

PDFN3.3X3.3-8 N Channel Enhancement 沟道增强型 MOS Field Effect Transistor 场效应管

■Features 特点

Low on-resistance 低导通电阻

$R_{DS(ON)}=11m\Omega(\text{Type})@V_{GS}=-10V$

$R_{DS(ON)}=18m\Omega(\text{Type})@V_{GS}=-4.5V$

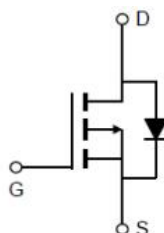
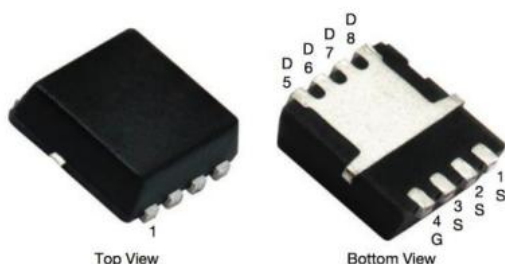
■Applications 应用

Load Switch 负载开关

Motor Drives 马达驱动

Power Management 电源管理

■Internal Schematic Diagram 内部结构



■Absolute Maximum Ratings 最大额定值

Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
Drain-Source Voltage 漏极-源极电压	BV_{DSS}	-30	V
Gate- Source Voltage 栅极-源极电压	V_{GS}	± 20	V
Drain Current (continuous)漏极电流-连续	I_D (at $TC = 25^\circ C$ at $TC = 100^\circ C$)	-39 -25	A
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	-70	A
Total Device Dissipation 总耗散功率	$P_{TOT}(\text{at } TC = 25^\circ C)$	32.9	W
Avalanche Energy(Single Pulse)雪崩能量	E_{AS}	81	mJ
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	38	$^\circ C/W$
Junction/Storage Temperature 结温/储存温度	T_J, T_{stg}	-55~150	$^\circ C$

■ Electrical Characteristics 电特性

 (T_A=25℃ unless otherwise noted 如无特殊说明, 温度为 25℃)

Characteristic 特性参数	Symbol 符号	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Drain-Source Breakdown Voltage 漏极-源极击穿电压(I _D = -250uA, V _{GS} =0V)	BV _{DSS}	-30	—	—	V
Gate Threshold Voltage 栅极开启电压(I _D = -250uA, V _{GS} = V _{DS})	V _{GS(th)}	-1.3	-1.8	-2.3	V
Zero Gate Voltage Drain Current 零栅压漏极电流(V _{GS} =0V, V _{DS} = -24V)	I _{DSS}	—	—	-1	μA
Gate Body Leakage 栅极漏电流(V _{GS} =±20V, V _{DS} =0V)	I _{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance 静态漏源导通电阻(I _D = -20A, V _{GS} = -10V) (I _D = -10A, V _{GS} = -4.5V)	R _{DS(ON)}	—	11 18	14 24	mΩ
Diode Forward Voltage Drop 内附二极管正向压降(I _{SD} = -1A, V _{GS} =0V)	V _{SD}	—	-0.7	-1	V
Input Capacitance 输入电容 (V _{GS} =0V, V _{DS} = -15V, f=1MHz)	C _{ISS}	—	1380	—	pF
Common Source Output Capacitance 共源输出电容(V _{GS} =0V, V _{DS} = -15V, f=1MHz)	C _{OSS}	—	280	—	pF
Reverse Transfer Capacitance 反馈电容 (V _{GS} =0V, V _{DS} = -15V, f=1MHz)	C _{RSS}	—	217	—	pF
Total Gate Charge 栅极电荷密度 (V _{DS} = -15V, I _D = -20A, V _{GS} = -10V)	Q _g	—	30	—	nC
Gate Source Charge 栅源电荷密度 (V _{DS} = -15V, I _D = -20A, V _{GS} = -10V)	Q _{gs}	—	2	—	nC
Gate Drain Charge 栅漏电荷密度 (V _{DS} = -15V, I _D = -20A, V _{GS} = -10V)	Q _{gd}	—	1	—	nC
Turn-ON Delay Time 开启延迟时间 (V _{DS} = -15V I _D = -1A, R _{GEN} =6Ω, V _{GS} = -10V)	t _{d(on)}	—	11	—	ns
Turn-ON Rise Time 开启上升时间 (V _{DS} = -15V I _D = -1A, R _{GEN} =6Ω, V _{GS} = -10V)	t _r	—	12	—	ns
Turn-OFF Delay Time 关断延迟时间 (V _{DS} = -15V I _D = -1A, R _{GEN} =6Ω, V _{GS} = -10V)	t _{d(off)}	—	101	—	ns
Turn-OFF Fall Time 关断下降时间 (V _{DS} = -15V I _D = -1A, R _{GEN} =6Ω, V _{GS} = -10)	t _f	—	60	—	ns

