

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	470mΩ@-10V	-0.45A
	680mΩ@-4.5V	

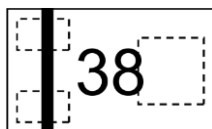
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

Application

- Load Switch
- DC/DC Converter

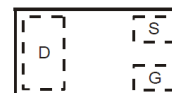
MARKING:



DFN1006-3L

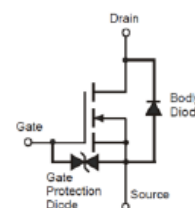


Bottom View



Top View
Internal Schematic

Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	-30	V
Gate - Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ^{1,5}	I_D	-0.45	A
Pulsed Drain Current ²	I_{DM}	-1.8	A
Power Dissipation ^{4,5}	P_D	0.3	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	416	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

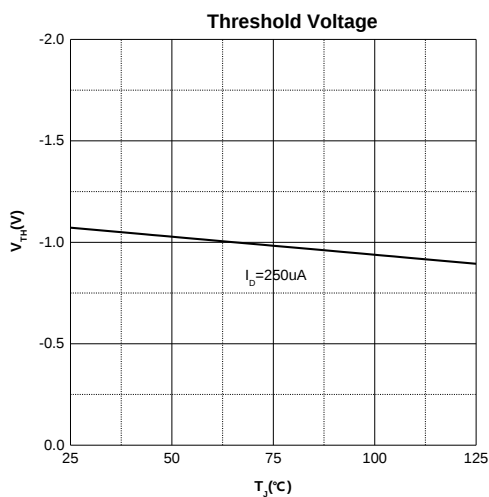
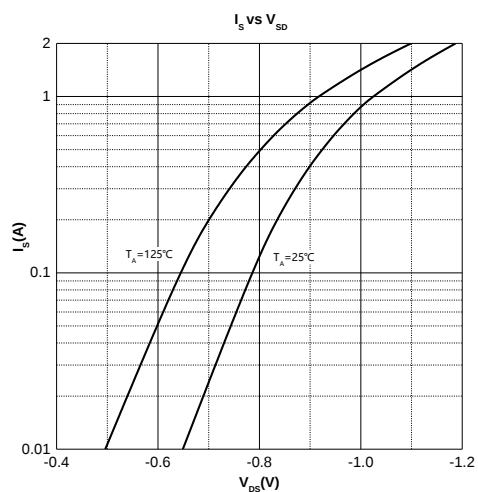
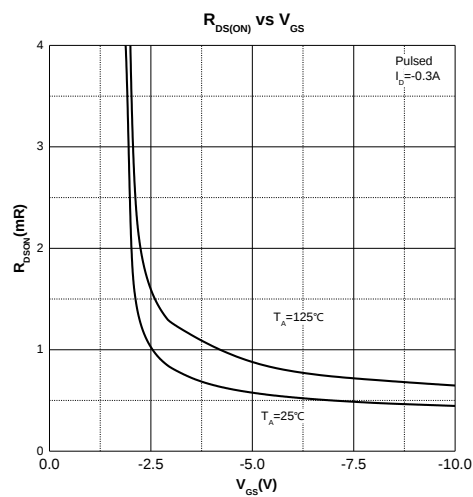
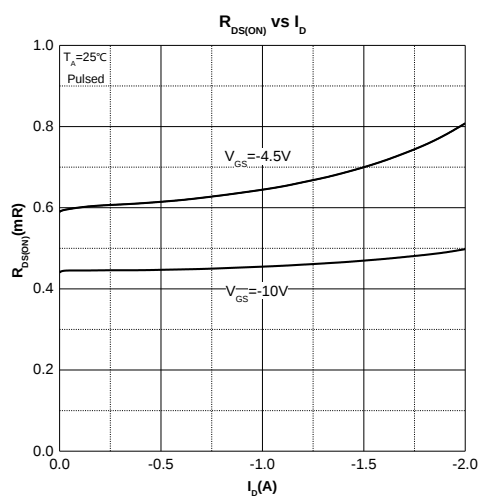
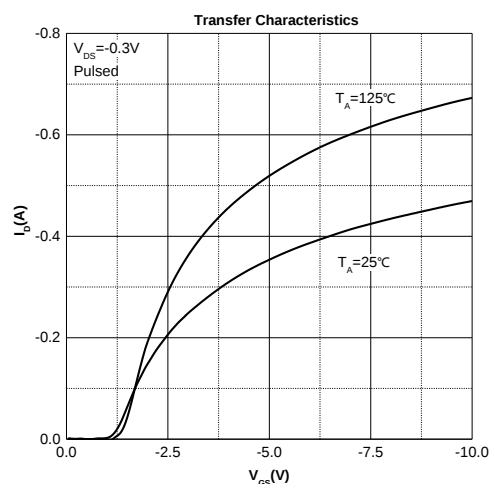
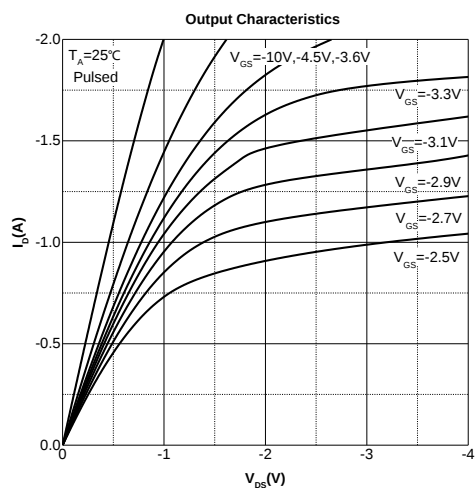
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

