



N-Channel Small Signal MOSFET

20V
DFN1006-3L

Features

- N-Channel Switch
- Surface Mount Package
- High Density Cell Design for Low RDS(ON)
- ESD Protected

Mechanical Data

- Case: DFN1006-3L Package
 - Case Material: "Green" Molding Compound
UL Flammability Classification Rating 94V-0
 - Halogen Free
- Note: Products with logo  or  are made by HY Electronic (Cayman) Limited.

Ordering Information

- Package :DFN1006-3L
- Reel Size :7 (inches)
- Quantity Per Reel :10,000 pcs

Package Outline



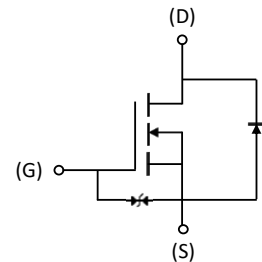
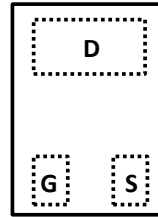
DFN1006-3L Top View

Marking Information



"34" = Product Type Marking Code

Device Schematic & PIN Configuration



Maximum Ratings (@TA = +25°C, unless otherwise specified.)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±12	V
Drain Current-Continuous ⁽¹⁾	I _D	0.75	A
Pulsed Drain Current	I _{DM}	1.8	A
Power Dissipation ⁽¹⁾	P _D	0.15	W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C
Thermal Resistance from Junction to Ambient ⁽¹⁾	R _{θJA}	833	°C/W

Electrical Characteristics(@TA = +25°C, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	V _{DSS}	20	-	-	V
Gate-Threshold Voltage ⁽²⁾	V _{DS} =V _{GS} , I _D =250μA	V _{GS(th)}	0.35	-	1.1	V
Gate-Body Leakage Current	V _{DS} =0V, V _{GS} =±10V	I _{GSS}	-	-	±20	μA
Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V	I _{DSS}	-	-	1.0	μA
Drain-Source On-Resistance ⁽²⁾	V _{GS} =4.5V, I _D =0.65A	R _{DS(ON)}	-	-	380	mΩ
	V _{GS} =2.5V, I _D =0.55A		-	-	450	
	V _{GS} =1.8V, I _D =0.45A		-	-	800	
Forward Transconductance	V _{DS} =10V, I _D =0.8A	g _{FS}	-	1.6	-	S



Electrical Characteristics (@TA = +25°C, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Dynamic Characteristics⁽⁴⁾						
Input Capacitance	$V_{DS}=16V, V_{GS}=0V$ $f=1MHz$	C_{ISS}	-	79	120	pF
Output Capacitance		C_{OSS}	-	13	30	
Reverse Transfer Capacitance		C_{RSS}	-	9	10	
Switching Characteristics⁽⁴⁾						
Turn-On Delay Time ⁽³⁾	$V_{GS}=4.5V, V_{DS}=10V,$ $R_{GEN}=10\Omega, I_D=0.5A$	$t_{d(on)}$	-	6.7	-	nS
Turn-On Rise Time ⁽³⁾		t_r	-	4.8	-	
Turn-Off Delay Time ⁽³⁾		$t_{d(off)}$	-	17.3	-	
Turn-Off Fall Time ⁽³⁾		t_f	-	7.4	-	
Source-Drain Characteristics⁽⁴⁾						
Diode Forward Voltage ⁽³⁾	$I_S=0.15A, V_{GS}=0V$	V_{DS}	-	-	1.2	V

Notes: 1. Surface mounted on FR4 board using the minimum recommended pad size.

