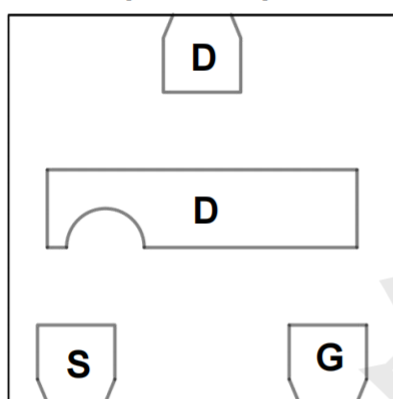


Product Summary

- V_{DS} -20 V
- I_{DS} (at $V_{GS}=-4.5V$) -3 A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) $\leq 80m\Omega$ (Typ)
- ESD protected gate, typical $\pm 2kV$

Package and Pin Configuration

Transparent top view

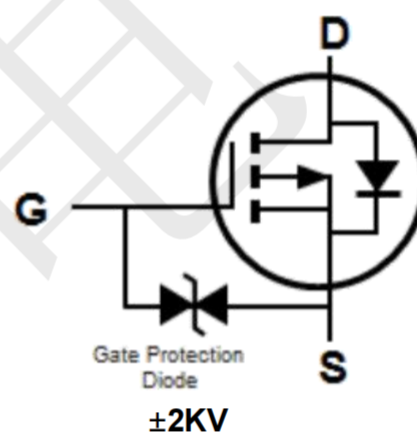


DFN1X1-3L

Application

- Interfacing Switching
- Portable equipment and battery
- Load Switch

Circuit diagram



Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 10	V
Continuous Drain Current	I_D	-3	A
Pulsed Drain Current ($t = 100 \mu s$)	I_{DM}	-10	A
Maximum Power Dissipation	P_D	1.26	W
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}C$

Thermal Characteristic

PARAMETER	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient($t \leq 10s$)	$R_{\theta JA}$	102	$^{\circ}C/W$

Note : Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.

Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = -250μA	BV _{DSS}	-20	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	V _{GS(th)}	-0.35	-0.7	-1.1	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±10V	I _{GSS}	--	--	±20	μA
Zero Gate Voltage Drain Current	V _{DS} = -20V, V _{GS} =0V	I _{DSS}	--	-0.1	-1	μA
	V _{DS} = -20V, T _J =65°C		--	--	-10	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = -4.5V, I _D = -3A	R _{DS(on)}	--	80	90	mΩ
	V _{GS} = -2.5V, I _D = -2A		--	100	125	
	V _{GS} = -1.8V, I _D = -1A		--	135	180	
Forward Transconductance (Note 2)	V _{DS} = -10V, I _D = -1A	g _{fs}	--	2.2	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = -15V, I _D = - 3A, V _{GS} = -4.5V	Q _g	--	9.5	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	2.0	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	3.0	--	
Input Capacitance	V _{DS} = -15V, V _{GS} = 0V, F= 1.0MHz	C _{iss}	--	365	--	pF
Output Capacitance		C _{oss}	--	75	--	
Reverse Transfer Capacitance		C _{rss}	--	50	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DS} = -15V, I _D = - 3A, V _{GS} = -10V, R _G = 6Ω	t _{d(on)}	--	8	--	nS
Rise Time (Note 3)		t _r	--	22	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	60	--	
Fall Time (Note 3)		t _f	--	12	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _F = -1A	V _{SD}	--	-0.8	-1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	-3	A
Pulsed Current (Note 1)		I _{SM}	--	--	-10	A

Notes:

