

### Product Summary

V <sub>(BR)DSS</sub>	R <sub>DS(on)TYP</sub>	I <sub>D</sub>
-20V	400mΩ@-4.5V	-0.66A
	570mΩ@-2.5V	
	810mΩ@-1.8V	

### Feature

- Trench Technology Power MOSFET
- Low R<sub>DS(ON)</sub>
- Low Gate Charge
- ESD Protected

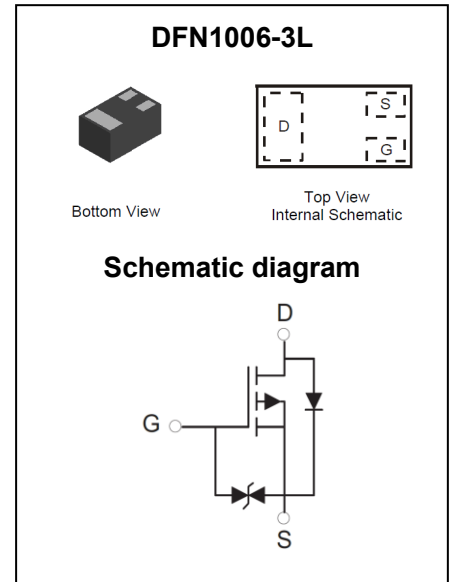
### Application

- Load Switching
- Low Current Inverters
- Low Current DC/DC Converters

### MARKING:



Top View  
Bar Denotes Gate  
and Source Side



### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V <sub>DS</sub>	-20	V
Gate - Source Voltage	V <sub>GS</sub>	±12	V
Continuous Drain Current <sup>1,5</sup>	I <sub>D</sub>	-0.66	A
Pulsed Drain Current <sup>2</sup>	I <sub>DM</sub>	-2.0	A
Power Dissipation <sup>4,5</sup>	P <sub>D</sub>	0.3	W
Thermal Resistance from Junction to Ambient <sup>5</sup>	R <sub>θJA</sub>	416	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55~ +150	°C

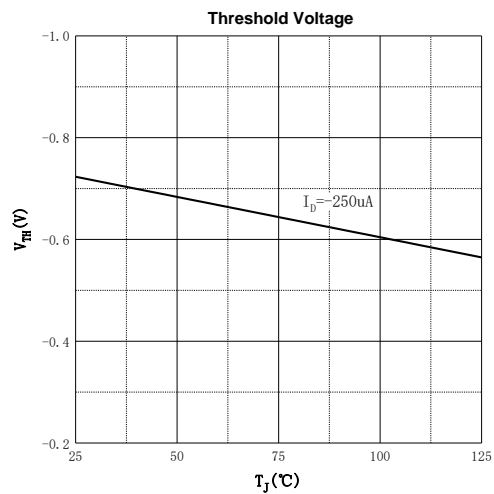
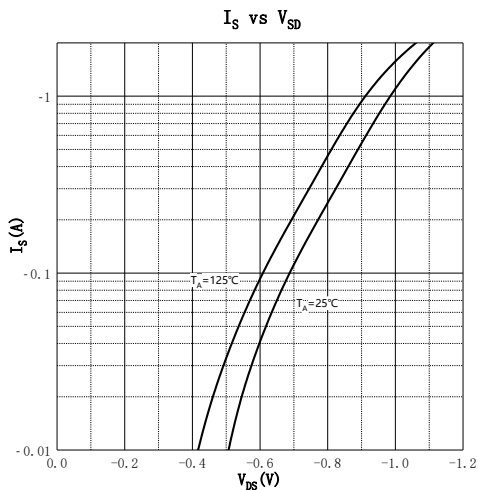
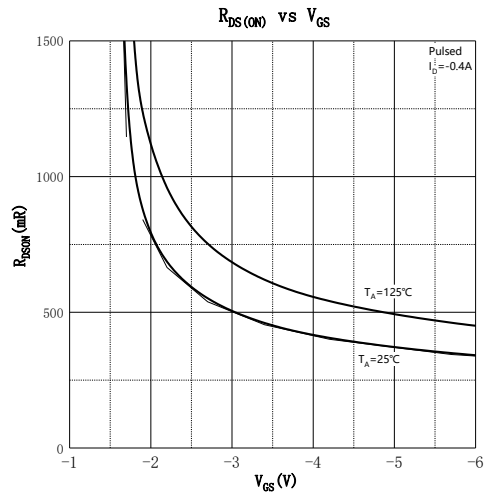
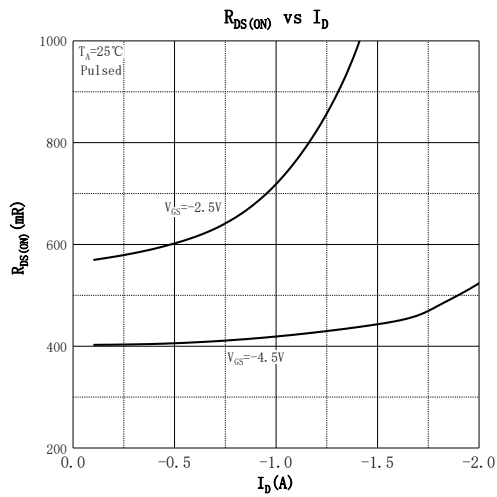
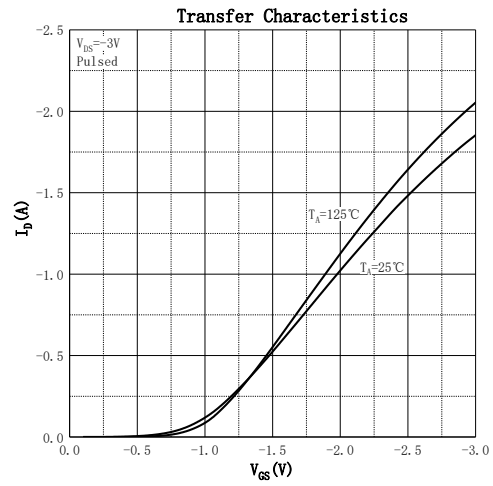
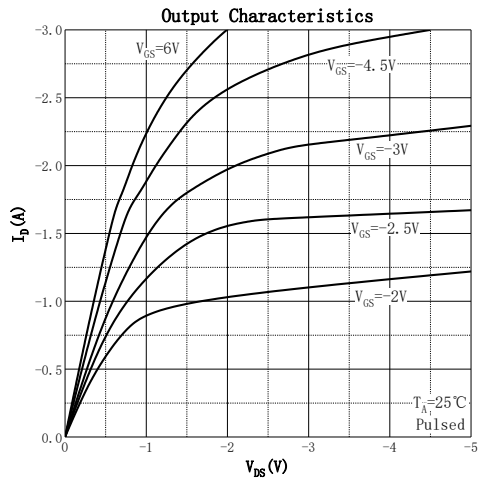
**MOSFET ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise noted)**

