

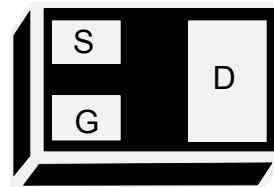
# KY2002KNC

20V N-Channel Mosfet

## FEATURES

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

DFN1006-3L

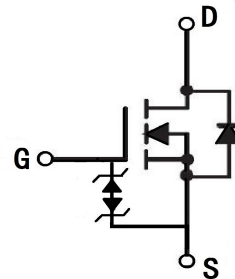


Bottom View

## 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	$\pm 10$	V
$I_D$	Continuous Drain Current	0.75	A
$I_{DM}$	Pulsed Drain Current <sup>note1</sup>	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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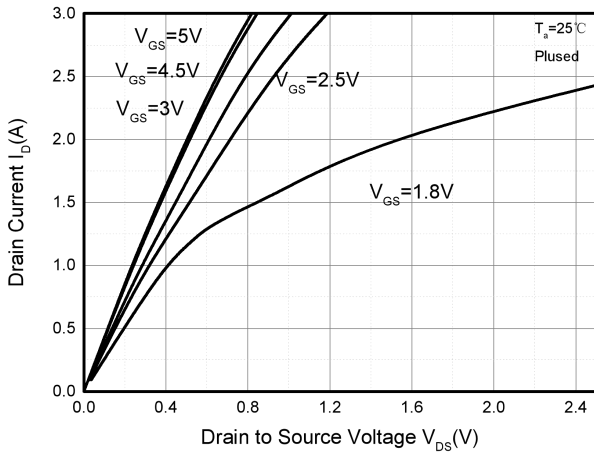
## MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristic</b>						
$V_{(BR)DSS}$	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	$\mu A$
$I_{GSS}$	Gate to Body Leakage Current	$V_{GS} = \pm 10V, V_{DS} = 0V$	-	-	$\pm 10$	$\mu A$
<b>On Characteristics</b>						
$V_{GS(th)}$	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	$\Omega$
		$V_{GS} = 2.5V, I_D = 0.4A$	-	0.35	0.45	
		$V_{GS} = 1.8V, I_D = 0.1A$	-	0.4	0.8	
<b>Dynamic Characteristics</b>						
$C_{iss}$	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
<b>Switching Characteristics</b>						
$t_{d(on)}$	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
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
$V_{SD}$	Drain to Source Diode Forward Voltage	$V_{GS} = 0V, I_{SD} = 0.5A,$ $T_J = 25^\circ C$	-	0.7	1.3	V

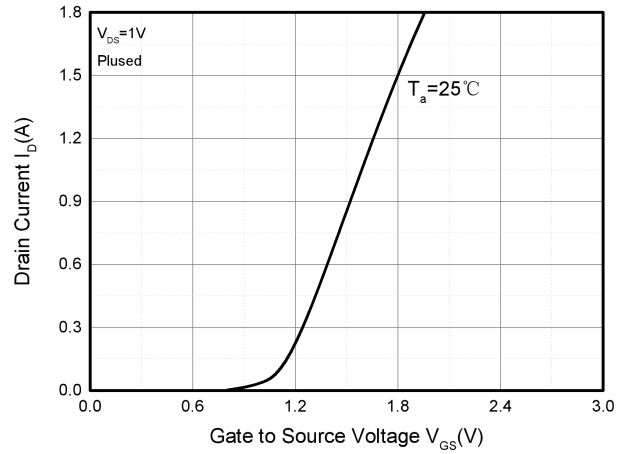
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## TYPICAL PERFORMANCE CHARACTERISTICS

