

Product Summary

$V_{(BR)DSS}$	$R_{DS(ON) \max}$	I_D
20V	$<250m\Omega @V_{GS}=4.5V$	1.1A
	$<400m\Omega @V_{GS}=2.5V$	

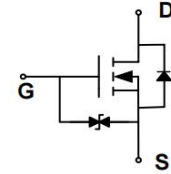
Package & Internal Circuit



DFN1006-3L

Description and Applications

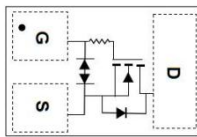
- Trench LV MOSFET Technology
- ESD Protected
- RoHS Compliant & Halogen-Free



Ordering Information

Part Number	Package Type	Package Qty
CFN02KN20	DFN1006-3L	10,000/Tape & Reel

Marking Information



02K--Part Number

Green product

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

Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 10	V
Drain Current - Continuous	$T_c=25^\circ\text{C}$	I_D	1.1	A
Pulsed Drain Current		I_{DM}	4.4	A
Power Dissipation	$T_c=25^\circ\text{C}$	P_D	500	mW
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Units
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$		150	$^\circ\text{C/W}$

Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Static Parameters						
BV _{DSS}	Drain-Source Breakdown Voltage	I _D = 250μA, V _{GS} =0V	20			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V			1	μA
I _{GSS}	Gate-Body leakage current	V _{DS} =0V, V _{GS} = ±10V			±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.35	0.75	1.1	V
R _{DS(on)}	Drain-Source on-Resistance	V _{GS} =4.5V, I _D =0.65A		150	250	mΩ
		V _{GS} =2.5V, I _D =0.55A		200	400	mΩ
		V _{GS} =1.8V, I _D =0.45A		300		mΩ
V _{SD}	Body Diode Forward Voltage	I _S = 0.5A,V _{GS} = 0V			1.2	V
I _S	Continuous Source Current				1.1	A
Dynamic parameters						
C _{iss}	Input Capacitance	V _{GS} =0V V _{DS} =10V f=1.0MHz		58		pF
C _{oss}	Output Capacitance			14.5		pF
C _{rss}	Reverse Transfer Capacitance			9		pF
Switching Parameters						
Q _g	Total Gate Charge	V _{GS} =4.5V V _{DS} =10V I _D =0.65A		1.1		nC
Q _{gs}	Gate Source Charge			0.27		nC
Q _{gd}	Gate Drain Charge			0.25		nC
t _{D(on)}	Turn-On Delay Time	V _{DD} =10V V _{GS} =4.5V I _D =0.65A R _G =3Ω		3.3		ns
t _r	Turn-On Rise Time			1.1		ns
t _{D(off)}	Turn-Off Delay Time			16.2		ns
t _f	Turn-Off Fall Time			8.4		ns

