

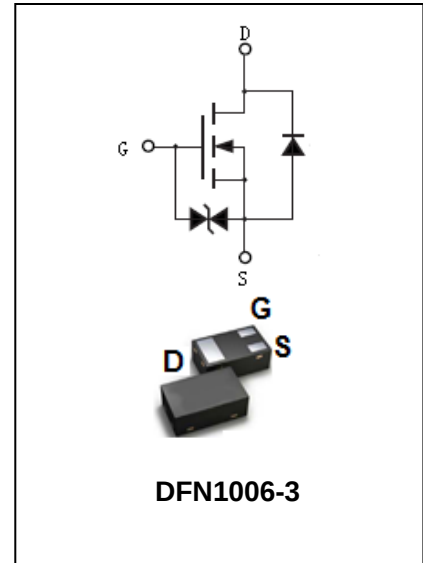
N-Channel Enhancement Mode Field Effect Transistor

BL2231L

FEATURES

- Extremely low threshold voltage.
- ESD Protected.

HF



ORDERING INFORMATION

Type No.	Marking	Package Code
BL2231L	K21	DFN1006-3

MAXIMUM RATING @ Ta=25°C unless otherwise specified (Note 1)

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	20	V
V_{GSS}	Gate -Source voltage	± 10	V
I_D	Drain current (Continuous)	800	mA
I_{DM}	Drain Current (Pulsed) (Note 1)	1000	mA
P_D	Maximum Drain Current-Continue	450	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	279	°C/W
T_J	Operating Junction Temperature	+150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	20	-	-	V
Gate-body Leakage Forward Reverse	I _{GSS}	V _{DS} =0V, V _{GS} =8V V _{DS} =0V, V _{GS} =-8V	- -	- -	10 -10	uA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} =0V	-	-	1	μA
ON CHARACTERISTICS ^(Note 2)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.3	0.65	1.0	V
Static drain-Source on-resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =0.5A	-	280	400	mΩ
		V _{GS} =2.5V, I _D =0.2A	-	350	650	
		V _{GS} =1.8V, I _D =0.1A	-	400	800	
		V _{GS} =1.5V, I _D =0.05A	-	500	1200	
		V _{GS} =1.2V, I _D =0.02A	-	700	3000	
DYNAMIC CHARACTERISTICS						
Total Gate Charge	Qg	V _{DS} = 10V	-	1.4	-	nC
Gate-Source Charge	Qgs	I _D = 0.5A	-	0.22	-	nC
Gate-Drain Charge	Qgd	V _{GS} = 4.5V,	-	0.21	-	nC
Input capacitance	C _{ISS}	V _{DS} =10V, V _{GS} =0V, f=1.0MHz	-	67	-	pF
Output capacitance	C _{OSS}		-	19	-	
Reverse transfer capacitance	C _{RSS}		-	6	-	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	t _{D(ON)}	V _{DD} = 10V, I _D = 150mA V _{GEN} = 4V R _{GEN} = 10Ω	-	2.8	-	ns
Turn-On Rise Time	t _r		-	20	-	
Turn-Off Delay Time	t _{D(OFF)}		-	23	-	
Turn-Off Fall Time	t _f		-	23	-	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source diode forward voltage	V _{SD}	V _{GS} =0V, I _S =500mA	-	0.87	1.3	V

Notes:

