

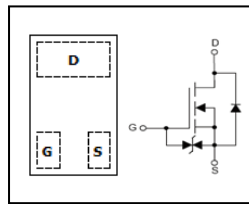
DATA SHEET (Preliminary)

2N7002KD2

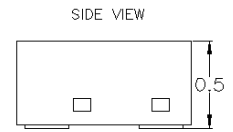
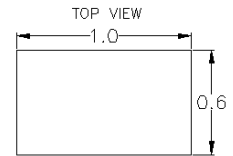
- ◇ N-Channel Switch with Low $R_{DS(on)}$
- ◇ Surface Mount Package
- ◇ ESD Protection
- ◇ RoHS compliant / Green EMC

Device Marking Code	
2N7002KD2	RK

Circuit Diagram



DFN1006-3L Unit:mm



Maximum Ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D^*	Drain Current-Continuous	0.34	A
I_{DM}^*	Pulsed Drain Current ($V_{GS}=10\text{V}$, $t_p=10\mu\text{s}$)	800	mA
P_D	Power Dissipation	0.35	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	357	$^\circ\text{C/W}$
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	$-55 \sim +150$	$^\circ\text{C}$

* Surface Mounted on 1 in² pad area, $t \leq 10$ sec

Electrical Characteristics @ 25° C Unless Otherwise Specified

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	60			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.5	V
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$ $V_{DS}=0V, V_{GS}=\pm 5V$			± 10 ± 100	μA nA
I_{DSS}	Drain Leakage Current	$V_{DS}=60V, V_{GS}=0V$			1	μA
$R_{DS(ON)}$	On-State Resistance	$V_{GS}=10V, I_D=500mA$, $V_{GS}=4.5V, I_D=200mA$			3.0 4.0	Ω
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=200mA$			1.3	V
gfs	Forward Transconductance	$V_{DS}=10V, I_D=200mA$	80			mS

Dynamic Characteristics

C_{iss}	Input Capacitance	$V_{GS}=0V, V_{DS}=25V, f=1MHz$		28		pF
C_{oss}	Output Capacitance			1.6		
C_{rss}	Reverse Transfer Capacitance			1.1		

Switching Characteristics

$t_{d(on)}$	Turn-on Delay Time	$V_{DS}=30V, R_L=150\Omega, R_G=3.9\Omega$ $V_{GEN}=10V, I_{DS}=200mA$		3.8		nS
t_r	Turn-on Rise Time			3.5		
$t_{d(off)}$	Turn-off Delay Time			12.4		
t_f	Turn-off Fall Time			44.4		

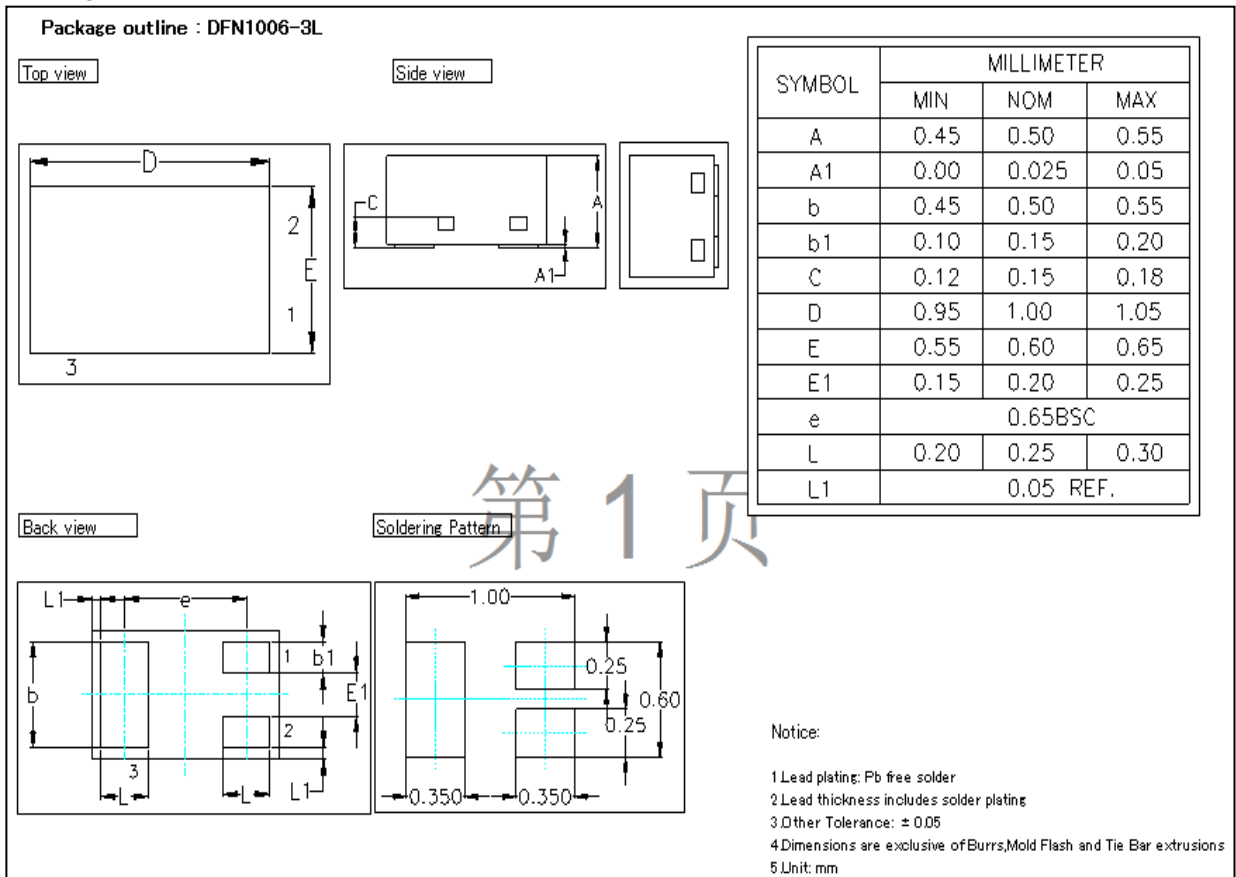
Gate Charge Characteristics

Q_g	Total Gate Charge	$V_{GS}=10V, I_{DS}=500mA, V_{DS}=30V$		1.2		nC
Q_{gs}	Gate-Source Charge			0.5		
Q_{gd}	Gate-Drain Charge			0.1		

Ordering Information

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
2N7002KD2	DFN1006-3L	Tape & Reel 10000pcs /7" Reel	8mm	4mm	Conductive	

Package Dimensions



NOTICE

POPPULA'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS COMPONENTS IN ANY LIFE SUPPORT DEVICES OR SYSTEMS.

POPPULA reserve the right to make modifications, enhancements improvements corrections or other changes without further notice to any product herein. POPPULA does not assume any liability arising out of the application or use of any product described herein.