



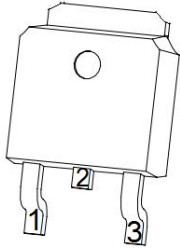
Product Summary 产品概述	
VDS	30V
ID	50A
RDSON (Typ@10V)	6.0mΩ
RDSON(Typ@4.5V)	9.5mΩ

Features 特征

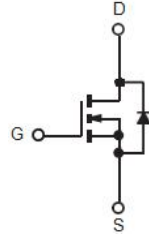
- Low Rds(on)@V_{GS}= 10V 低的导通电阻
- 100% UIS Tested 100%雪崩能量测试
- Halogen-free、RoHS Compliant 无卤、RoHS认证

Applications 应用

- Battery Protection and Load Switch 电源保护和负载开关
- Voltage Regulator Modules 电压调节模块
- Point-of-Load (POL) Modules 负载点模块
- Brushed and Brushless Motor Control 有刷/无刷马达控制

Pin Definition 脚位定义

1. Gate
2. Drain
3. Source

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
XT10R0N03C	XZT10R0N03C	TO-252	2500 PCS/Reel	2500 PCS

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

极限值和温度特性(T_A = 25°C 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 漏极连续电流	I _D	50	A
Pulsed Drain Current (note 1) 漏极脉冲电流	I _{DM}	200	A
Maximum Power Dissipation 最大功耗	P _D	50	W
Avalanche Energy, Single Pulsed (note 2) 单脉冲雪崩能量	E _{AS}	80	mJ
Thermal Resistance from Junction to Ambient 结环热阻	R _{θJA}	100	°C/W
Thermal Resistance from Junction to Case (note 2) 结壳热阻	R _{θJC}	2.5	°C/W
Maximum Junction Temperature 最大结温	T _J	150	°C
Junction and Storage Temperature 存储温度	T _{STG}	-50~+150	°C

**Electrical Characteristics** (Ratings at 25°C ambient temperature unless otherwise specified).

电特性 (TA = 25°C 除非另有规定)