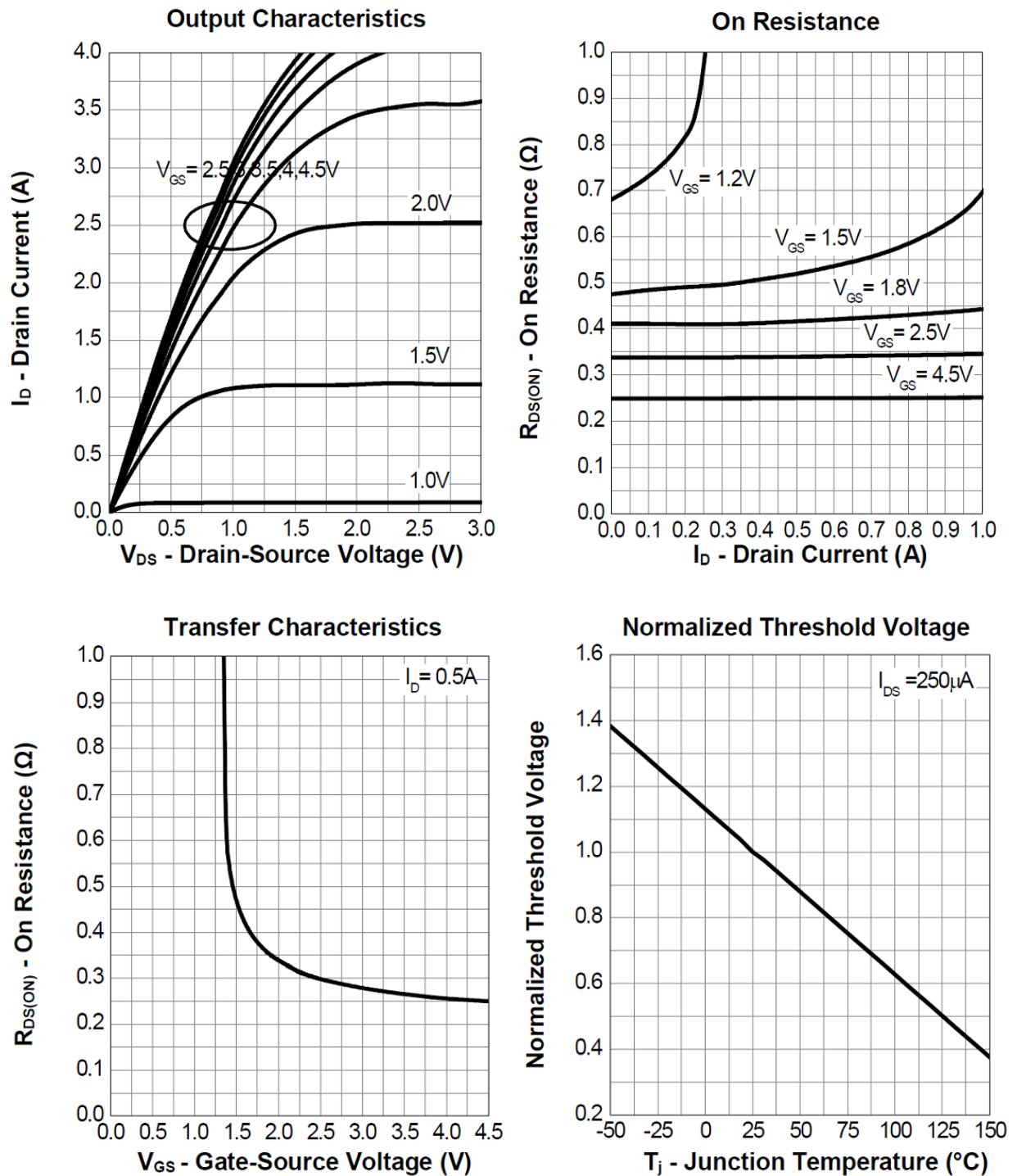
1.Pulse width limited by maximum junction temperature.

