PDFN3x3

N沟道30V/80A功率MOS管
30V/80A N Channel Advanced Power MOSFET

Product Summary 产品概述	
VDS	30V
ID	80A
RDSON (Typ@10V)	3.0mΩ
RDSON(Typ@4.5V)	4.3mΩ

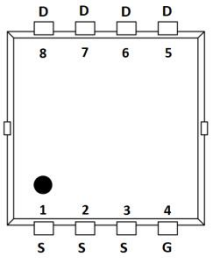
Features特征

- Very Low Rds(on)极低的导通电阻
- Low Gate Charge低栅极电荷
- High Current Capability 大电流能力
- Halogen-free、RoHS Compliant 无卤、RoHS认证

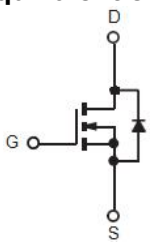
Applications应用

- DC/DC Converters in Computing, Servers用于计算机、服务器的直流/直流转换
- Load Switch for PWM脉冲宽度调制器中的负载开关
- Isolated DC/DC Converters in Telecom and Industrial隔离用直流/直流转换
- Charging Switch for Portable Devices便携式设备充电开关

Pin Definition 脚位定义



Equivalent circuit 等效电路



Order Information订货信息

Product型号	Marking印字	Package封装	Packing包装规格	Min Unit Quantity最小包装数量
XT04R0N03A	XZT04R0N03A	PDFN3x3	5000 PCS/Reel	5000 PCS

Maximum Ratings & Thermal Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified.)

极限值和温度特性(TA = 25℃ 除非另有规定)

Parameters参数	Symbol符号	Value数值	Unit单位
Drain-Source Voltage漏源电压	V_{DS}	30	V
Gate-Source Voltage栅源电压	V_{GS}	±20	V
Continuous Drain Current T=25℃漏极连续电流	I_D	80	A
Pulsed Drain Current (note 1)漏极脉冲电流	I_{DM}	320	A
Maximum Power Dissipation T=25℃最大功耗	P_D	40	W
Avalanche Energy, Single Pulsed(note 2)单脉冲雪崩能量	E_{AS}	125	mJ
Thermal Resistance from Junction to Ambient (note 2)结环热阻	$R_{\theta JA}$	83.3	℃/W
Thermal Resistance from Junction to Case (note 2)结壳热阻	$R_{\theta Jc}$	3.1	℃/W
Maximum Junction Temperature最大结温	T_J	150	℃
Junction and Storage Temperature存储温度	T_{STG}	-55~+150	℃

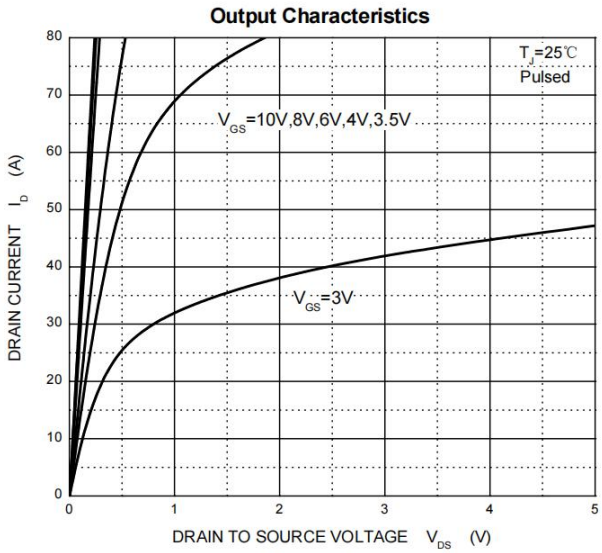
Electrical Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified).
电特性 (TA = 25℃ 除非另有规定)

