

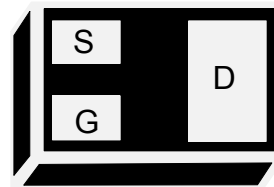
KY2002KNC

20V N-Channel Mosfet

FEATURES

- $R_{DS(ON)} \leq 0.38\Omega$ (0.25 Ω Typ.)
@ $V_{GS}=4.5V$
- $R_{DS(ON)} \leq 0.45\Omega$ (0.35 Ω Typ.)
@ $V_{GS}=2.5V$
- $R_{DS(ON)} \leq 0.8\Omega$ (0.4 Ω Typ.)
@ $V_{GS}=1.8V$

DFN1006-3L

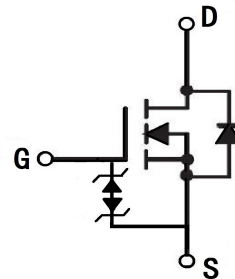


Bottom View

APPLICATIONS

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

N-CHANNEL MOSFET



MARKING

Top View



02K:Device Code

MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	20	V
V_{GSS}	Gate-Source Voltage	± 10	V
I_D	Continuous Drain Current	0.75	A
I_{DM}	Pulsed Drain Current ^{note1}	1.8	A
P_D	Power Dissipation	0.15	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	$^{\circ}C/W$
T_J	Junction Temperature	150	$^{\circ}C$
T_{STG}	Storage Temperature	-55~ +150	$^{\circ}C$

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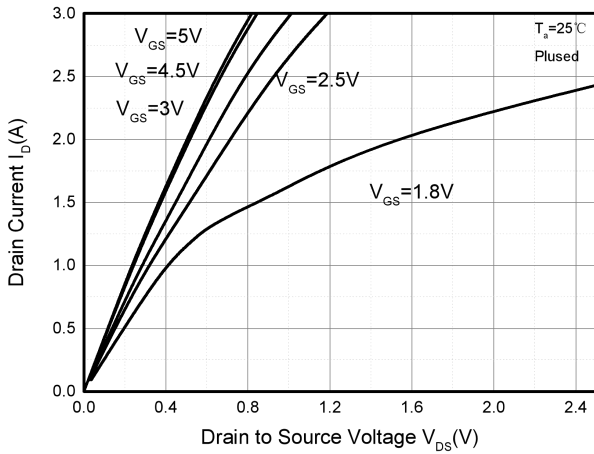
MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 16V,$ $V_{GS} = 0V, T_J = 25^\circ C$	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	$V_{GS} = \pm 10V, V_{DS} = 0V$	-	-	± 10	μA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.3	0.65	1	V
$R_{DS(on)}$	Static Drain-Source On-Resistance <small>note3</small>	$V_{GS} = 4.5V, I_D = 0.5A$	-	0.25	0.38	Ω
		$V_{GS} = 2.5V, I_D = 0.4A$	-	0.35	0.45	
		$V_{GS} = 1.8V, I_D = 0.1A$	-	0.4	0.8	
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS} = 16V, V_{GS} = 0V,$ $f = 1.0MHz$	-	79	120	pF
C_{oss}	Output Capacitance		-	13	20	pF
C_{rss}	Reverse Transfer Capacitance		-	9	15	pF
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	$V_{GS} = 4.5V, V_{DS} = 10V,$ $R_G = 10\Omega, I_D = 500mA$	-	6.7	-	ns
t_r	Turn-On Rise Time		-	4.8	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	17.3	-	ns
t_f	Turn-Off Fall Time		-	7.4	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS} = 0V, I_{SD} = 0.5A,$ $T_J = 25^\circ C$	-	0.7	1.3	V

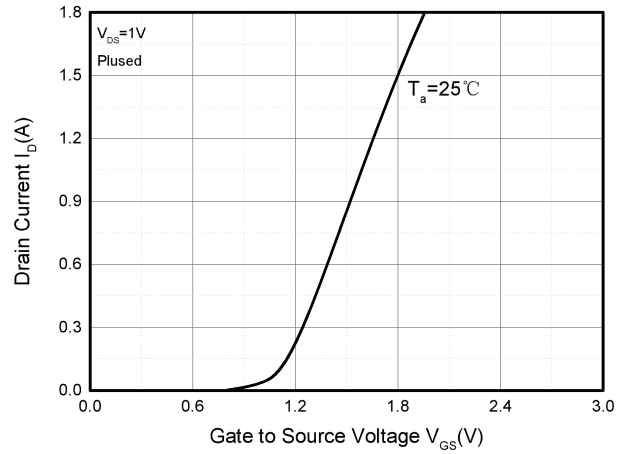
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TYPICAL PERFORMANCE CHARACTERISTICS

