Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	400mΩ@-4.5V	-0.75A
	550mΩ@-2.5V	

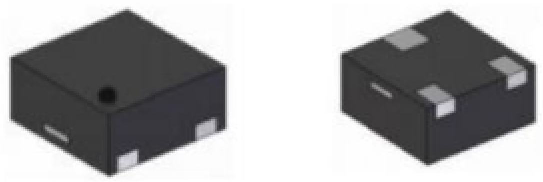
Feature

- Surface Mount Package
- P-Channel Switch with Low RDS(on)
- Operated at Low Logic Level Gate Drive
- ESD Protected

Applications

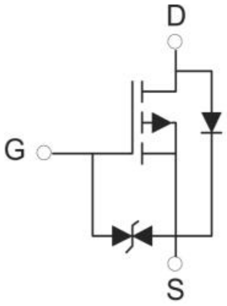
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics

Package

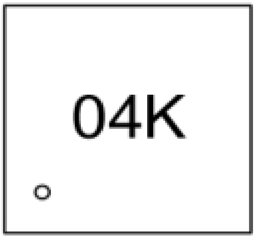


PDFN1212-3L

Circuit diagram



Marking



04K =Device Code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current (T_A=25℃, silicon limited)	I_D	-0.75	A
Continuous Drain Current (T_A=25℃, Package limited)	I_D	-0.6	A
Continuous Drain Current (T_A=100℃, silicon limited)	I_D	-0.5	A
Pulsed Drain Current	I_{DM}	-3	A
Power Dissipation	P_D	0.42	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	297	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	$T_{STG,,}$	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

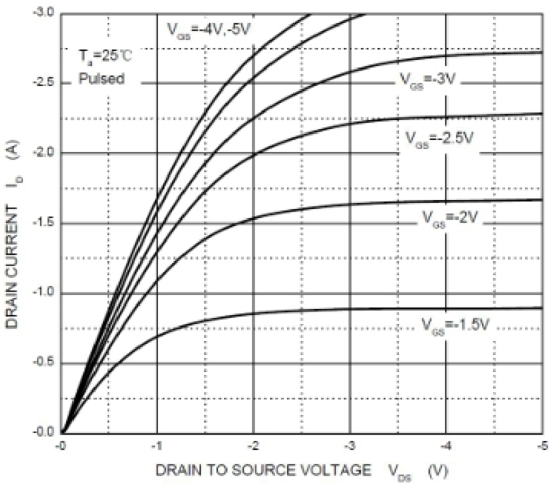
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V, V_{GS} = 0V			-1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±10	uA
Gate threshold voltage (1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.35	-0.65	-1	V
Drain-source on-resistance (1)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-0.5A		0.4	0.55	Ω
		V_{GS} =-2.5V, I_D =-0.2A		0.55	0.7	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=-16V, V_{GS}=0V, f=1MHz		113		pF
Output capacitance	C_{oss}			15		
Reverse transfer capacitance	C_{rss}			9		
Turn-on Delay Time	$T_{d(on)}$	V_{DS}=-10V, I_D =200mA , V_{GS}=-4.5V, R_{GEN} =10Ω		9		nS
Turn-on Rise Time	T_r			5.7		
Turn-Off Delay Time	$T_{d(off)}$			32.6		
Turn-Off Fall Time	t_f			20.3		
Source-Drain Diode Characteristics						
Diode Forward voltage	V_{SD}	I_S=-0.5A, V_{GS} = 0V			-1.2	V

Notes:

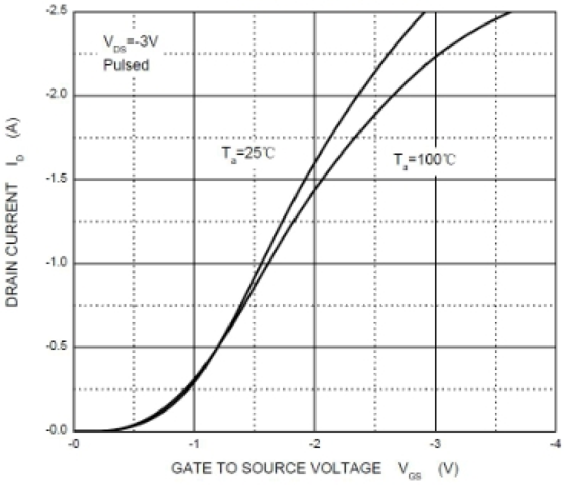
1. Pulse Test: Pulse Width < 300μs, Duty Cycle ≤2%.