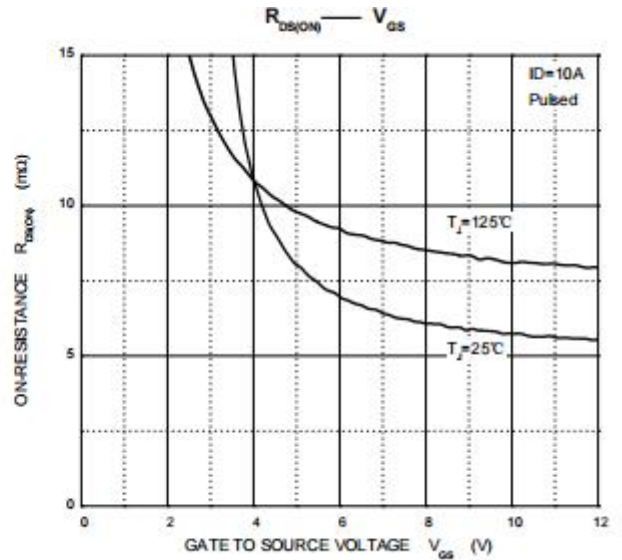
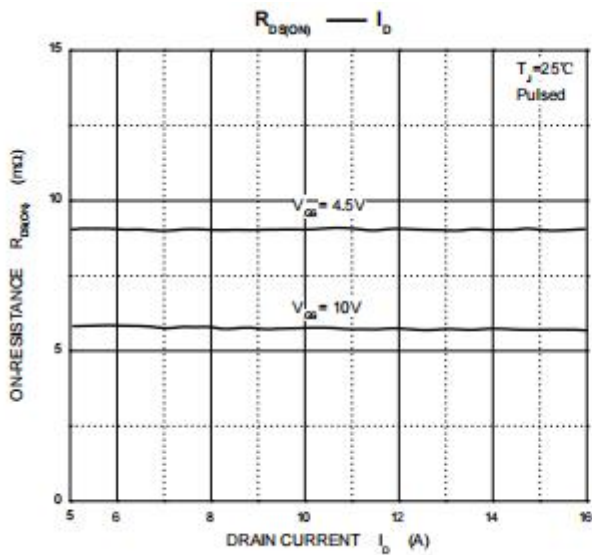
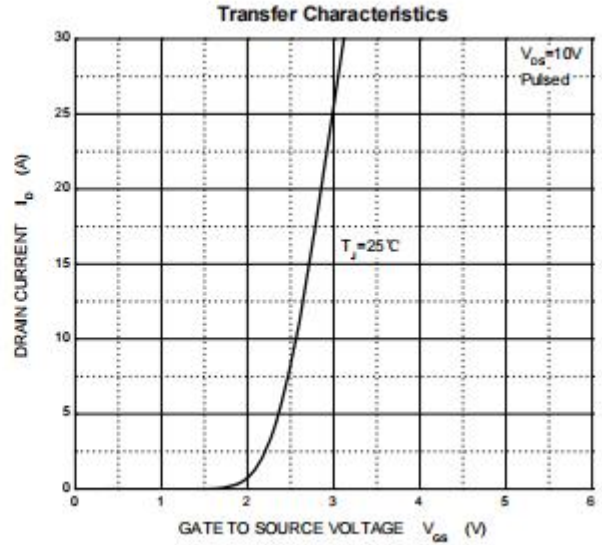
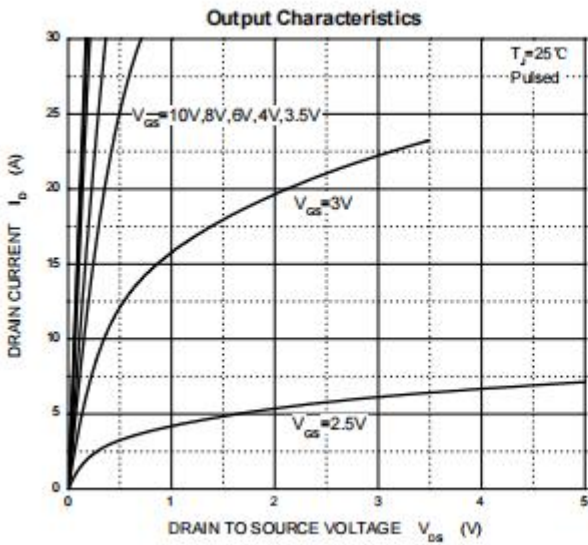
Parameters 参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Static Characteristics 静态特性						
Drain-source breakdown voltage 漏源击穿电压	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30	--	--	V
Zero gate voltage drain current 零栅压漏极电流	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$	--	--	1	μA
Gate-body leakage current 栅源漏电流	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	--	--	± 100	nA
Gate threshold voltage (note 3) 栅源阈值电压	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.5	2.5	V
Drain-source on-resistance (note 3) 漏源极导通电阻	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$	--	6.0	10	m Ω
		$V_{GS} = 4.5V, I_D = 10A$	--	9.5	15	m Ω
正向跨导 Forward Transconductance	G_{FS}	$V_{DS} = 10V, I_D = 10A$	--	10	--	S
源极漏电流(体二极管) Source drain current(Body Diode)	I_{SD}	$T_C = 25^\circ C$	--	--	40	A
二极管正向电压 Diode forward voltage (note 3)	V_{SD}	$I_S = 20A, V_{GS} = 0V$	--	--	1.2	V
Dynamic Characteristics 动态特性						
Input Capacitance 输入电容	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V,$ $f = 1MHz$	--	1310	--	pF
Output Capacitance 输出电容	C_{oss}		--	150	--	pF
Reverse Transfer Capacitance 反向传输电容	C_{rss}		--	124	--	pF
Gate Resistance 栅极电阻	R_g	$f = 1MHz$	--	2.2	--	Ω
Total Gate Charge 总栅极电荷	Q_g	$V_{DS} = 15V, I_D = 9A,$ $V_{GS} = 10V$	--	41	--	nC
Gate-Source Charge 栅源电荷	Q_{gs}		--	5.2	--	nC
Gate-Drain Charge 栅漏电荷	Q_{gd}		--	9.0	--	nC
Switching Characteristics 开关特性						
Turn-on delay time 开启延迟时间	$t_d(on)$	$V_{DD} = 15V, R_L = 1.8\Omega,$ $R_G = 3\Omega,$ $V_{GS} = 10V$	--	9	--	ns
Turn-on rise time 开启上升沿时间	t_r		--	36	--	ns
Turn-off delay time 关断延迟时间	$t_d(off)$		--	35	--	ns
Turn-off fall time 关断下降沿时间	t_f		--	8.0	--	ns