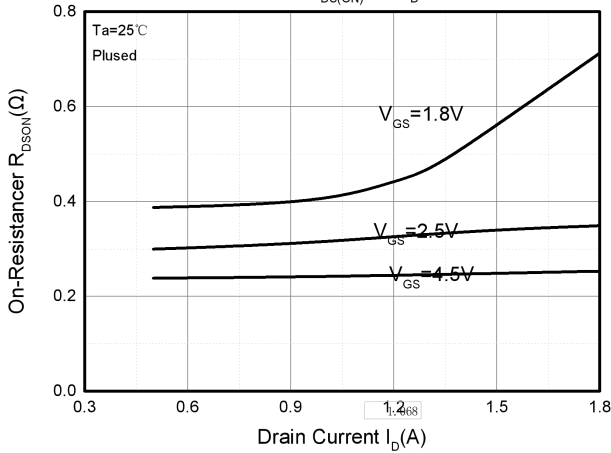
Output Characteristics



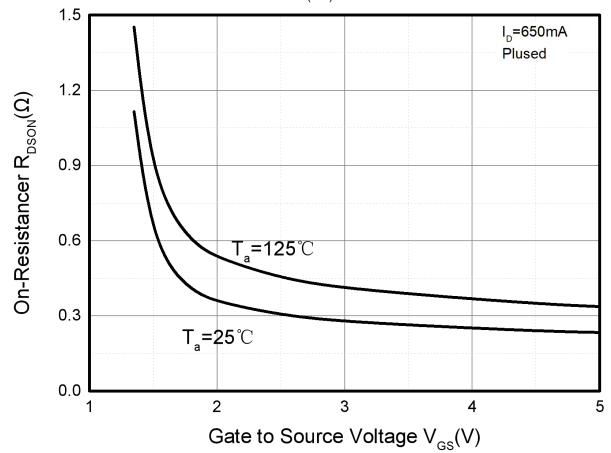
Transfer Characteristics



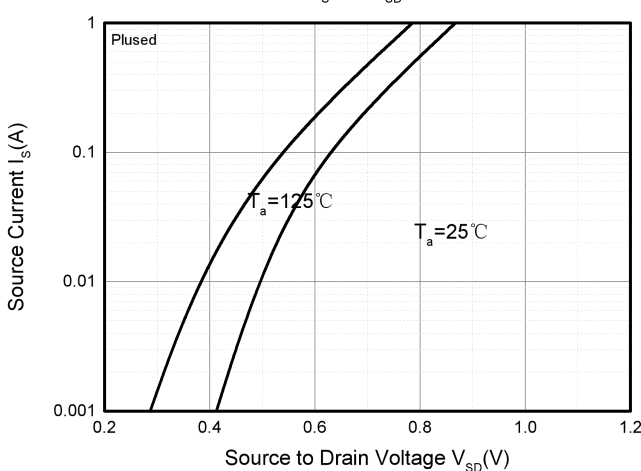
$R_{DS(ON)} - I_D$



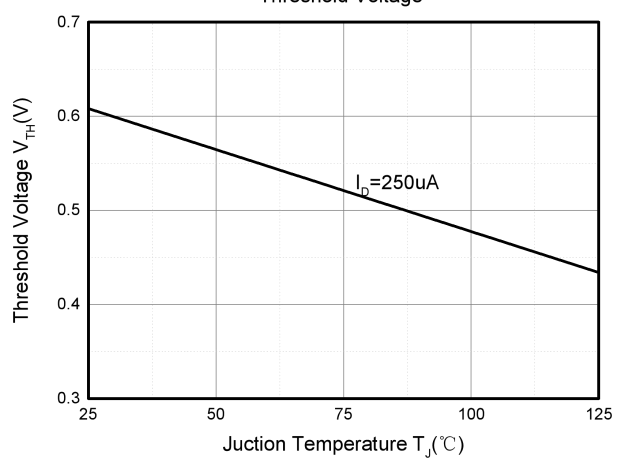
$R_{DS(ON)} - V_{GS}$



$I_S - V_{SD}$

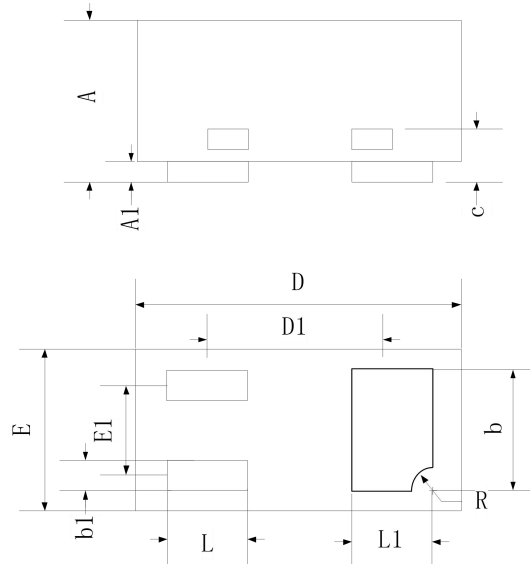


Threshold Voltage



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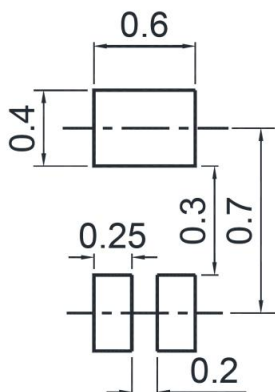
DFN1006-3L PACKAGE OUTLINE DRAWING