2.Pulse test: Pulse width $\leq 300 \mu s$, Duty cycle $\leq 2\%$

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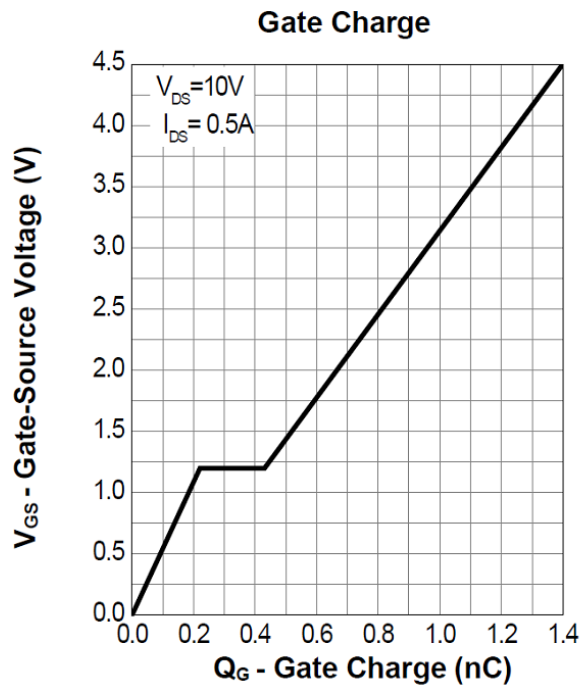
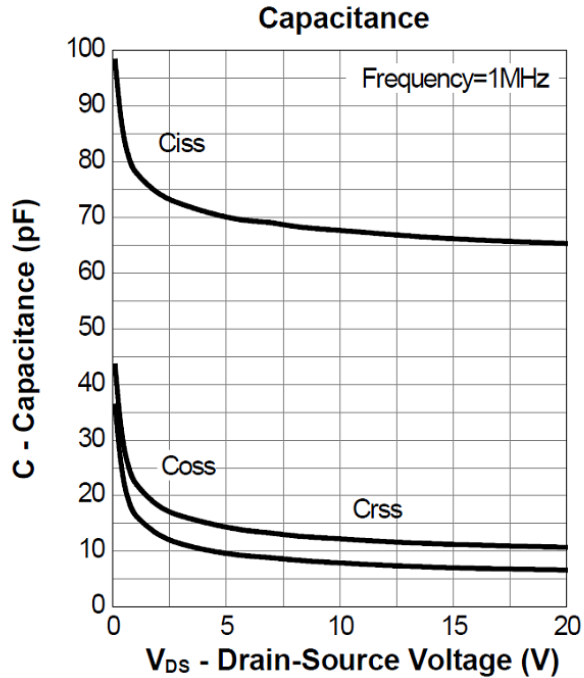
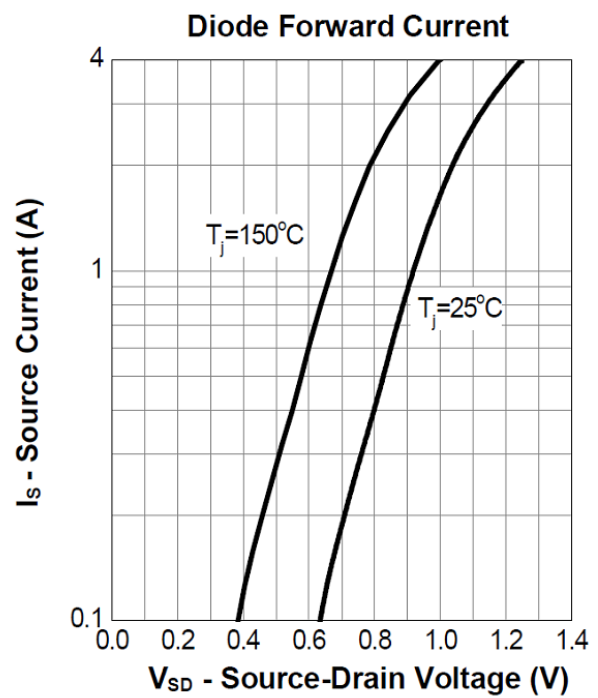
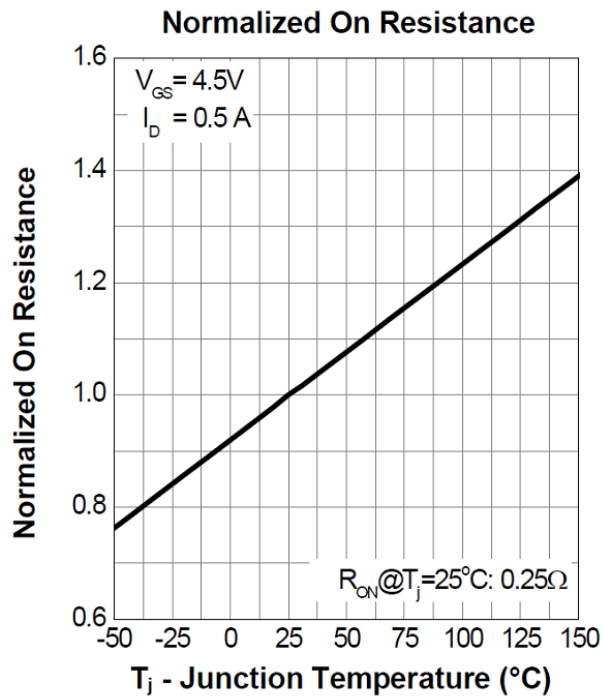
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TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified