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

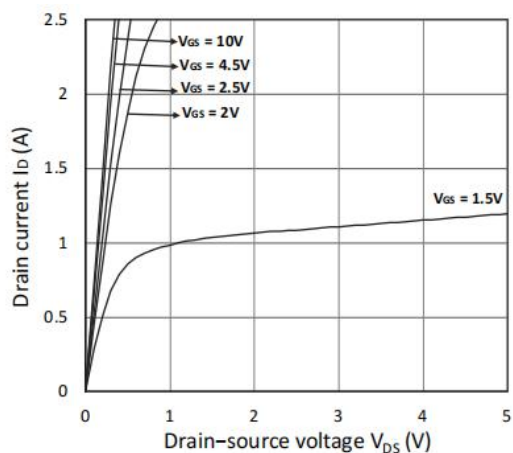


Figure 1: Output Characteristics

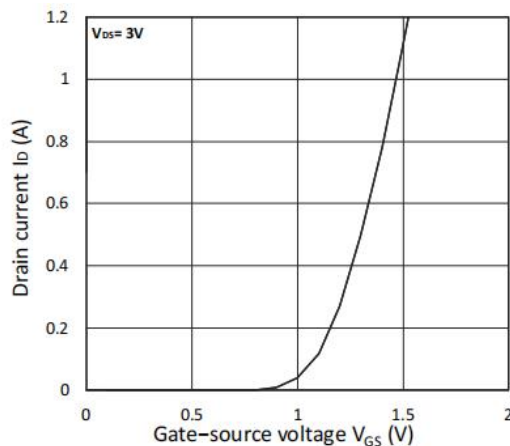


Figure 2: Transfer Characteristics

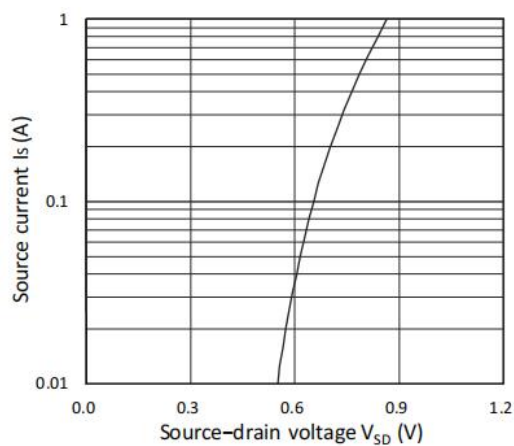


Figure 3: Forward Characteristics of Reverse

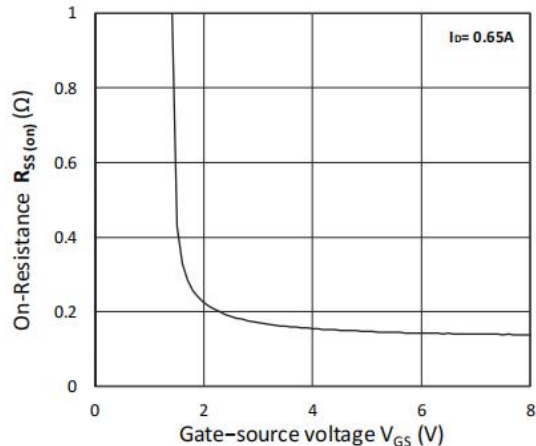


Figure 4: $R_{DS(ON)}$ vs. V_{GS}

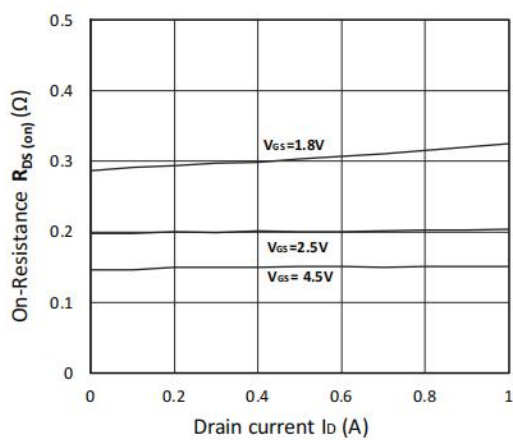


Figure 5: $R_{DS(ON)}$ vs. I_D

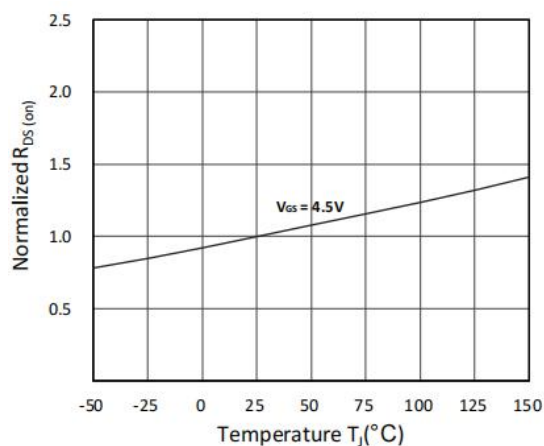


Figure 6: Normalized $R_{DS(ON)}$ vs. Temperature

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

