Descriptions

This 20V,0.75A N-Channel MOSFET in a DFN1006-3L Plastic Package.

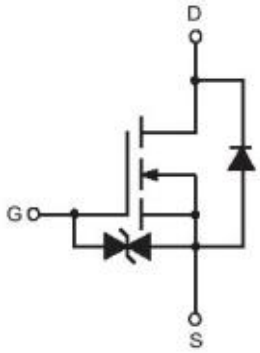
Features

- Sensitive gate trigger current and Low Holding current
- ESD protected up to 2KV
- Halogen-free Product

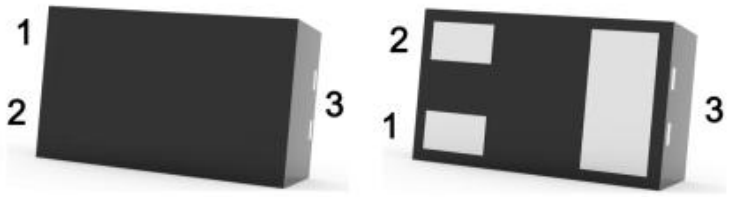
Applications

Intended for use in general purpose switching and phase control applications

Equivalent Circuit



Pinning



Pin1:Gate Pin2:Source Pin3:Drain

Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GSS}	±8	V
Drain Current – Continuous		I_D	0.75	A
Pulsed Drain Current		I_{DM}	1.8	A
Power Dissipation		P_D	0.9	W
Storage Temperature Range		T_{stg}	-55 to 150	℃
Thermal resistance, junction - ambient	t ≤ 10s	$R_{\theta JA}$	100	℃/W
	Steady-State		140	

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	V_{DSS}	V_{GS}=0 I_D=250uA	20	22.9		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0 V_{DS}=20V			1	μA
Gate–Body Leakage	I_{GSS}	V_{DS}=0V V_{GS}=±8V			10	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250uA	0.3	0.68	1	V
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	V_{GS}=2.5V I_D=200mA		273	400	mΩ
	$R_{DS(on)(2)}$	V_{GS}=1.8V I_D=100mA		353	750	mΩ
	$R_{DS(on)(3)}$	V_{GS}=1.5V I_D=50mA		442		mΩ
	$R_{DS(on)(4)}$	V_{GS}=1.2V I_D=20mA		733		mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=250mA		0.86	1.2	V
Gate Resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		60		Ω
Input Capacitance	C_{iss}	V_{DS}=10V V_{GS}=0V f=1.0MHz		105		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			20		

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=10V, I_D=0.4A		0.85		nC
Gate Source Charge	Q_{gs}			0.1		
Gate Drain Charge	Q_{gd}			0.25		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=4.5V V_{DS}=10V R_L=25Ω R_{GEN}=3Ω		2		ns
Turn-On Rise Time	t_r			4		ns
Turn-Off Delay Time	$t_{d(off)}$			18		ns
Turn-Off Fall Time	t_f			8		ns