2. Pulse Test : Pulse Width = 300 μ s, Duty Cycle = 2%.

3. Switching characteristics are independent of operating junction temperatures.

4. Guaranteed by design, not subject to producing.



Rating and Characteristic Curves

FIG.1 - Output Characteristic

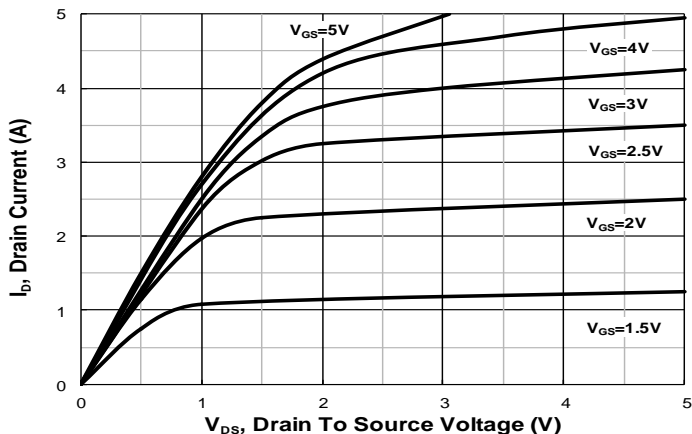


FIG.2 - Transfer Characteristics

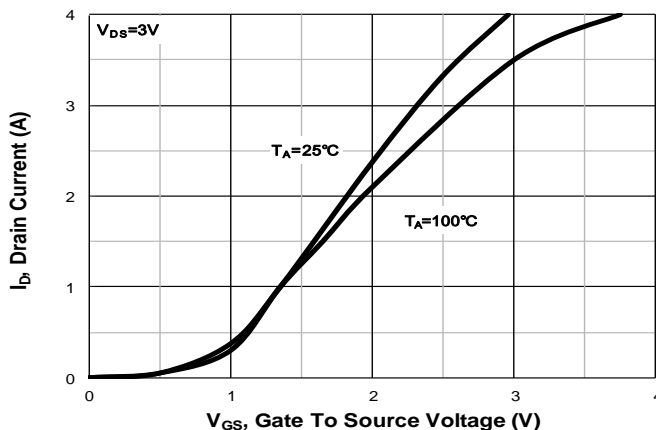


FIG.3 - $R_{DS(ON)} - I_D$

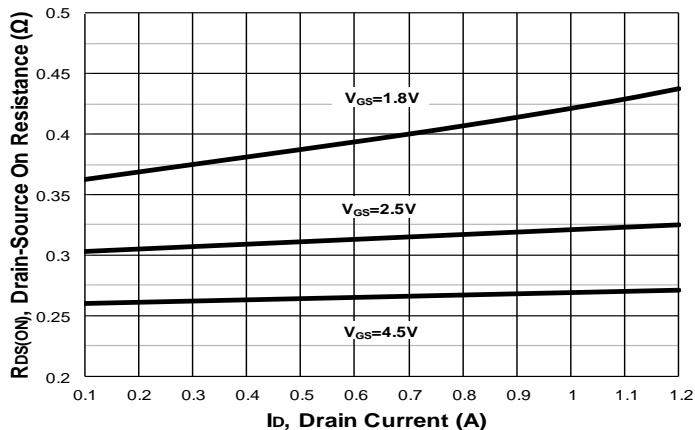


FIG.4 - $R_{DS(ON)} - V_{GS}$

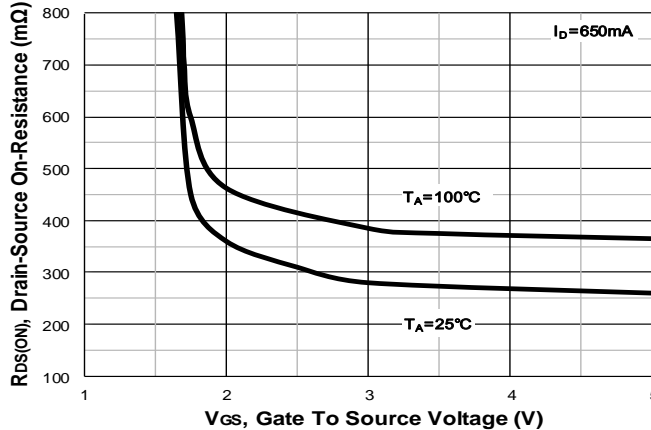


FIG.5 - $I_S - V_{SD}$

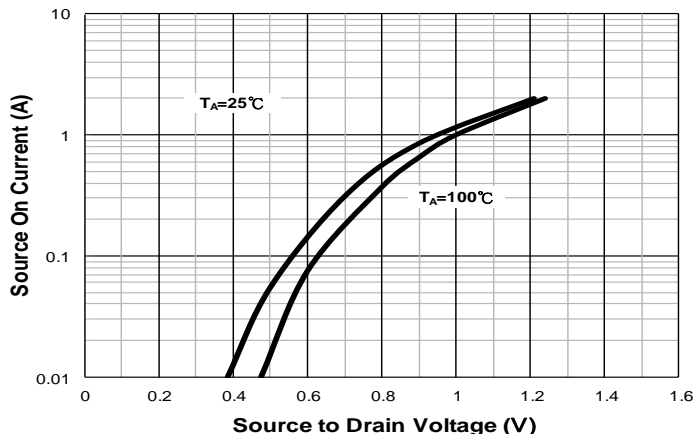