1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS

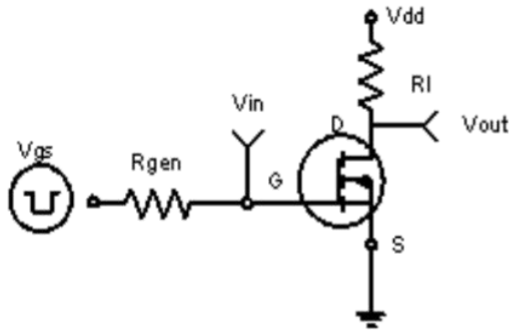


Figure 1: Switching Test Circuit

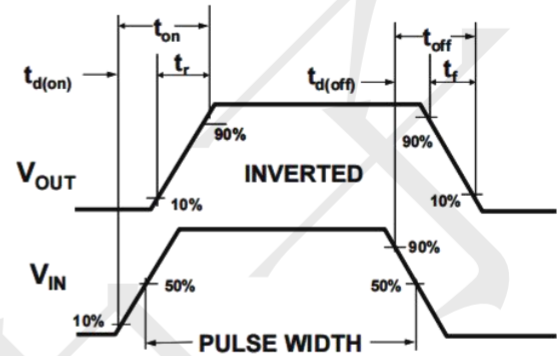


Figure 2: Switching Waveforms

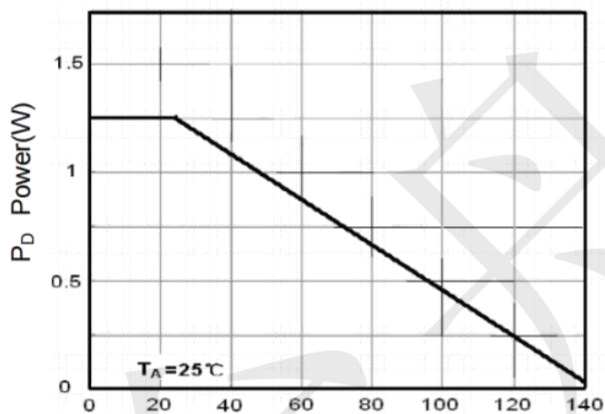


Figure 3 Power Dissipation

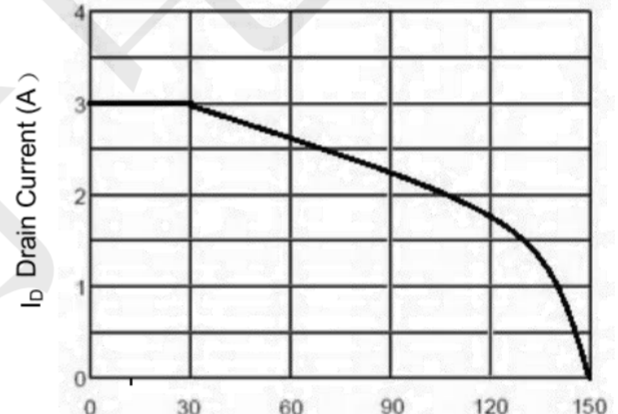


Figure 4 Drain Current

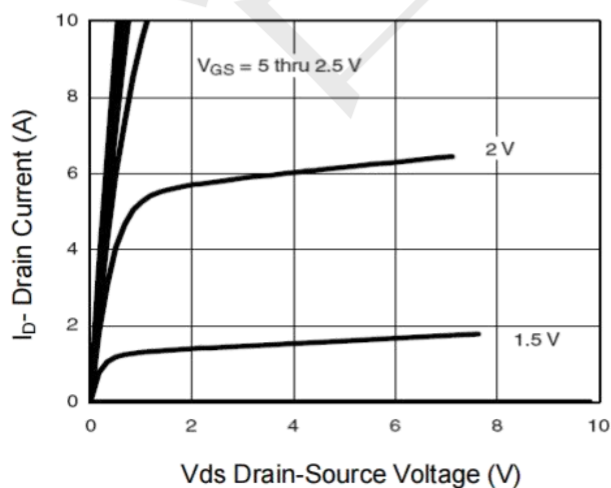


Figure 5 Output Characteristics

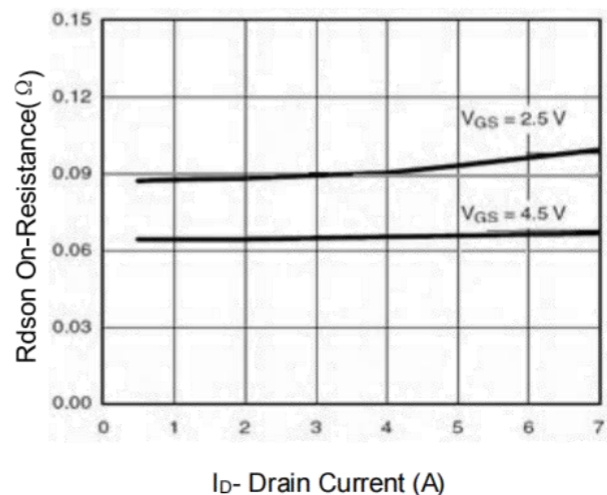