2. Guaranteed by design, not subject to production testing.

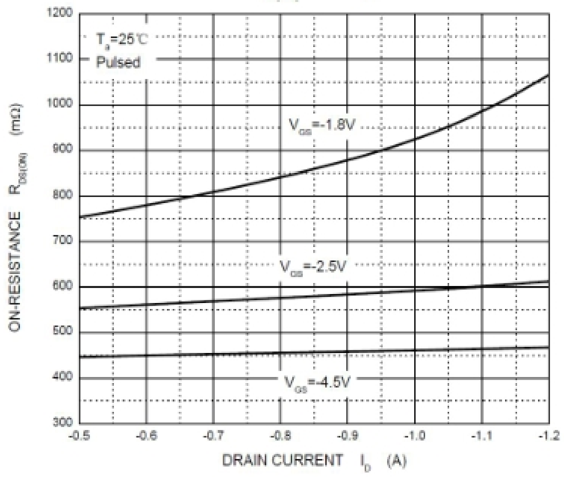
Typical Characteristics



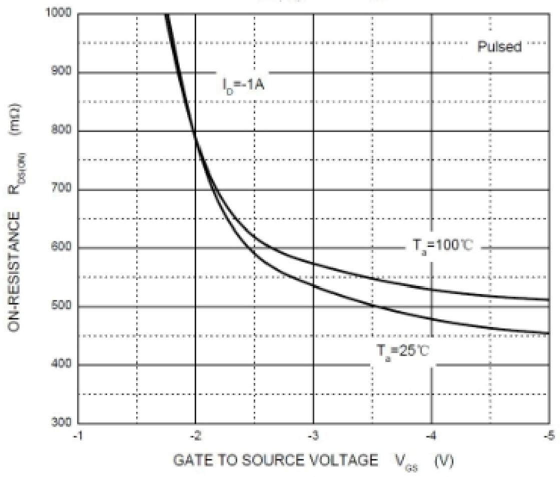
Output Characteristics



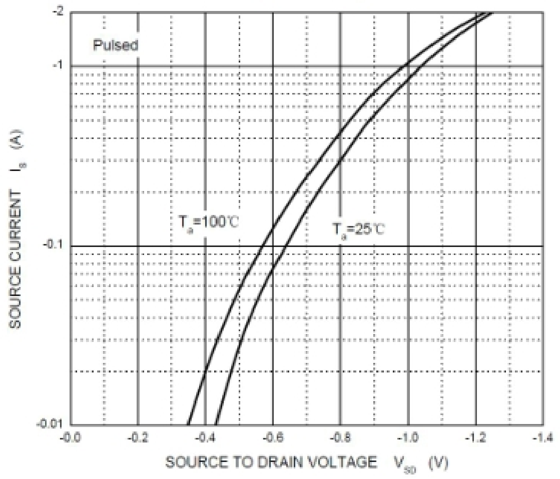
Transfer Characteristics



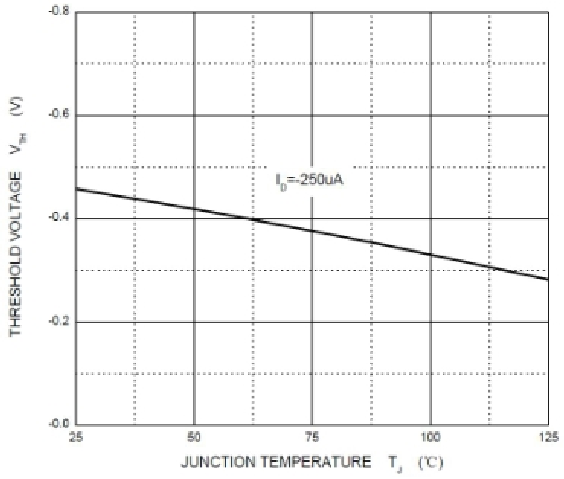
$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$ —— V_{GS}

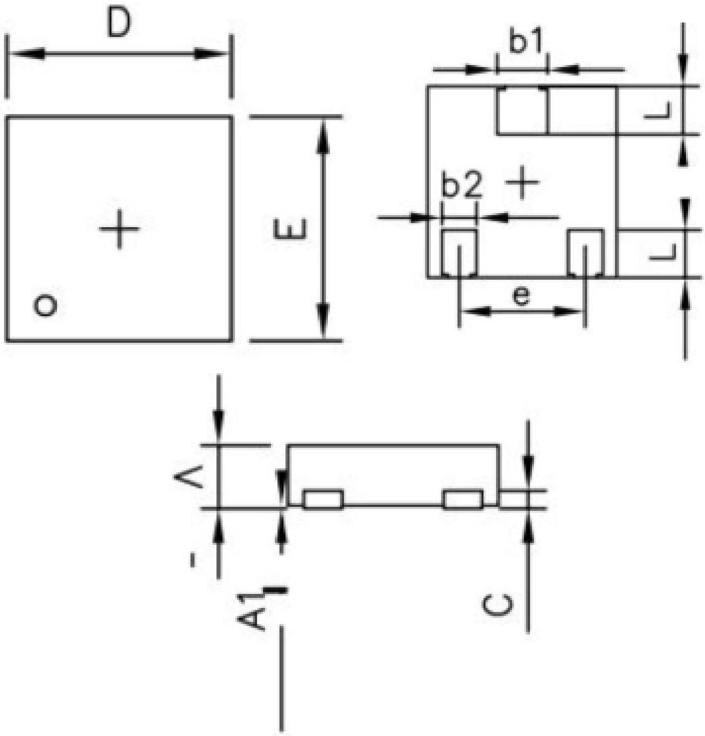


I_S —— V_{SD}



Threshold Voltage

PDFN1212-3L Package Information



PDFN1212-3L POD			
Dimension Symbol	Min(mm)	TYP(mm）	Max（mm）
A	0.45	0.50	0.55
A1	0.00	0.03	0.05
C		0.152	
b1	0.27	0.32	0.37
L	0.25	0.30	0.35
D	1.15	1.20	1.25
e		0.80	
E	1.15	1.20	1.25
b2	0.17	0.22	0.27