Electrical Characteristic Curve

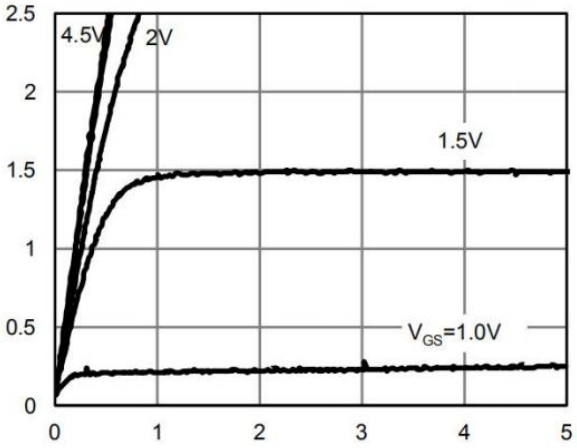


Fig 1: On-Region Characteristics

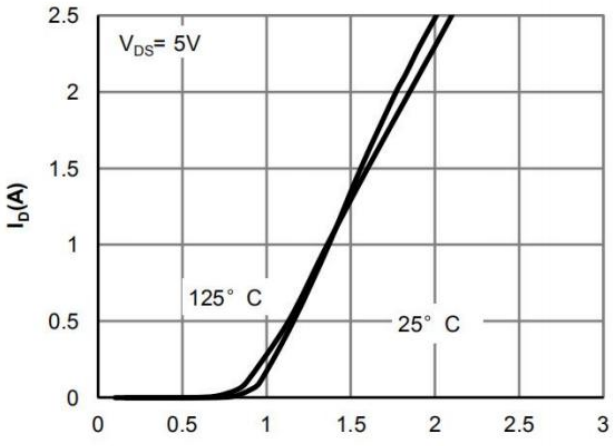


Figure 2: Transfer Characteristics

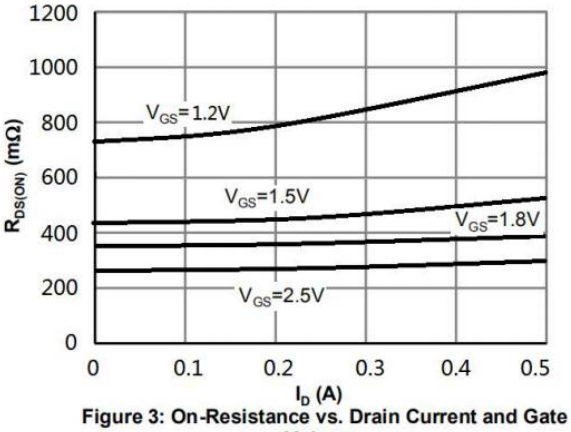


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

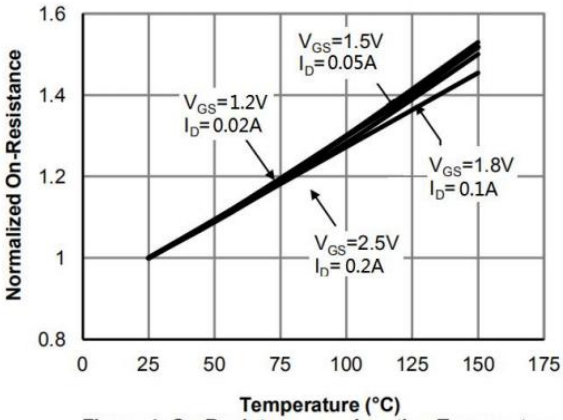


Figure 4: On-Resistance vs. Junction Temperature

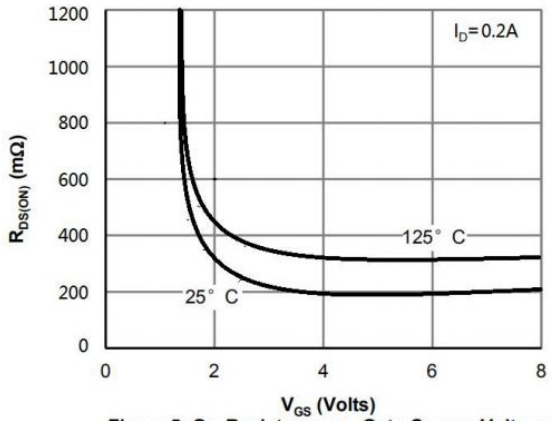


Figure 5: On-Resistance vs. Gate-Source Voltage

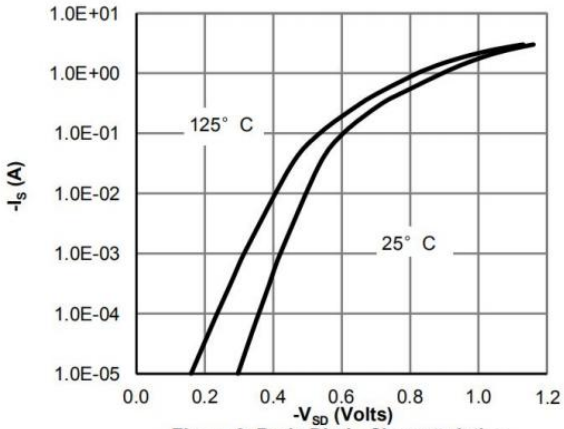


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

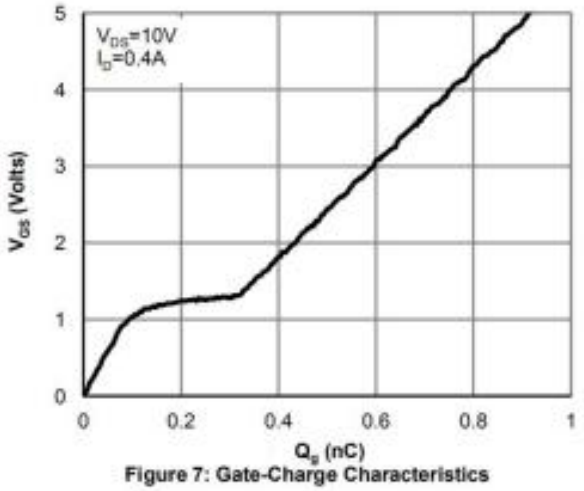


Figure 7: Gate-Charge Characteristics

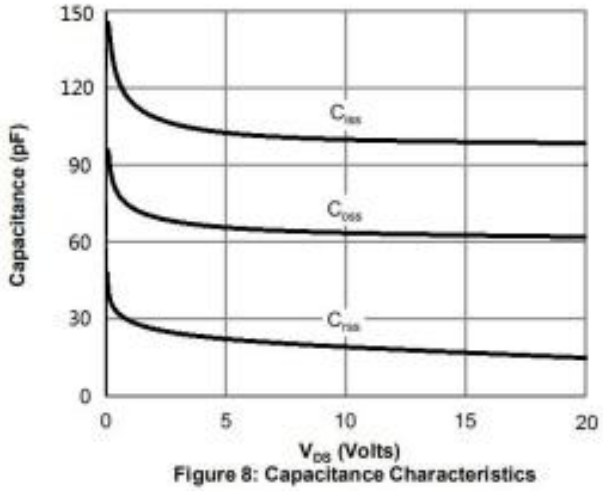


Figure 8: Capacitance Characteristics

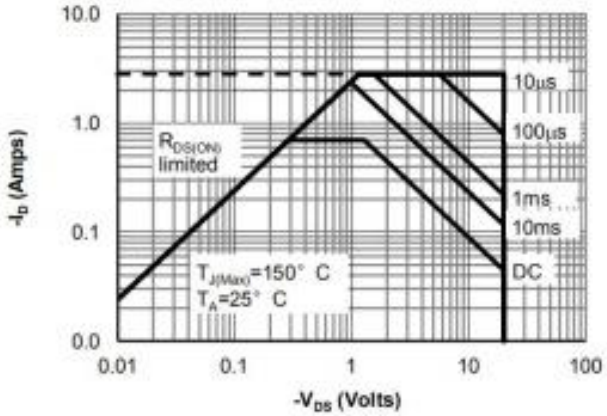