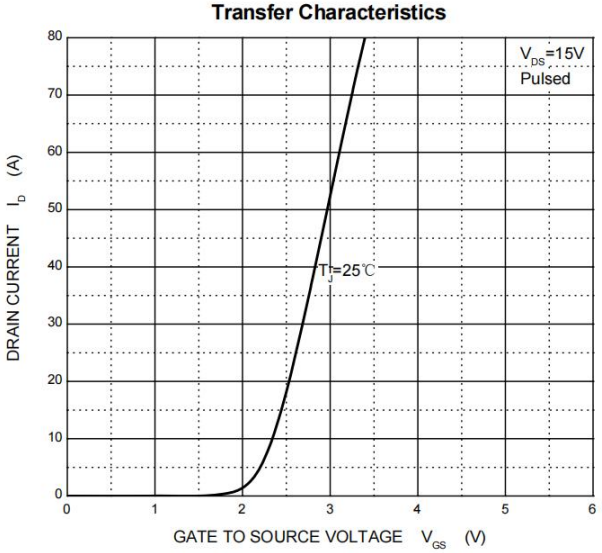
Parameters 参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Static Characteristics静态特性						
Drain-source breakdown voltage 漏源击穿电压	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30	--	--	V
Zero gate voltage drain current 零栅压漏极电流	I_{DSS}	V_{DS} = 30V,V_{GS} = 0V	--	--	1	μA
Gate-body leakage current 栅源漏电流	I_{GSS}	V_{GS} = ± 20V, V_{DS} = 0V	--	--	±100	nA
Gate threshold voltage (note 3) 栅源阈值电压	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = 250μA	1.0	1.7	2.5	V
Drain-source on-resistance (note 3) 漏源极导通电阻	$R_{DS(on)}$	V_{GS} = 10V, I_D = 20A	--	3.0	4.0	mΩ
		V_{GS} = 4.5V, I_D = 20A	--	4.3	7.3	mΩ
正向跨导Forward Transconductance	G_{FS}	V_{DS} = 10V, I_D = 10A		24		S
源极漏电流(体二极管) Source drain current(Body Diode)	I_{SD}	T_C=25℃	--	--	80	A
二极管正向电压 Diode forward voltage (note 3)	V_{SD}	I_S= 20A, V_{GS} = 0V	--	--	1	V
Dynamic Characteristics 动态特性						
Input Capacitance输入电容	Ciss	V_{DS}= 15V,V_{GS}=0V, f =1MHz	--	3386	--	pF
Output Capacitance输出电容	Coss		--	420	--	pF
Reverse Transfer Capacitance 反向传输电容	Crss		--	340	--	pF
Gate Resistance栅极电阻	R_g	f=1MHz		2.2		Ω
Total Gate Charge总栅极电荷	Q_g	V_{DS}= 25V,I_D=14A, V_{GS}=10V	--	61	--	nC
Gate-Source Charge栅源电荷	Qgs		--	4.8	--	nC
Gate-Drain Charge栅漏电荷	Qgd		--	21	--	nC
Switching Characteristics开关特性						
Turn-on delay time开启延迟时间	td(on)	V_{DD}= 15V,R_L=0.75Ω,R_G=3Ω, V_{GS}= 10V	--	18	--	ns
Turn-on rise time开启上升沿时间	tr		--	45	--	ns
Turn-off delay time关断延迟时间	td(off)		--	57	--	ns
Turn-off fall time关断下降沿时间	tf		--	16.1	--	ns

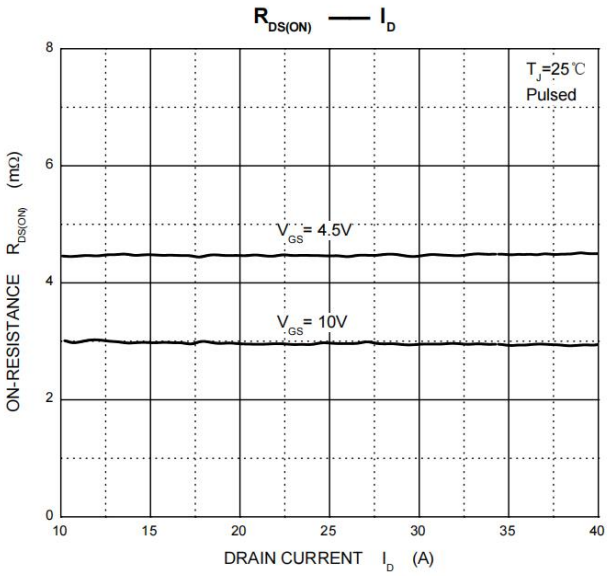
***Notes :**

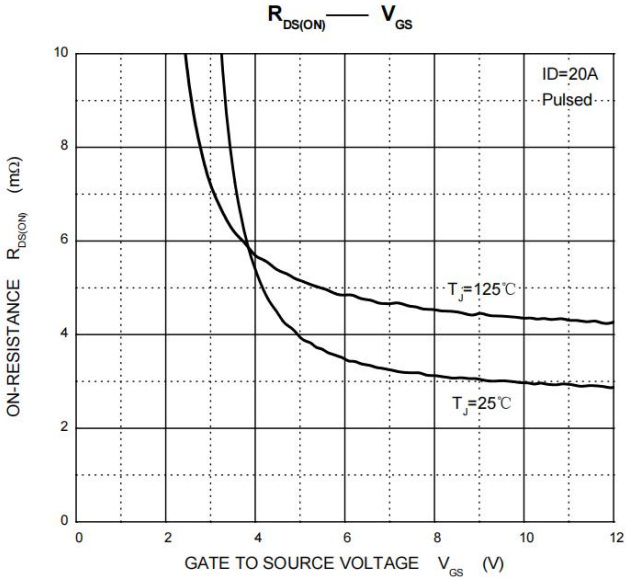
1. Pulse width limited by maximum allowable junction temperature.
2. Limited by TJmax, Part not recommended for use above this value.
3. Pulse test : Pulse width≤300μs, duty cycle≤2%.