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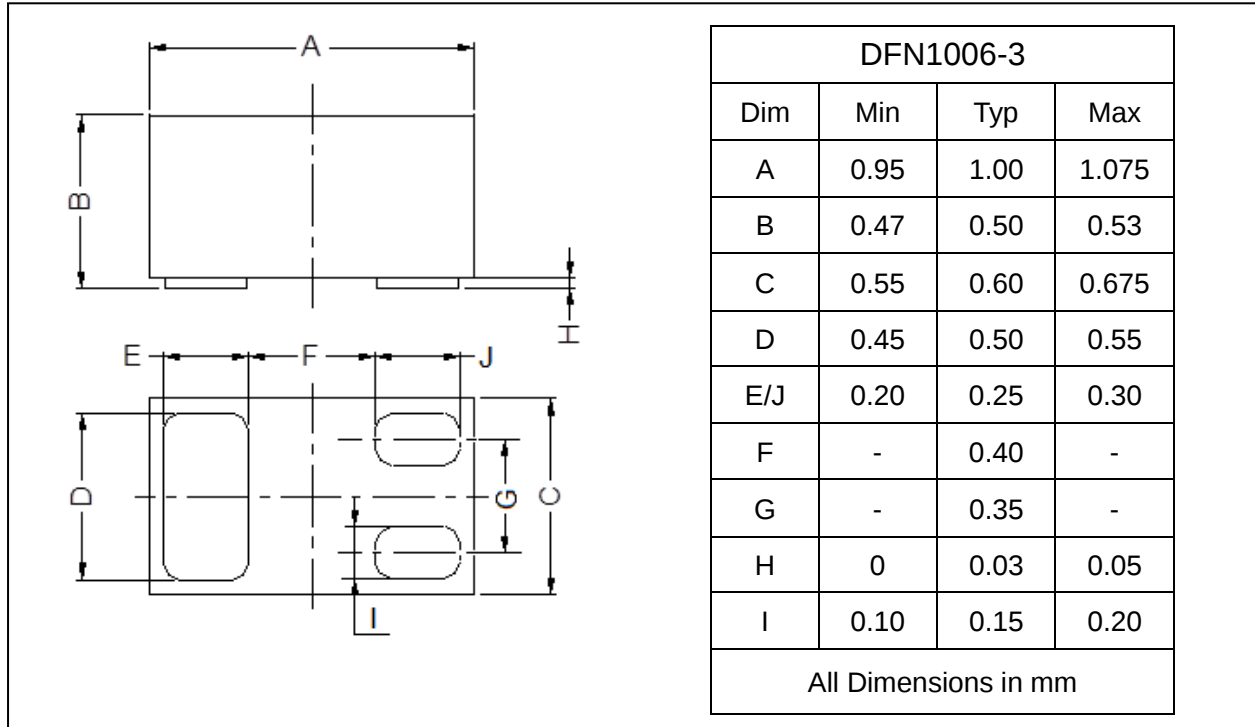
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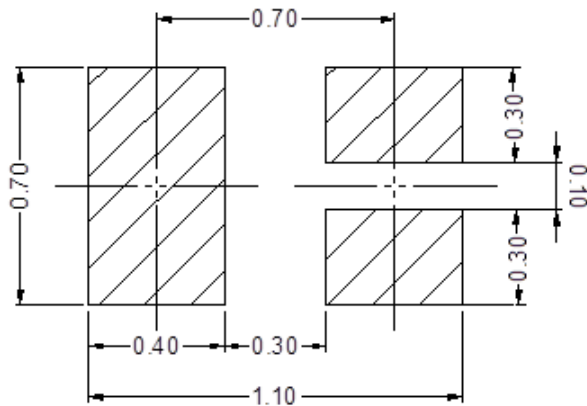
PACKAGE OUTLINE

Plastic surface mounted package

DFN1006-3



SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
BL2231L	DFN1006-3	10000 pcs / Tape & Reel