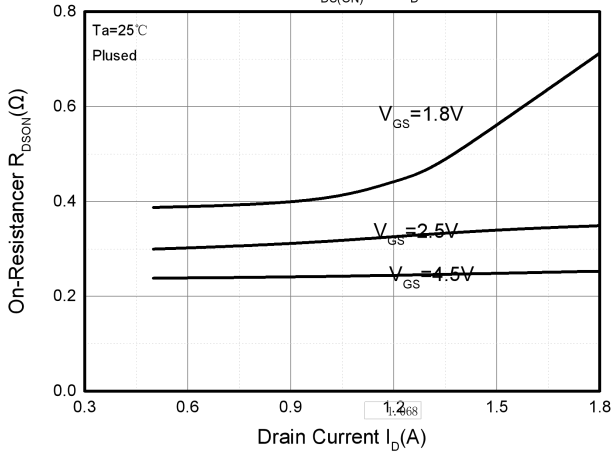
Output Characteristics



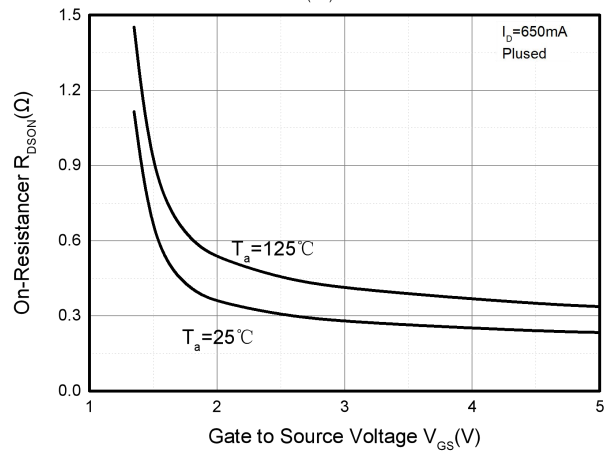
Transfer Characteristics



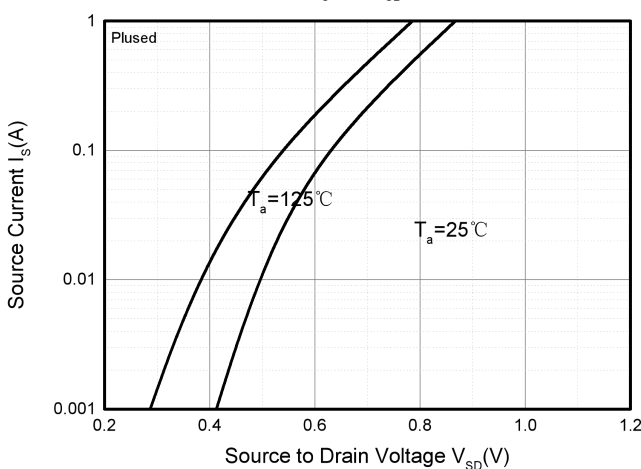
$R_{DS(ON)} - I_D$



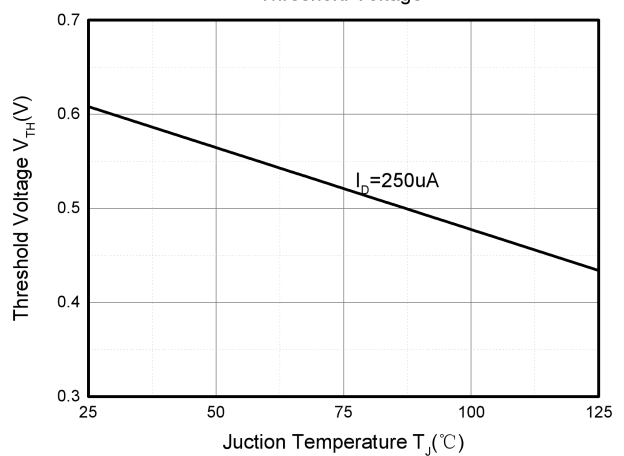
$R_{DS(ON)} - V_{GS}$



$I_S - V_{SD}$

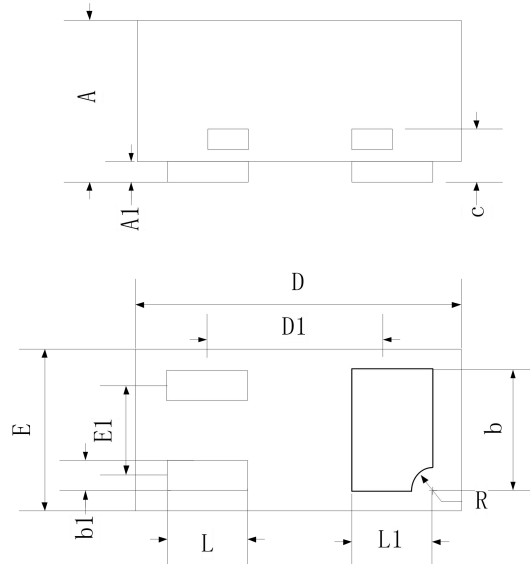


Threshold Voltage



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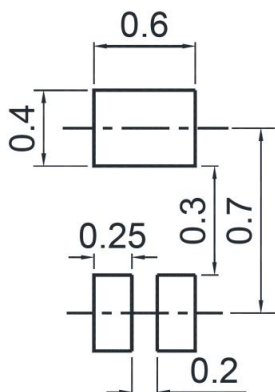