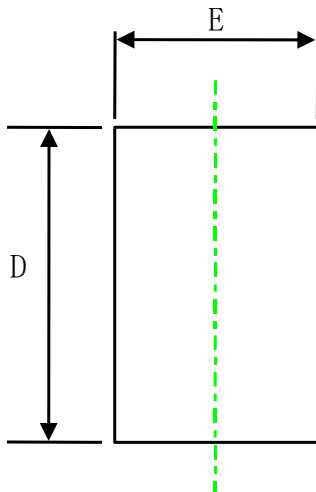
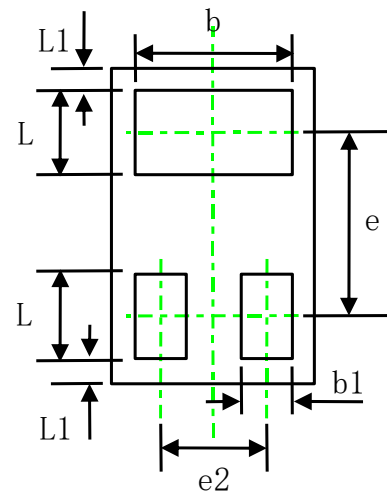
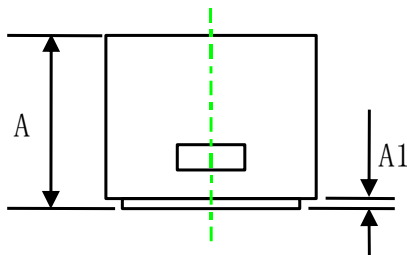
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain - Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V			-1	μA
Gate - Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±10	μA
<b>On Characteristics<sup>3</sup></b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.4	-0.7	-1.0	V
Drain-source On-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -0.5A		400	520	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -0.3A		570	780	
		V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -0.12A		810	1100	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -0.4A		1		S
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = 0V, f = 1MHz		79		pF
Output Capacitance	C <sub>oss</sub>			15		
Reverse Transfer Capacitance	C <sub>rss</sub>			13		
<b>Switching Characteristics</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -0.2A		2.26		nC
Gate-source Charge	Q <sub>gs</sub>			0.45		
Gate-drain Charge	Q <sub>gd</sub>			0.24		
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10V, V <sub>GS</sub> = -4.5V, R <sub>L</sub> = 50Ω, R <sub>G</sub> = 3Ω		8		ns
Turn-on Rise Time	t <sub>r</sub>			5.5		
Turn-off Delay Time	t <sub>d(off)</sub>			30		
Turn-off Fall Time	t <sub>f</sub>			17		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -0.5A			1.2	V

Notes :

- 1.The maximum current rating is limited by package.
- 2.Repetitive rating;pulse width limited by T<sub>J</sub>(MAX) = 150°C.
- 3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 4.The power dissipation PD is limited by T<sub>J</sub>(MAX) = 150°C.
- 5.Device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with TA =25°C.

**Typical Characteristics**



**DFN1006-3L Package Information**

 TOP VIEW  
 [顶视图]

 BOTTOM VIEW  
 [底视图]

 SIDE VIEW  
 [侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.400	0.550	0.016	0.022
A1	0.000	0.050	0.000	0.002
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.400	0.600	0.016	0.024
e	0.65 TYP		0.026 TYP	
e2	0.35 TYP		0.014 TYP	
L1	0.05 REF		0.002 REF	
L	0.200	0.300	0.008	0.012
b1	0.100	0.200	0.004	0.008