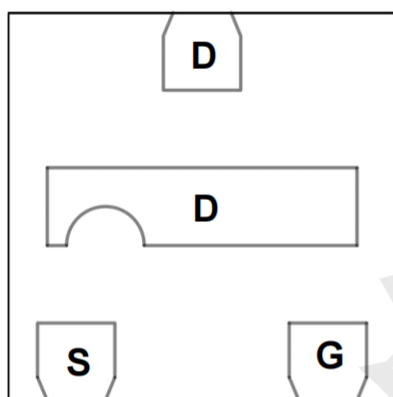


Product Summary

- 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

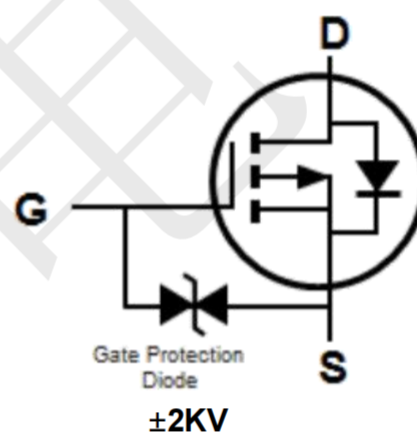


DFN1X1-3L

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	$V_{GS}=0V, I_D= -250\mu A$	BV_{DSS}	-20	--	--	V
Gate-Source Threshold Voltage	$V_{DS}=V_{GS}, I_D= -250\mu A$	$V_{GS(th)}$	-0.35	-0.7	-1.1	V
Gate-Source Leakage	$V_{DS}=0V, V_{GS}= \pm 10V$	I_{GSS}	--	--	± 20	μA
Zero Gate Voltage Drain Current	$V_{DS}= -20V, V_{GS}=0V$	I_{DSS}	--	-0.1	-1	μA
	$V_{DS}= -20V, T_J=65^{\circ}C$		--	--	-10	μA
Drain-Source On-State Resistance (Note 1)	$V_{GS}= -4.5V, I_D= -3A$	$R_{DS(on)}$	--	80	90	m Ω
	$V_{GS}= -2.5V, I_D= -2A$		--	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)	$V_{DS}= -15V,$ $I_D= -3A,$ $V_{GS}= -10V,$ $R_G= 6\Omega$	$t_{d(on)}$	--	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

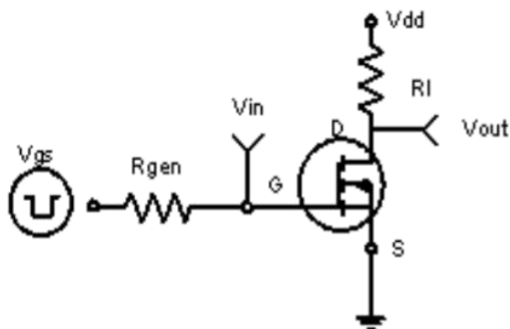


Figure 1: Switching Test Circuit

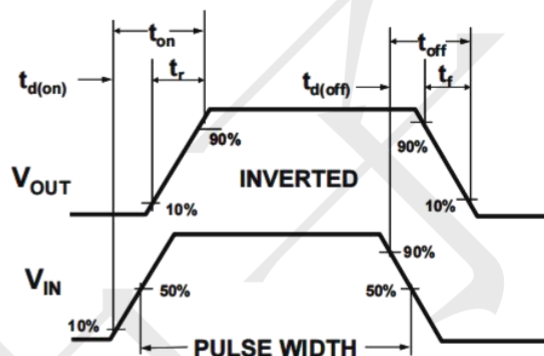
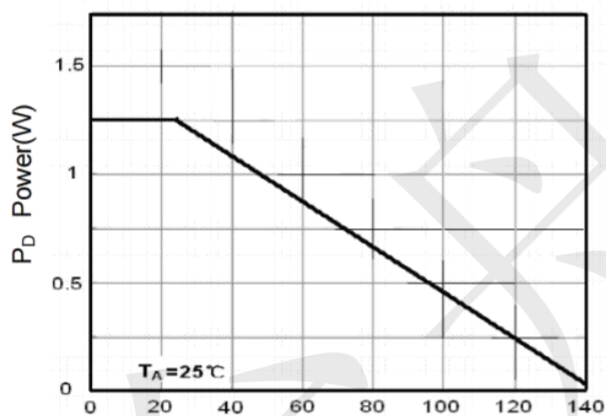
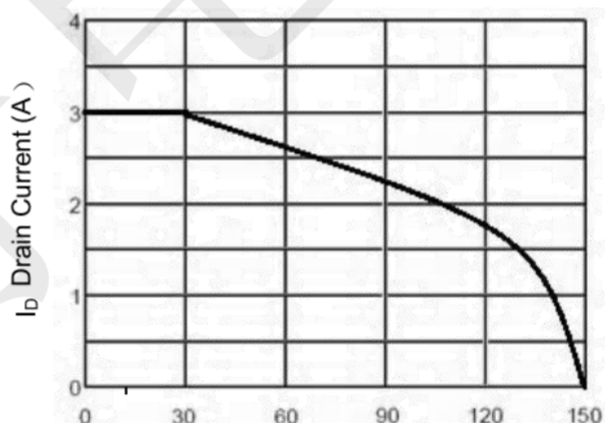