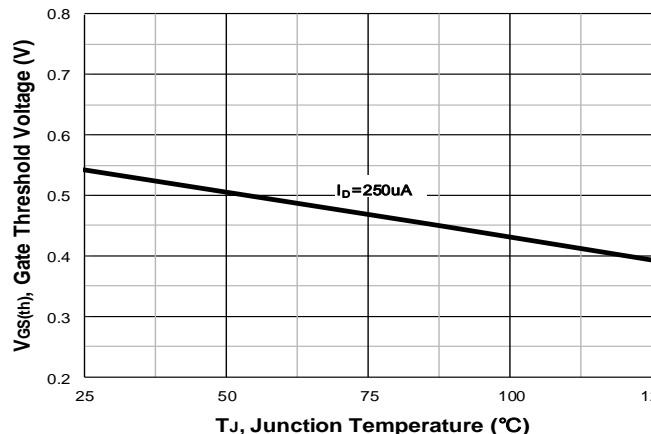
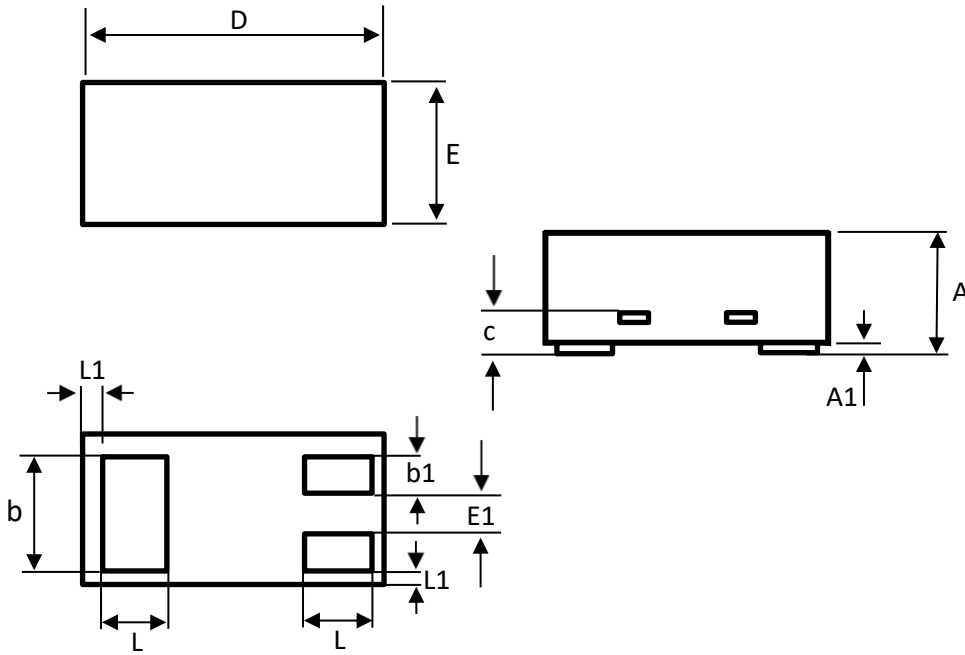


FIG.6 - Threshold Voltage



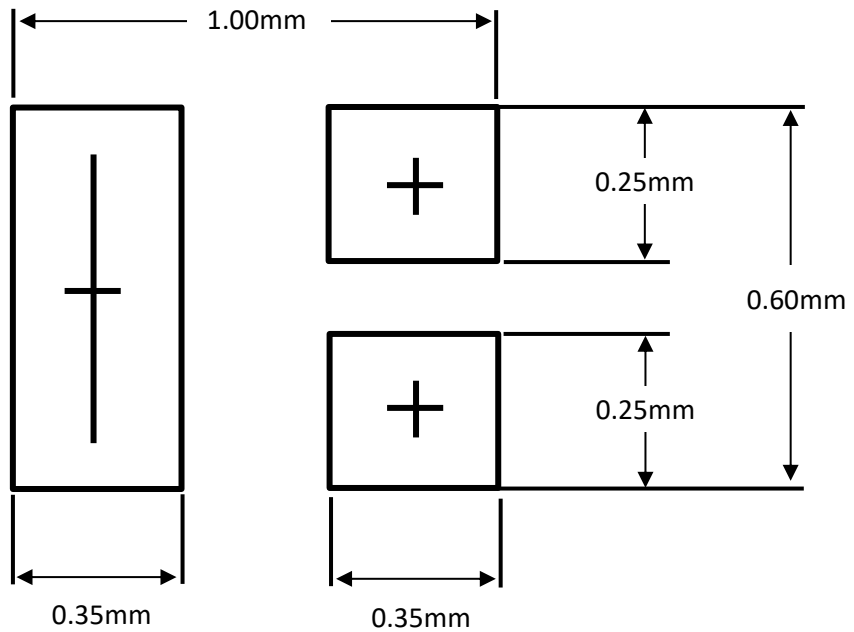


Package Outline Dimensions



DFN1006-3L Package		
Dim	Min	Max
A	0.45	0.55
A1	0.00	0.05
b	0.45	0.55
b1	0.10	0.20
C	0.12	0.18
D	0.95	1.05
E	0.55	0.65
E1	0.15	0.25
L1	0.05 REF.	
L	0.20	0.30
All Dimensions in mm		

Suggested Soldering Pad Layout



Note:

- 1. The pad layout is for reference purposes only.
- 2. General tolerance $\pm 0.05\text{mm}$



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