■ Typical Characteristic Curve 典型特性曲线

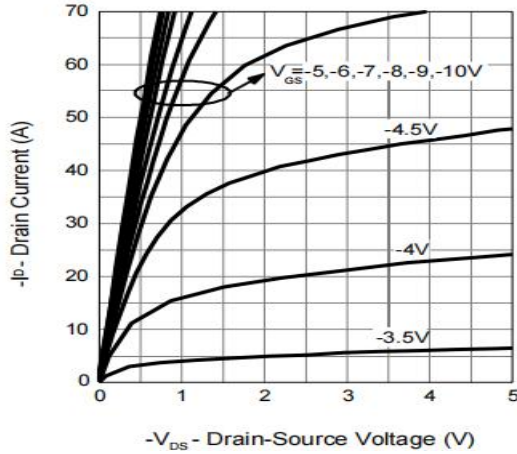


Figure 1: Output Characteristics

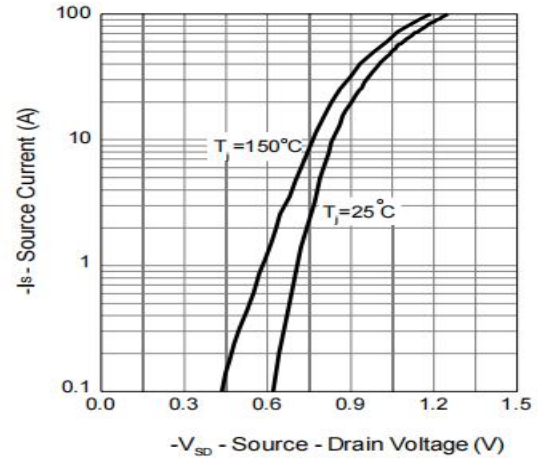


Figure 2: Diode Forward Characteristics

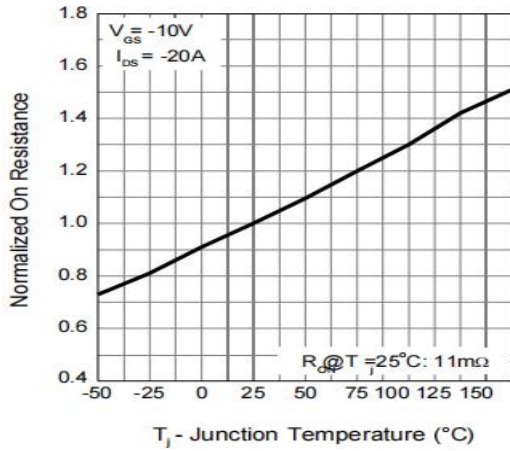


Figure 3: On-Resistance vs. T_J

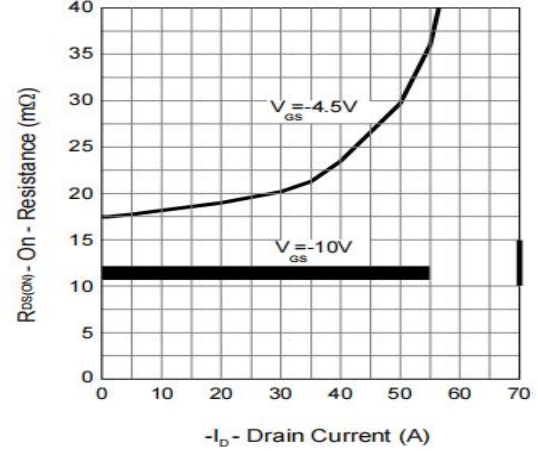


