

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	500mΩ@4.5V	0.75A
	700mΩ@2.5V	

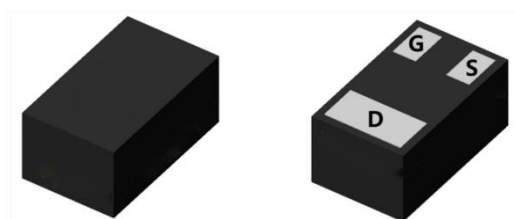
Feature

- High Power and current handing capability
- Low Gate Charge
- ESD protected

Application

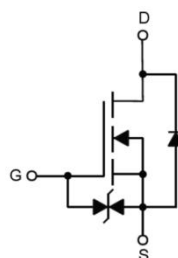
- Load Switch for Portable Devices
- Voltage controlled small signal switch

Package



DFN1006-3L

Circuit diagram



Marking



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}	± 10	V
Continuous Drain Current	I_D	0.75	A
Pulsed Drain Current ¹⁾	I_{DM}	1.8	A
Power Dissipation ²⁾	P_D	0.7	W
Thermal Resistance from Junction to Ambient ²⁾	$R_{\theta JA}$	175	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Electrical characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±10V, V _{DS} = 0V			±10	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.35	0.7	1.1	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =0.65A		250	500	mΩ
		V _{GS} =2.5V, I _D =0.45A		300	700	
Dynamic characteristics ³⁾						
Input Capacitance	C _{iss}	V _{DS} =16V,V _{GS} =0V,f =1MHz		79		pF
Output Capacitance	C _{oss}			13		
Reverse Transfer Capacitance	C _{rss}			9		
Total Gate Charge	Q _g	V _{DS} =10V,V _{GS} =4.5V, I _D =0.65A		1.24		nC
Gate-Source Charge	Q _{gs}			0.37		
Gate-Drain Charge	Q _{gd}			0.27		
Turn-on delay time	t _{d(on)}	V _{DS} =10V, V _{GS} =4.5V, I _D =0.5A, R _g =10Ω,		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 Current	I _S				0.75	A
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S =0.15A			1.2	V

Notes:

- 1) Pulse width $\leq 100\mu\text{s}$, duty cycle $\leq 1\%$, limited by T_{Jmax} .
- 2) Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.
- 3) Guaranteed by design, not subject to production testing.

