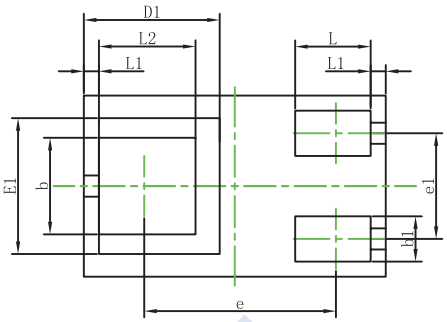
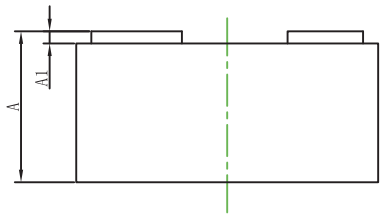
■ DFN1006-3 Package Outline Dimensions



TOP VIEW



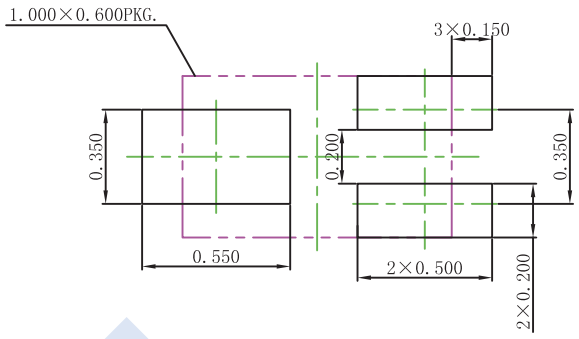
BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.100	0.000	0.004
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
D1	0.450REF.		0.018REF.	
E1	0.450REF.		0.018REF.	
b	0.270	0.370	0.011	0.015
b1	0.100	0.200	0.004	0.008
e	0.635REF.		0.025REF.	
e1	0.300	0.400	0.012	0.016
L	0.200	0.300	0.008	0.012
L1	0.050REF.		0.002REF.	
L2	0.270	0.370	0.011	0.015

■ DFN1006-3 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.050mm.
3.The pad layout is for reference purposes only.