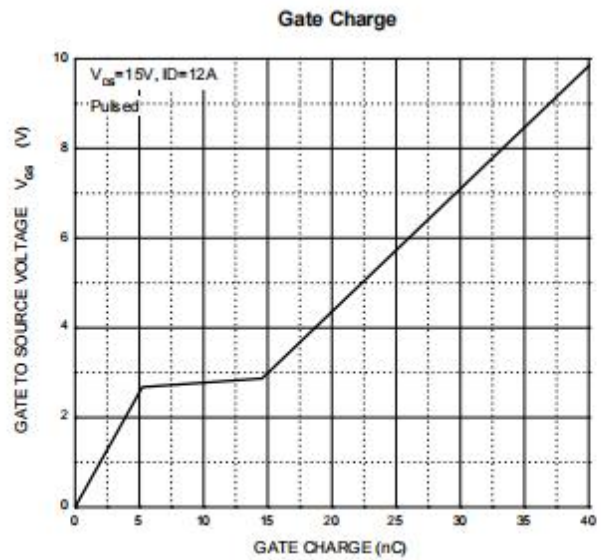
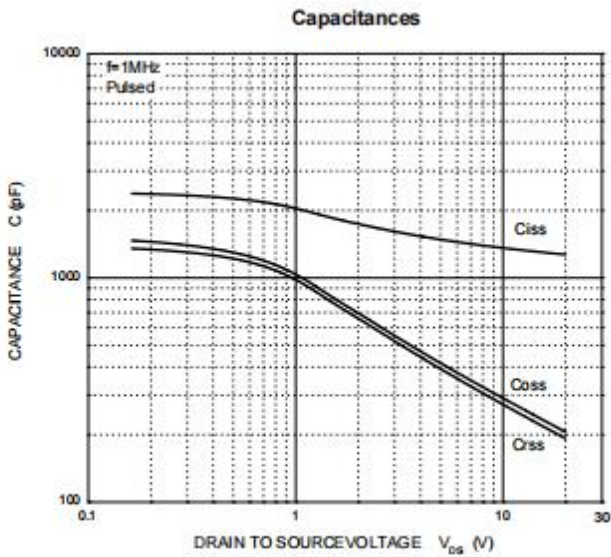
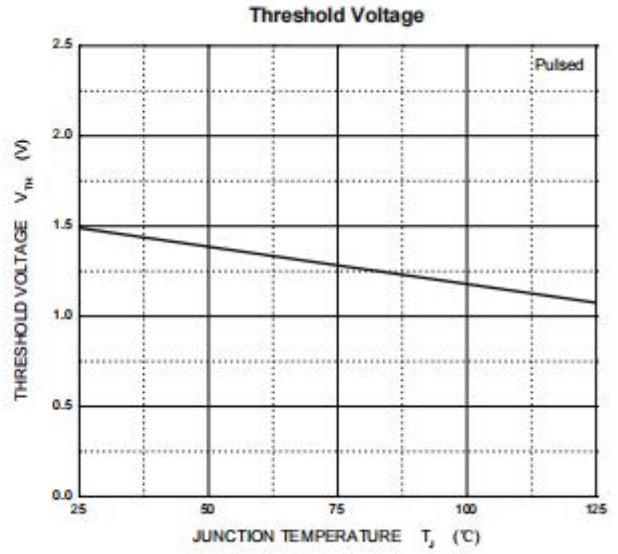
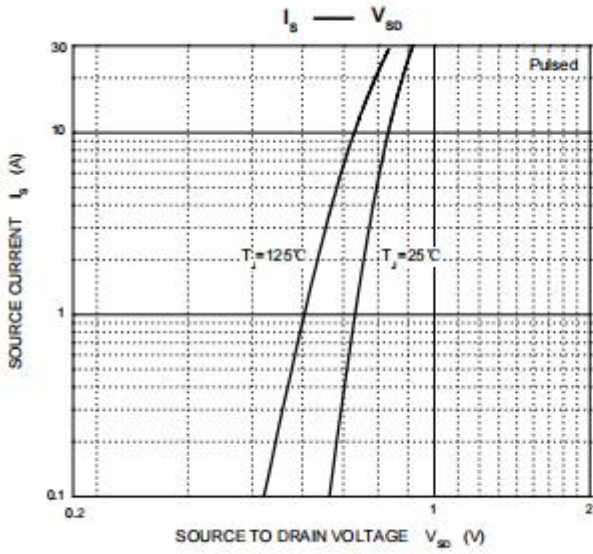
***Notes :**

