

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	170mΩ@4.5V	0.75A
	230mΩ@2.5V	
	330mΩ@1.8V	

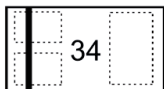
Feature

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

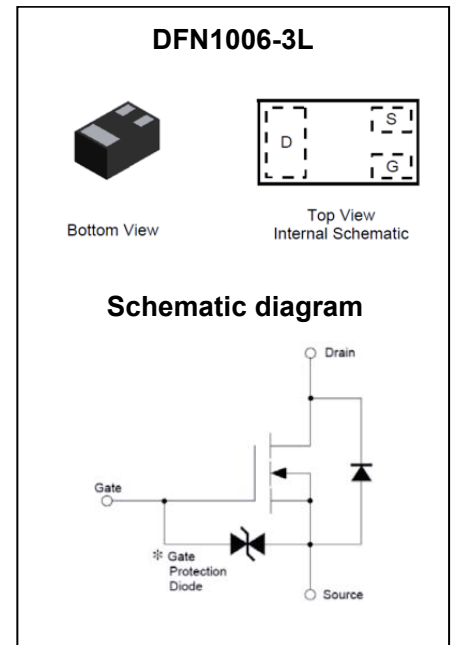
Application

- Load Switch
- DC/DC Converter

MARKING:



Top View
Bar Denotes Gate
and Source Side



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

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	20	V
Gate - Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ^{1,5}	I_D	0.75	A
Pulsed Drain Current ²	I_{DM}	3.0	A
Power Dissipation ^{4,5}	P_D	0.1	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	1250	$^\circ\text{C}/\text{W}$
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)

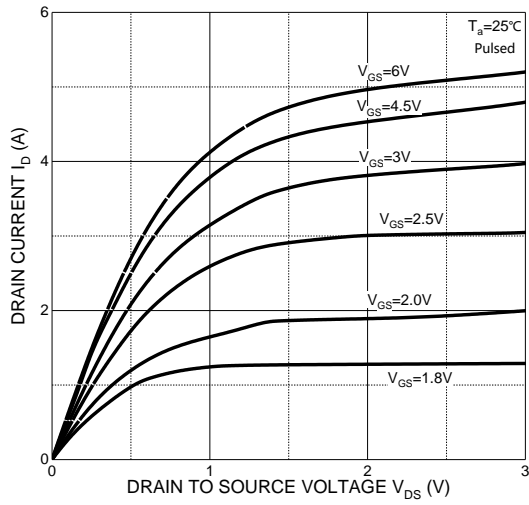
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1.0	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 10V$			± 10	μA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4	0.7	1.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 650mA$		170	380	m Ω
		$V_{GS} = 2.5V, I_D = 550mA$		230	450	
		$V_{GS} = 1.8V, I_D = 450mA$		330	590	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 10V, f = 1MHz$		55.6		pF
Output Capacitance	C_{oss}			14.1		
Reverse Transfer Capacitance	C_{rss}			10.3		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 0.65A$		0.78		nC
Gate-source Charge	Q_{gs}			0.23		
Gate-drain Charge	Q_{gd}			0.01		
Turn-on Delay Time	$t_{d(on)}$	$V_{DS} = 10V, I_D = 500mA,$ $V_{GS} = 4.5V, R_G = 10\Omega$		6.7		ns
Turn-on Rise Time	t_r			4.8		
Turn-off Delay Time	$t_{d(off)}$			17.3		
Turn-off Fall Time	t_f			7.4		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 0.15A$		0.65	1.2	V

Notes :

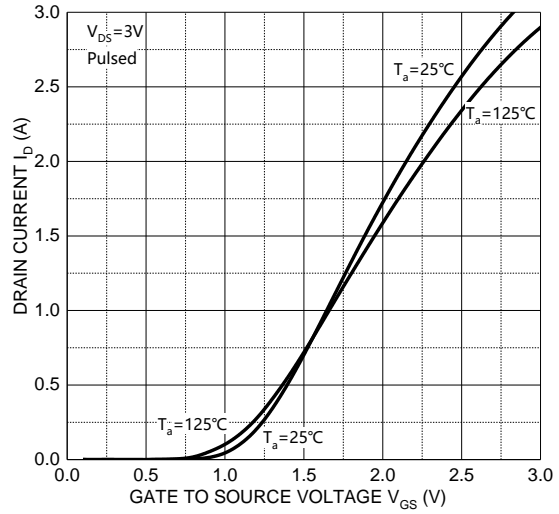
- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics