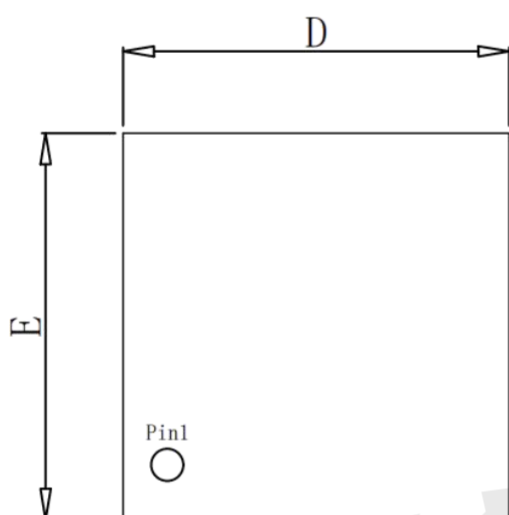


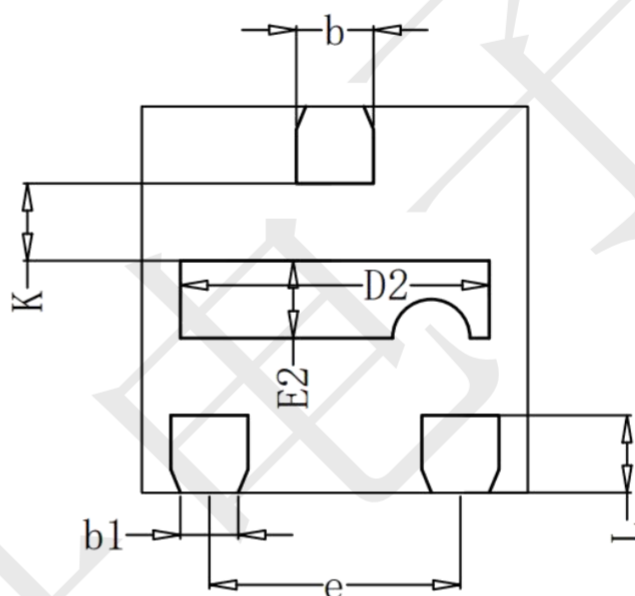
Figure 6 Drain-Source On-Resistance

Package Outline Dimensions

DFN1X1-3L



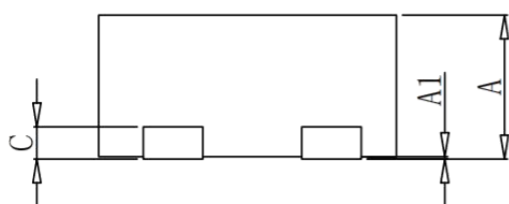
Top View



Bottom View



Side View



Side View

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	--	0.02	0.05
b	0.15	0.20	0.25
b1	0.150 REF.		
c	0.100 REF.		
D	0.95	1.00	1.05
D2	0.75	0.80	0.85
e	0.65 BSC		
E	0.95	1.00	1.05
E2	0.15	0.20	0.25
L	0.15	0.20	0.25
K	0.20 TYP		