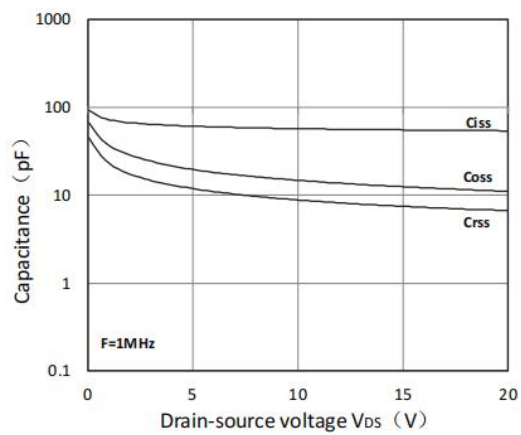


Figure 7: Capacitance Characteristics

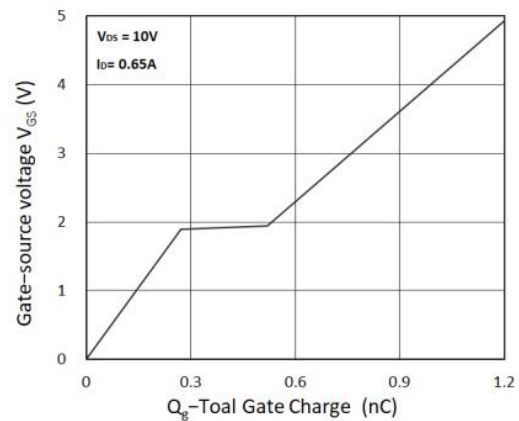
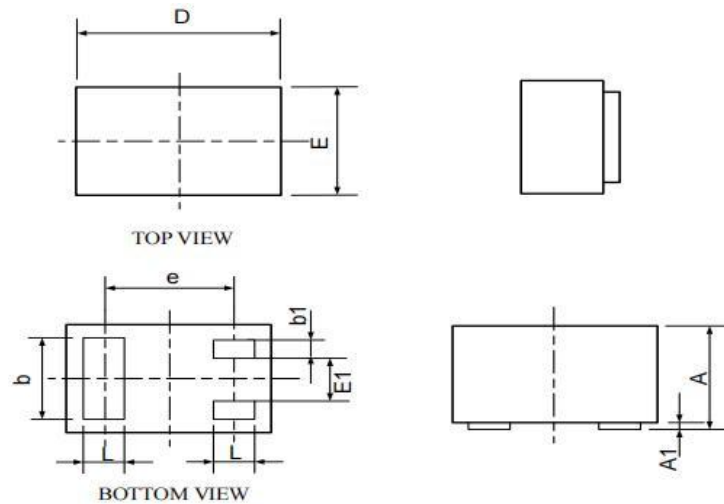
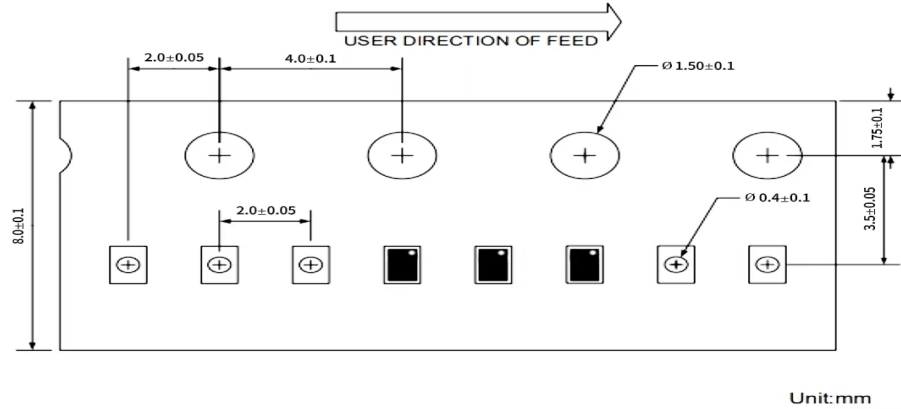


Figure 8: Gate Charge Characteristics

DFN1006-3L Package

编带进料方向

DFN1006-3L:



DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.38	0.40	0.014	0.015
A1	0.00	0.05	0.000	0.002
b	0.40	0.60	0.016	0.024
b1	0.10	0.20	0.004	0.008
D	0.95	1.05	0.037	0.041
e	0.65BSC		0.026BSC	
E	0.55	0.65	0.022	0.026
E1	0.19BSC		0.007BSC	
L	0.20	0.30	0.008	0.012

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