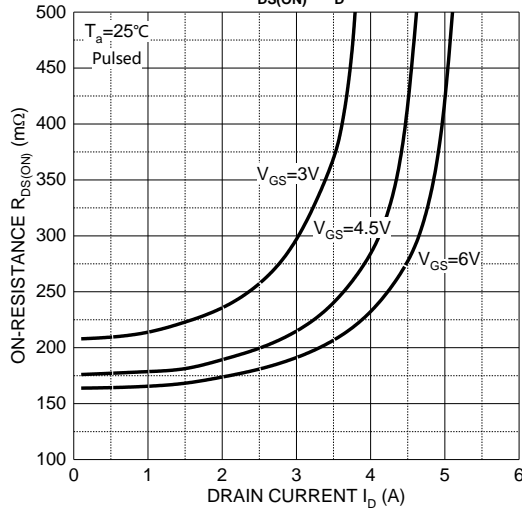
Output Characteristics



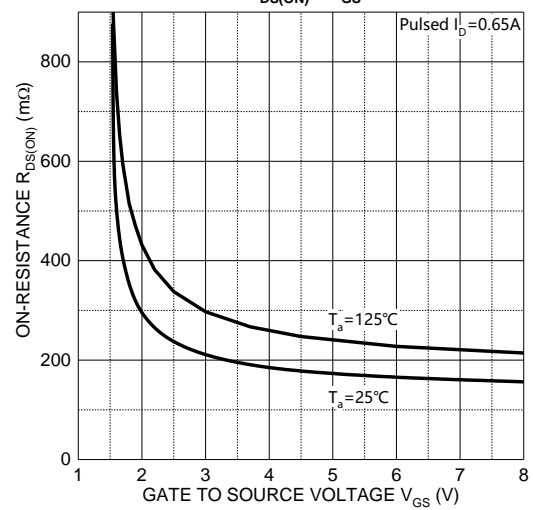
Transfer Characteristics



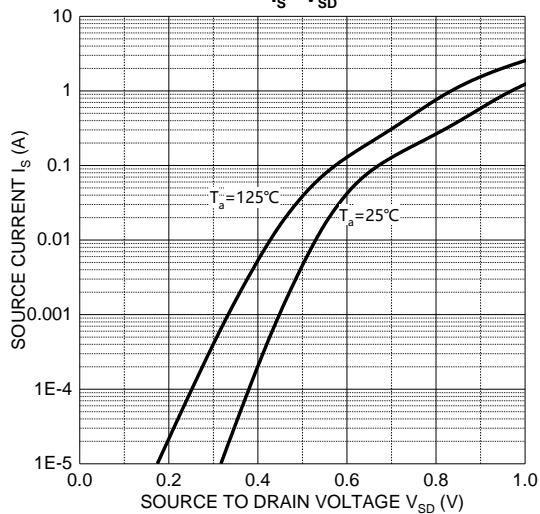
$R_{DS(ON)} - I_D$



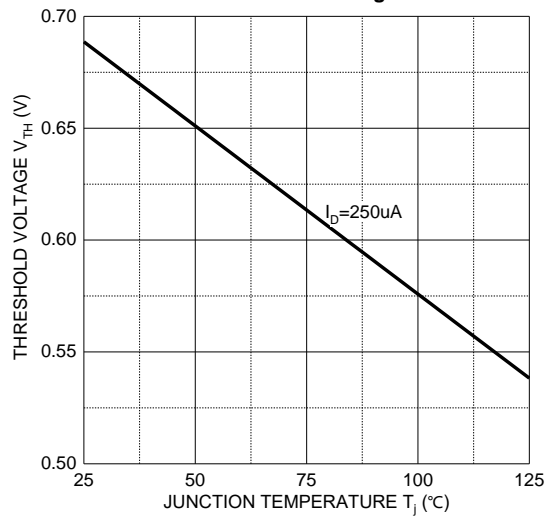
$R_{DS(ON)} - V_{GS}$

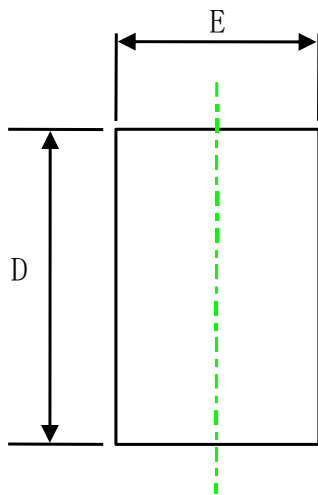
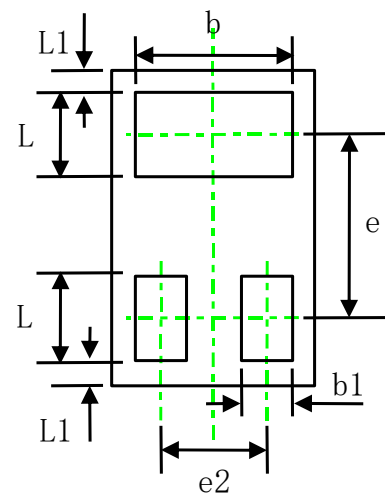
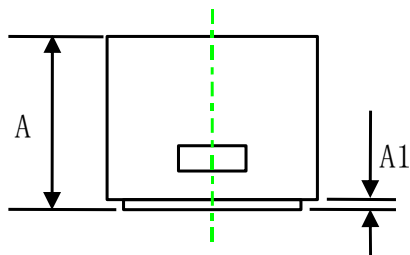


$I_S - V_{SD}$



Threshold Voltage



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