

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	1.9Ω@-10V	-0.13A
	2.5Ω@-4.5V	

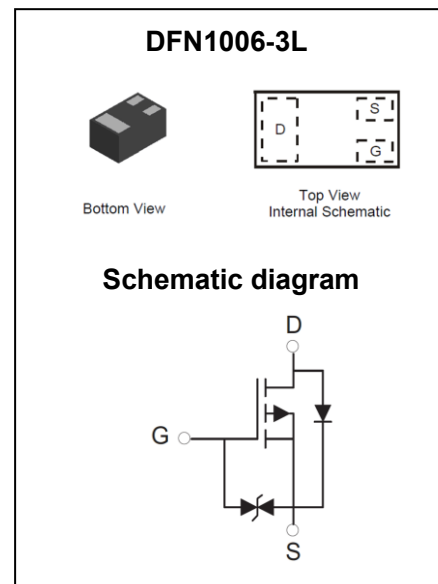
Feature

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

Application

- Power Switching Application

MARKING:



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

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	-60	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current ^{1,5}	$T_A = 25^\circ\text{C}$	I_D	-0.13	A
	$T_A = 100^\circ\text{C}$	I_D	-0.10	
Pulsed Drain Current ²		I_{DM}	-0.52	A
Power Dissipation ^{5,6}		P_D	0.2	W
Thermal Resistance from Junction to Ambient ⁵		$R_{\theta JA}$	625	$^\circ\text{C/W}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

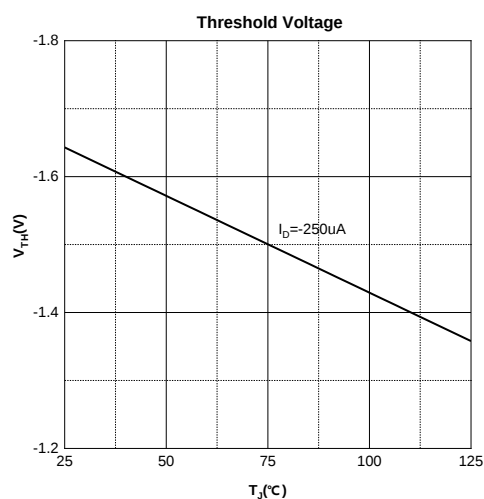
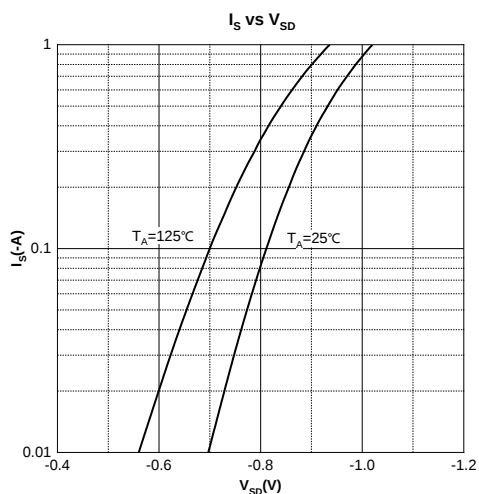
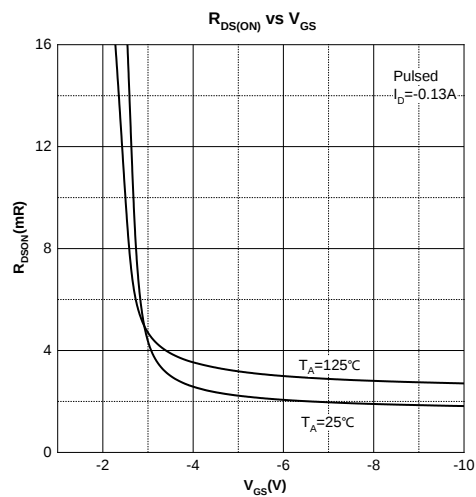
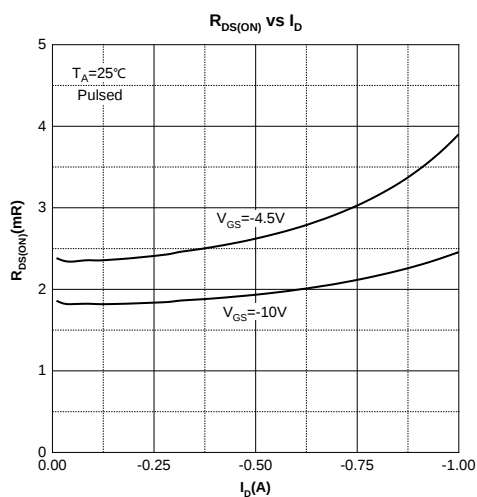
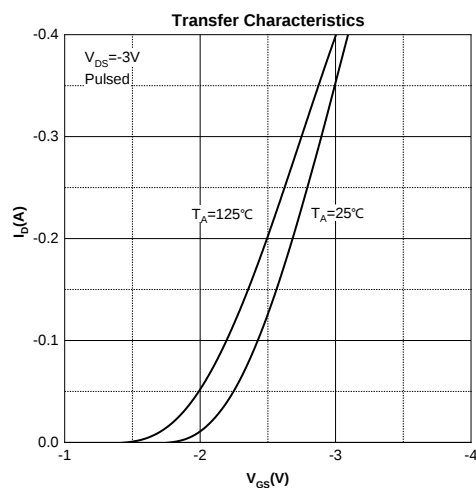
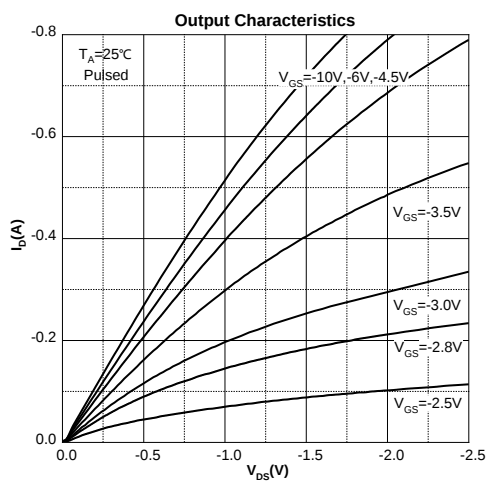
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