## DFN1006-3L PACKAGE OUTLINE DRAWING



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

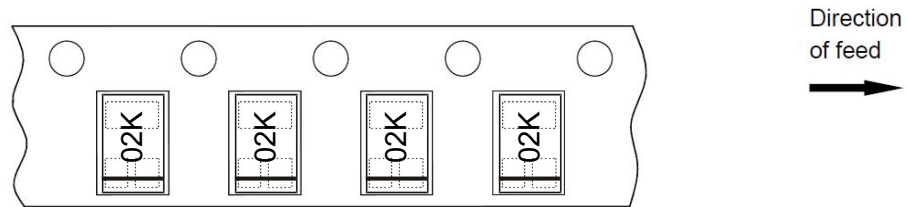
### Recommended PCB Layout (Unit: mm)



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## DFN1006-3L 编带和蓝盘

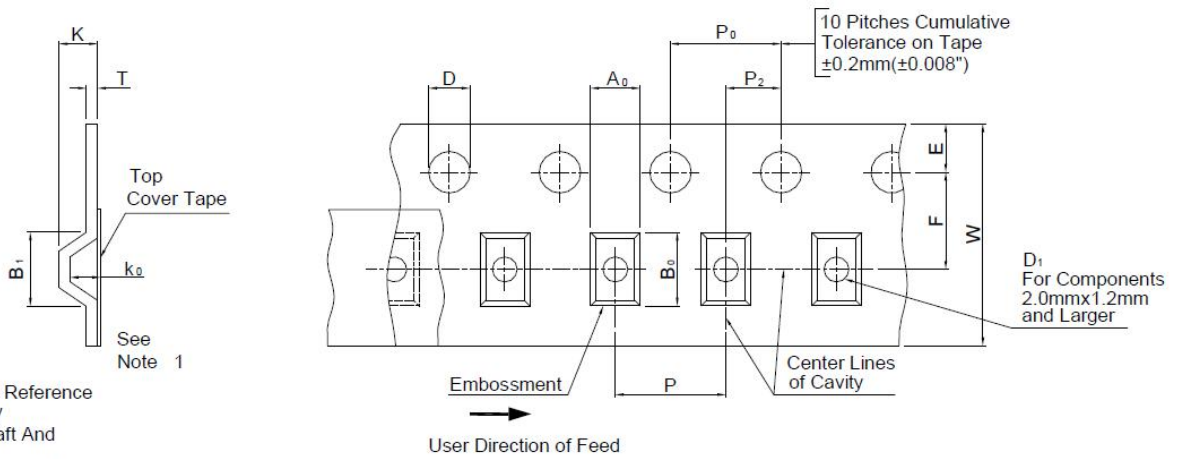
DFN1006-3



### 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



For Machine Reference Only  
Including Draft And  
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