Typical Characteristics

Fig. 1 - Output Characteristics

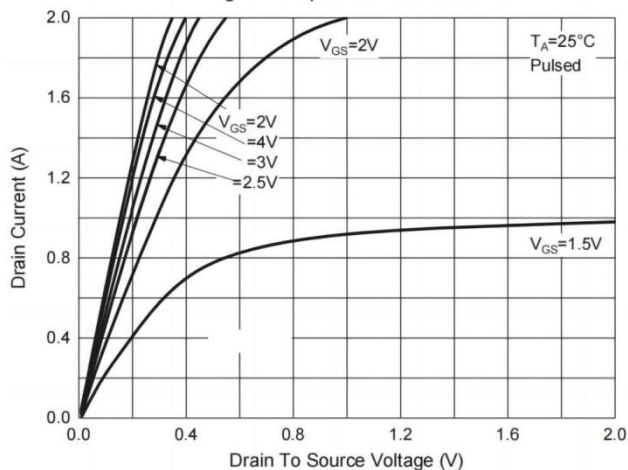


Fig. 2 - Transfer Characteristics

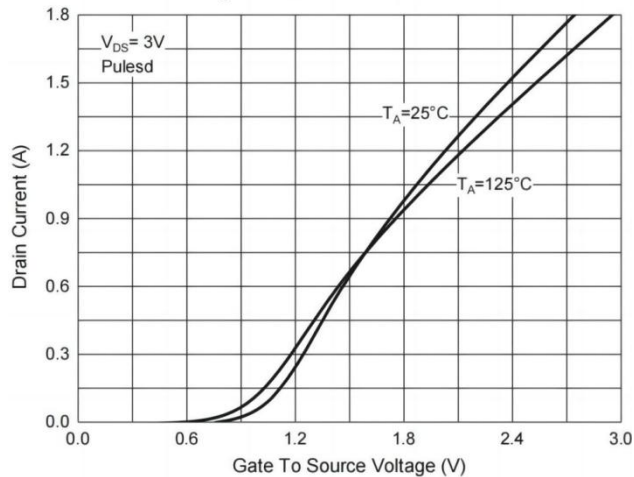


Fig. 3 - $R_{DS(ON)} - I_D$

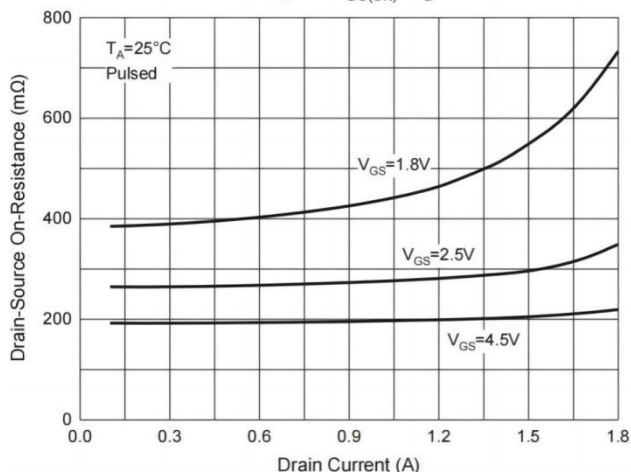


Fig. 4 - $R_{DS(ON)} - V_{GS}$

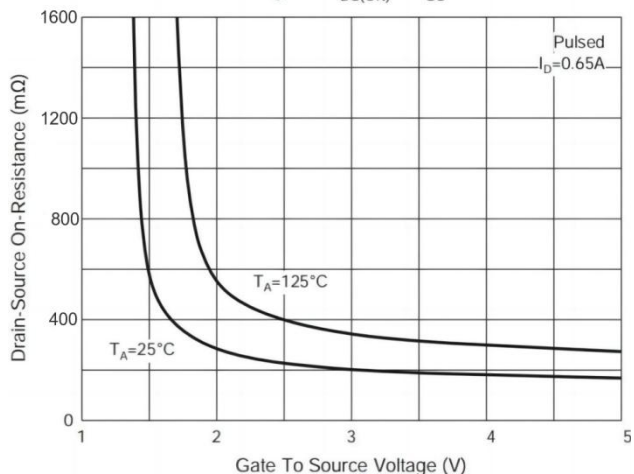


Fig. 5 - $I_S - V_{SD}$

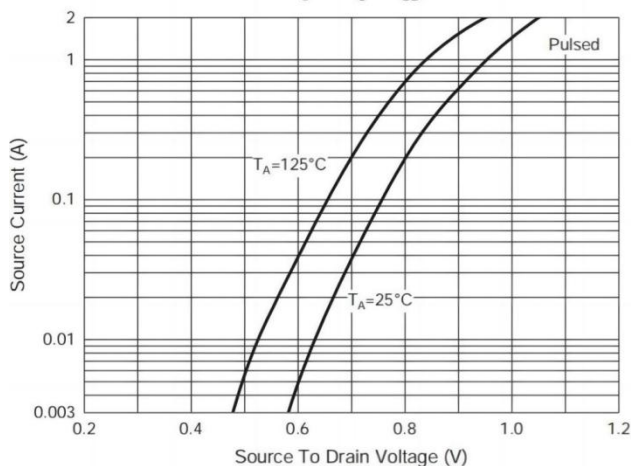
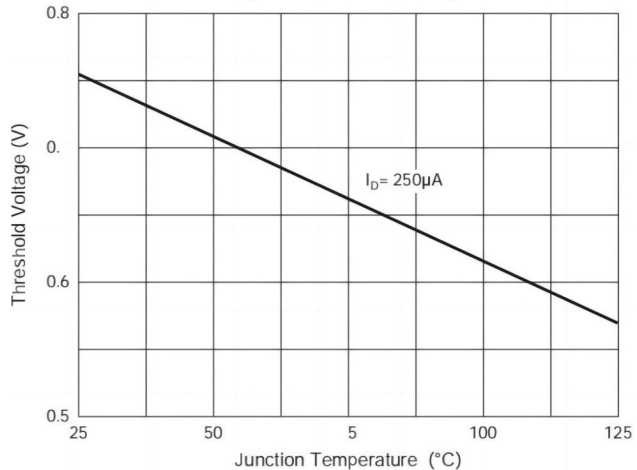
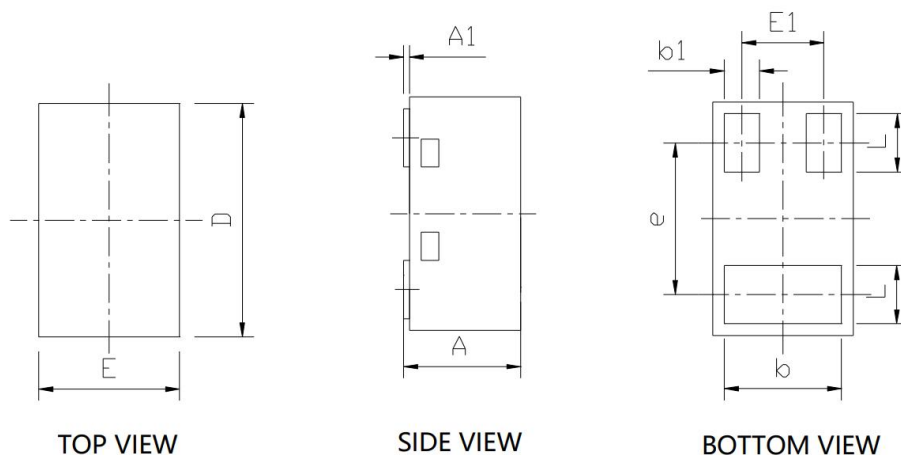


Fig. 6 - Threshold Voltage



DFN1006-3L Package Information



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
b	0.450	0.550	0.018	0.022
b1	0.100	0.200	0.004	0.008
D	0.900	1.100	0.035	0.043
E	0.550	0.650	0.022	0.026
E1	0.350 BSC		0.014 BSC	
e	0.650 BSC		0.026 BSC	
L	0.200	0.300	0.008	0.012