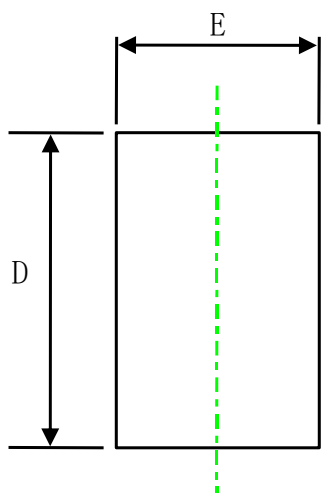
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -50V, V_{GS} = 0V$			-1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 10	μA
On Characteristics ³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.6	-3.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -0.1A$		1.9	2.7	Ω
		$V_{GS} = -4.5V, I_D = -0.1A$		2.5	3.5	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -25V, V_{GS} = 0V, f = 1MHz$		37		pF
Output Capacitance	C_{oss}			10		
Reverse Transfer Capacitance	C_{rss}			5.9		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		159		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -25V, V_{GS} = -10V, I_D = -1A$		2.4		nC
Gate-source Charge	Q_{gs}			0.4		
Gate-drain Charge	Q_{gd}			0.8		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -30V, V_{GS} = -10V,$ $R_L = 110\Omega, R_G = 50\Omega$		11		ns
Turn-on Rise Time	t_r			6		
Turn-off Delay Time	$t_{d(off)}$			19		
Turn-off Fall Time	t_f			8		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = -0.13A$			-1.2	V

Notes :

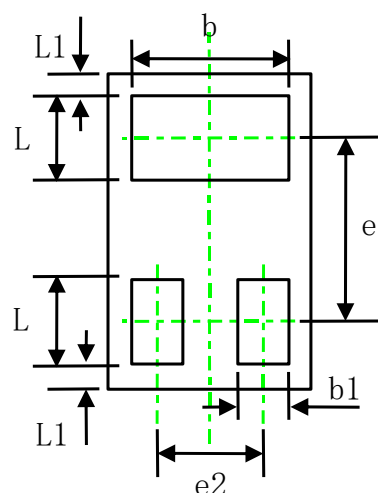
- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4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

Typical Characteristics

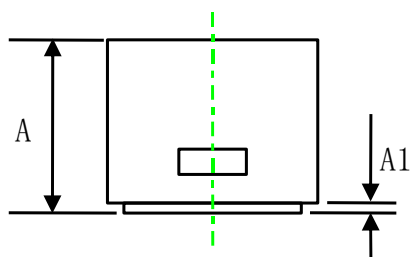


DFN1006-3L Package Information


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