- Pulse width limited by maximum allowable junction temperature.
- Limited by T_{Jmax} , starting $T_J = 25^\circ C, L = 0.5mH, R_G = 25\Omega, V_{DD} = 15V, V_{GS} = 10V$. Part not recommended for use above this value.
- Pulse test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.



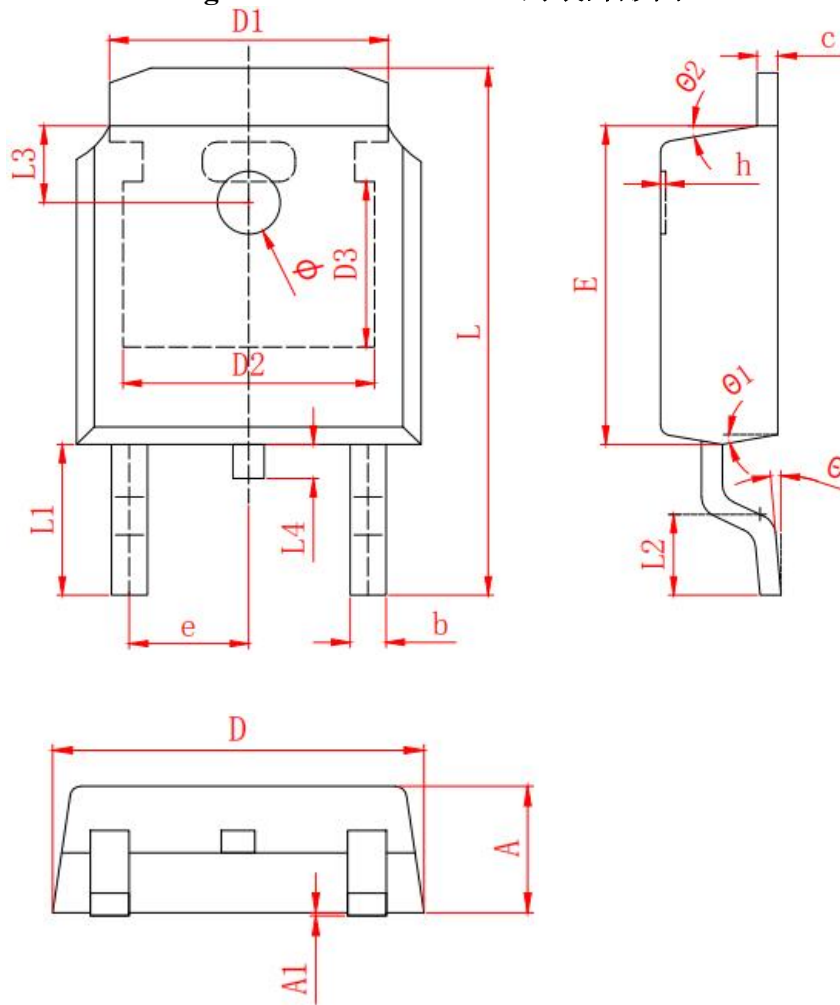
Typical characteristics 典型特性曲线







TO-252 Package Outline Dimensions 封装外形图



SYMBOL	MILLIMETER		SYMBOL	MILLIMETER	
	MIN	MAX		MIN	MAX
A	2.200	2.400	h	0.000	0.200
A1	0.000	0.127	L	9.900	10.30
b	0.640	0.740	L1	2.888 REF	
c	0.460	0.580	L2	1.400	1.700
D	6.500	6.700	L3	1.600 REF	
D1	5.334 REF		L4	0.600	1.000
D2	4.826 REF		phi	1.100	1.300
D3	3.166 REF		theta	0°	8°
E	6.000	6.200	theta 1	9° TYP2	
e	2.286 TYP		theta 2	9° TYP	