Figure 9: Maximum Forward Biased Safe Operating Area

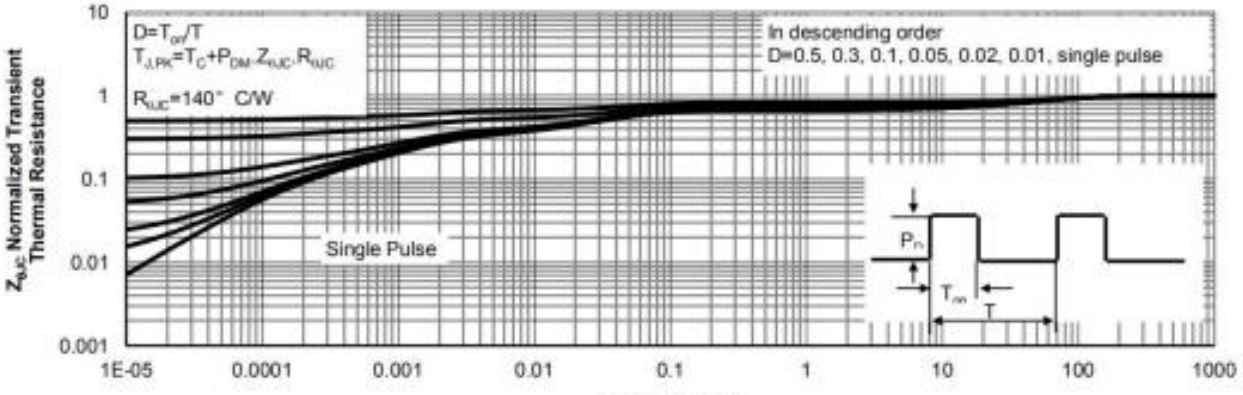


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions

Note:

3134K: Product Type

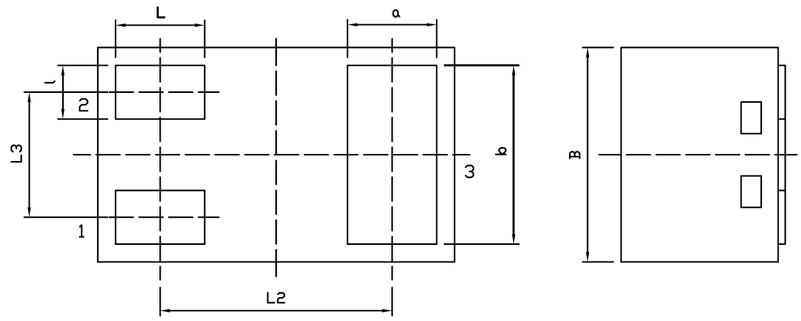
Packaging SPEC

REEL INFORMATION

Package Type	Units					Dimension (unit：mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
DFN1006-3L	10,000	10	100,000	4	400,000	7″ ×8	210×205×205	445×230×435

Package Outline Dimensions

DFN1006-3L Unit:mm



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	0.95	1.00	1.05
B	0.55	0.60	0.65
C	0.45	0.50	0.55
L	0.22	0.26	0.30
L2	–	0.65	–
L3	–	0.35	–
L4	–	0.152	–
a	0.21	0.25	0.29
b	0.47	0.51	0.55
l	0.11	0.15	0.19
k	0.00	–	0.03

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