Figure 2: Switching Waveforms



T_J-Junction Temperature(°C)

Figure 3 Power Dissipation



T_J-Junction Temperature(°C)

Figure 4 Drain Current

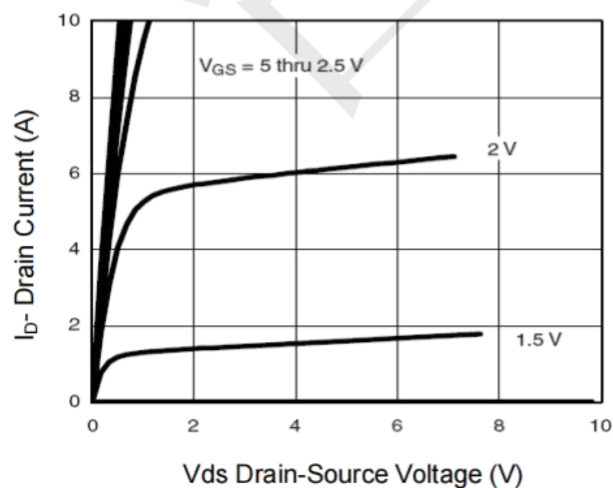


Figure 5 Output Characteristics

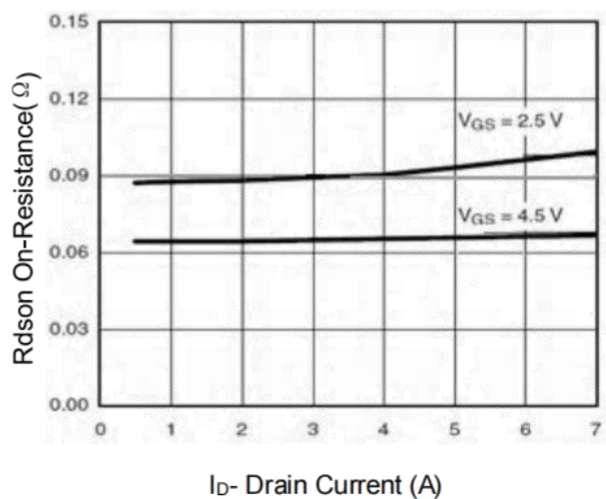
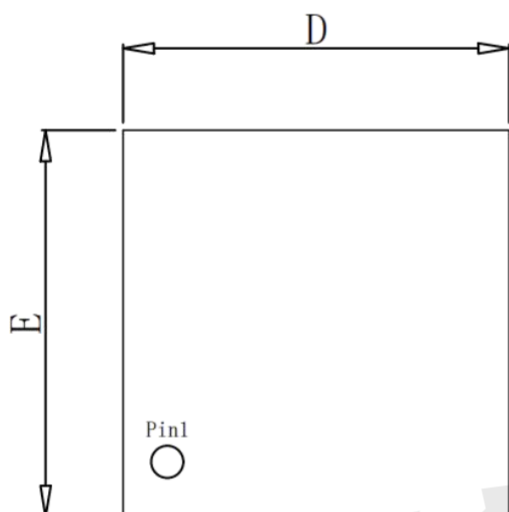


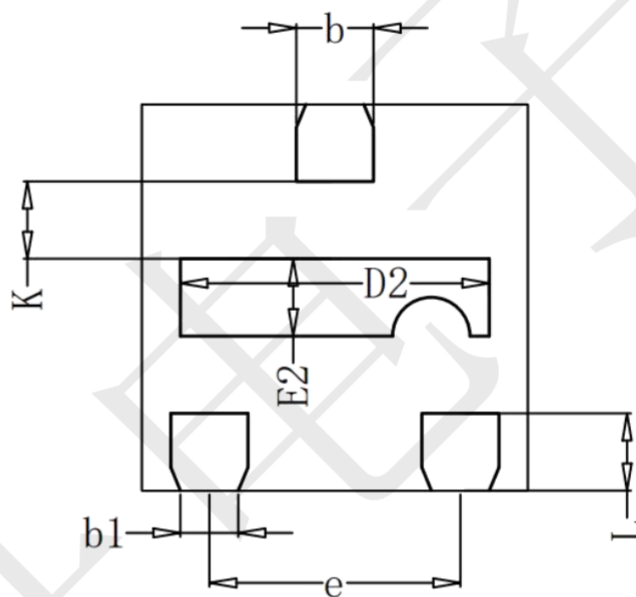
Figure 6 Drain-Source On-Resistance

Package Outline Dimensions

DFN1X1-3L



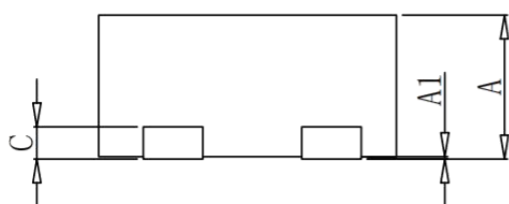
Top View



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		