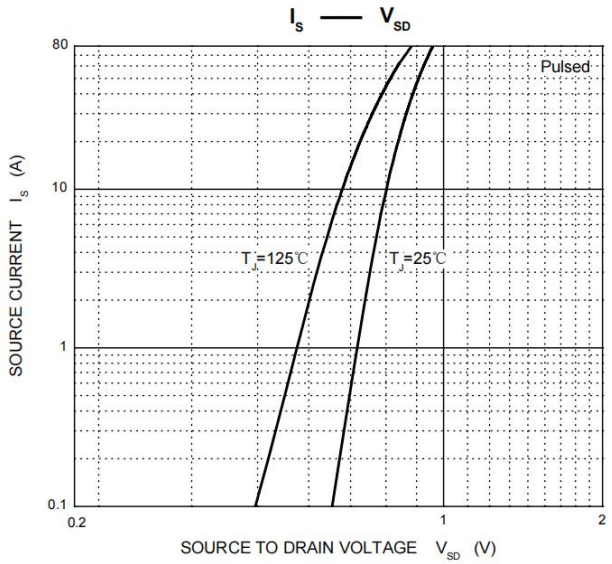
Typical characteristics典型特性曲线

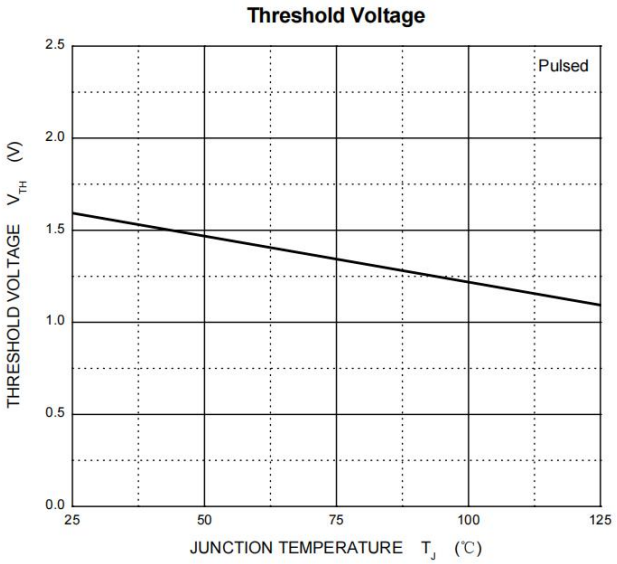


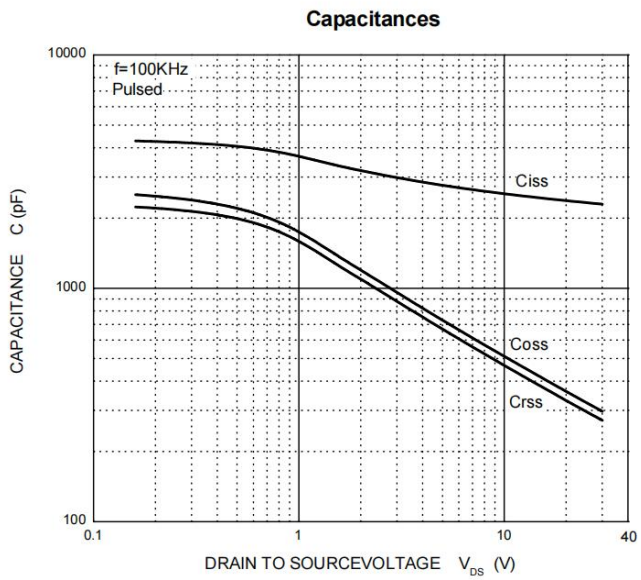


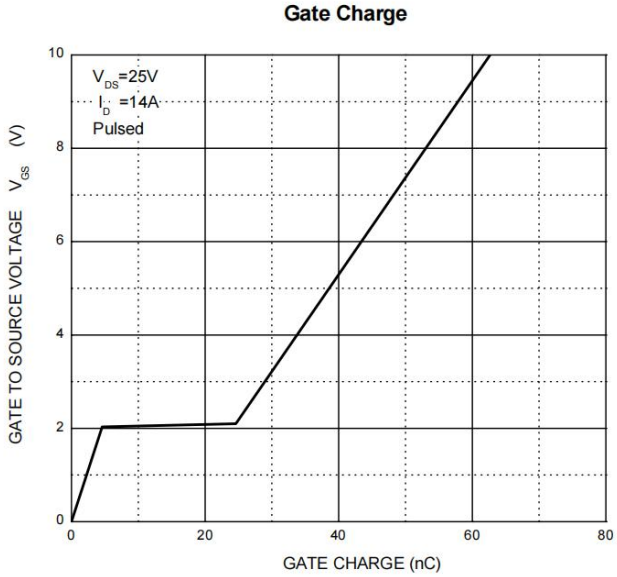




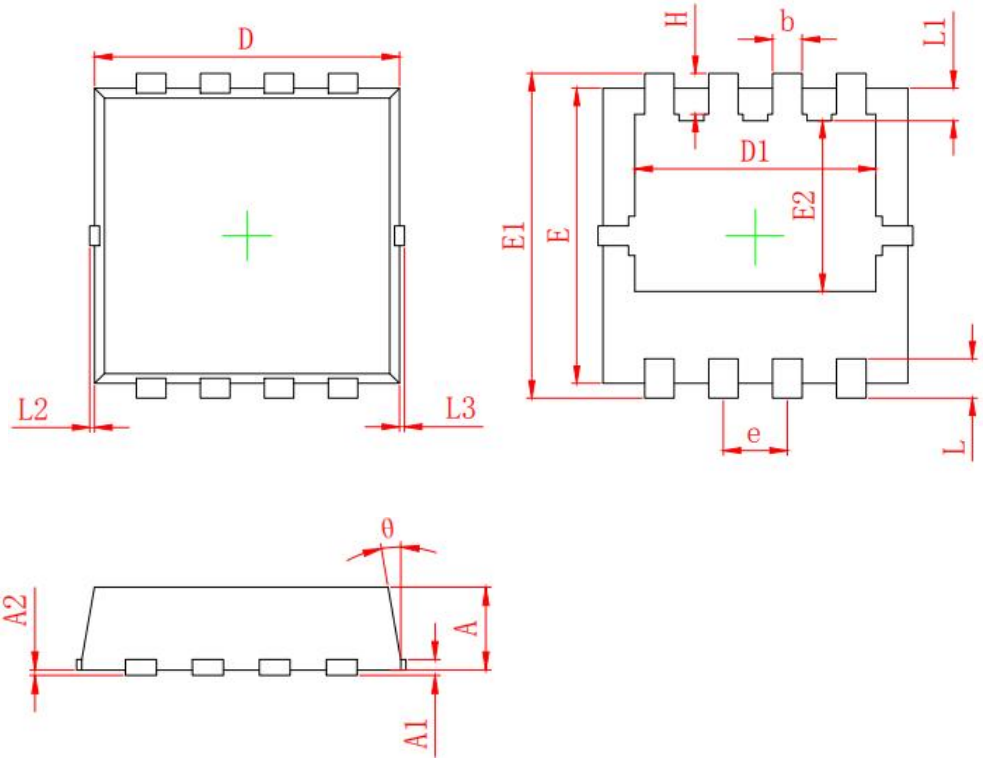

I_S —— V_{SD}
Pulsed
T_J=125℃
T_J=25℃
SOURCE CURRENT I_S (A)
SOURCE TO DRAIN VOLTAGE V_{SD} (V)
80
10
1
0.1
0.2
1
2


Threshold Voltage
Pulsed
THRESHOLD VOLTAGE V_{TH} (V)
JUNCTION TEMPERATURE T_J (℃)
2.5
2.0
1.5
1.0
0.5
0.0
25
50
75
100
125


Capacitances
f=100KHz
Pulsed
Ciss
Coss
Crss
CAPACITANCE C (pF)
DRAIN TO SOURCEVOLTAGE V_{DS} (V)
10000
1000
100
0.1
1
10
40


Gate Charge
V_{DS}=25V
I_D =14A
Pulsed
GATE TO SOURCE VOLTAGE V_{GS} (V)
GATE CHARGE (nC)
10
8
6
4
2
0
0
20
40
60
80

PDFN3x3 Package Outline Dimensions封装外形图



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.700	0.900
A1	0.152 REF.	
A2	0~0.05	
D	3.000	3.200
D1	2.300	2.600
E	2.900	3.100
E1	3.150	3.450
E2	1.535	1.935
b	0.200	0.400
e	0.550	0.750
L	0.300	0.500
L1	0.180	0.480
L2	0~0.100	
L3	0~0.100	
H	0.315	0.515
θ	8°	12°