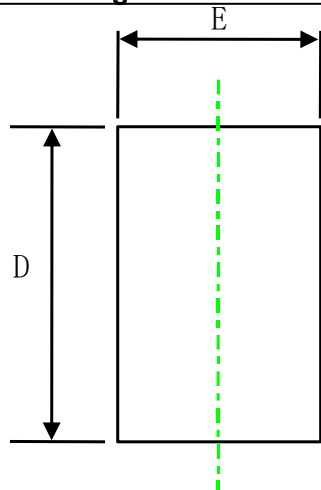
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±5	μA
On Characteristics ³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	-0.5	-1	-1.5	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -0.3A		470	800	mΩ
		V _{GS} = -4.5V, I _D = -0.3A		680	900	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		55.2		pF
Output Capacitance	C _{oss}			10.8		
Reverse Transfer Capacitance	C _{rss}			7.4		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		13.4		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -10V, V _{GS} = -4.5V, I _D = -0.5A		0.60		nC
Gate-source Charge	Q _{gs}			0.46		
Gate-drain Charge	Q _{gd}			0.12		
Turn-on Delay Time	t _{d(on)}	V _{DD} = -10V, V _{GS} = -4.5V, R _L = 50Ω, R _G = 3Ω		8.5		ns
Turn-on Rise Time	t _r			5.8		
Turn-off Delay Ttime	t _{d(off)}			31		
Turn-off Fall Time	t _f			18		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = -0.3A			-1.2	V

Notes :

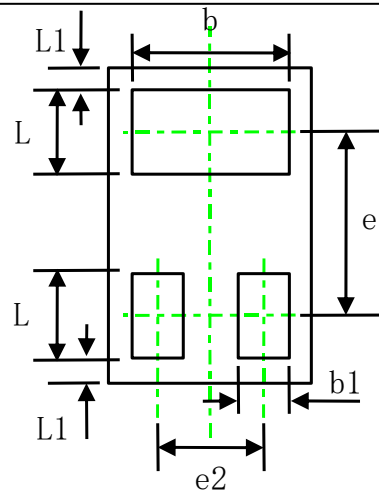
- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics

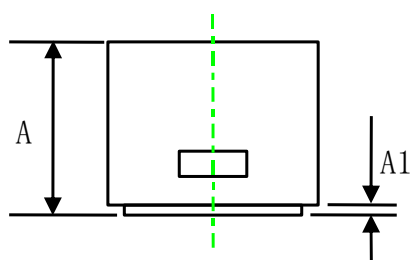


DFN1006-3L Package Information


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