Symbol	Min.	Max.
A	0.46	0.51
A1	0	0.05
b	0.45	0.55
b1	0.1	0.2
c	0.08	0.18
D	0.95	1.05
D1	0.65	
E	0.55	0.65
E1	0.325	
L	0.2	0.3
L1	0.2	0.3
R	0.05	0.15

Unit: mm

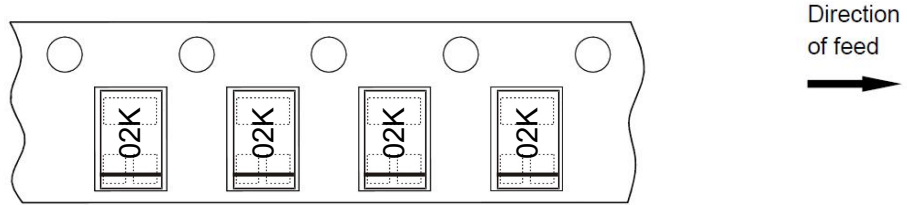
Recommended PCB Layout (Unit: mm)



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DFN1006-3L 编带和蓝盘

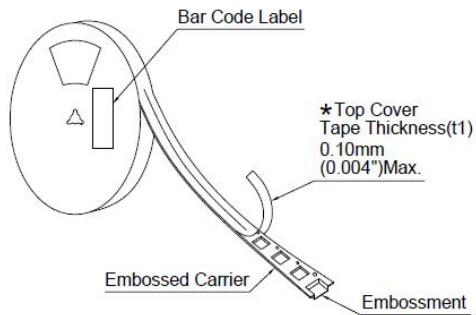
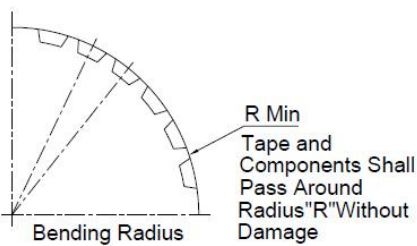
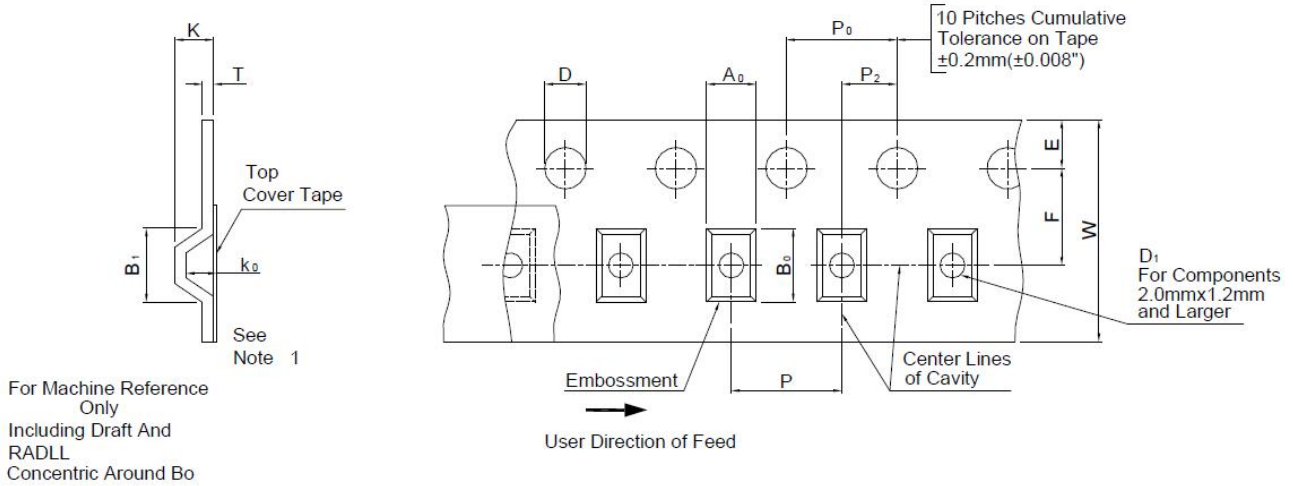
DFN1006-3



EMBOSSED TAPE AND REEL ORDERING INFORMATION

Package	Tape Width (mm)	Pitch		Reel Size		Devices Per Reel and Minimum Order Quantity
		mm	inch	mm	inch	
DFN1006-3	8	4 ± 0.1	0.157 ± 0.004	178	7	5,000 10,000
		2 ± 0.1	0.079 ± 0.004			

MSL: 1



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