Figure 4: On-Resistance vs. Drain Current

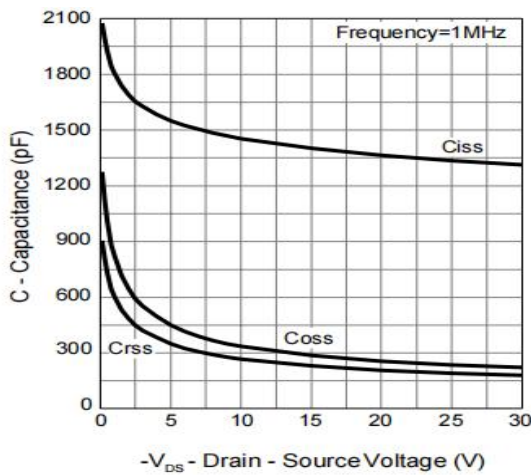


Figure 5: Capacitance Characteristics

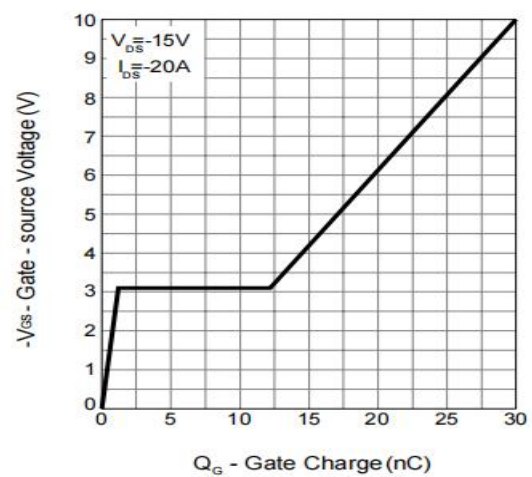
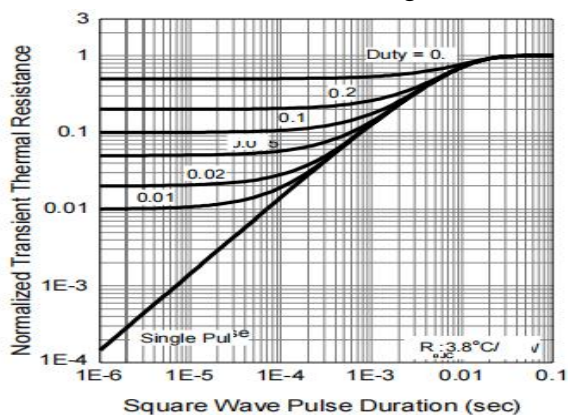
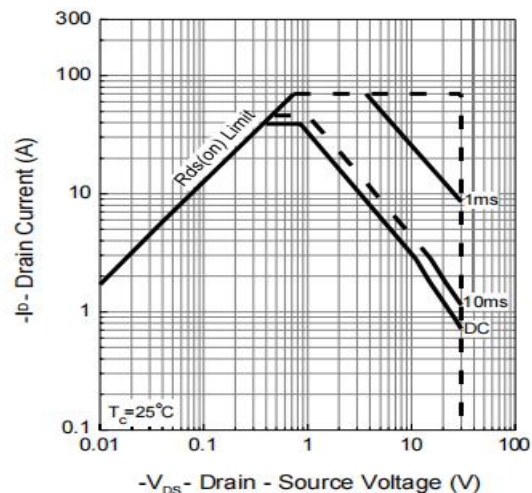
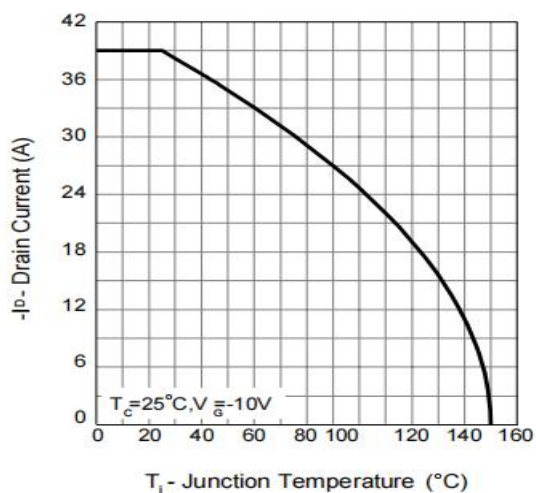
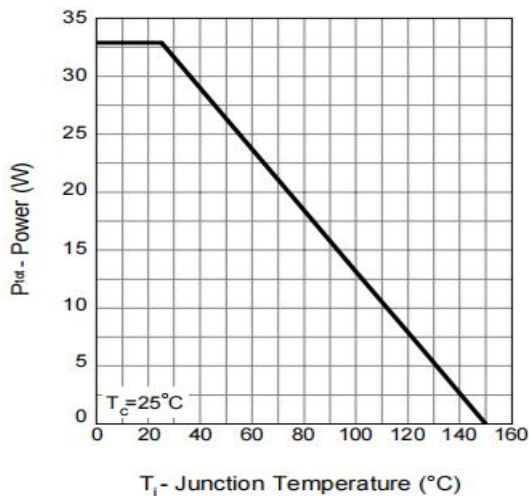
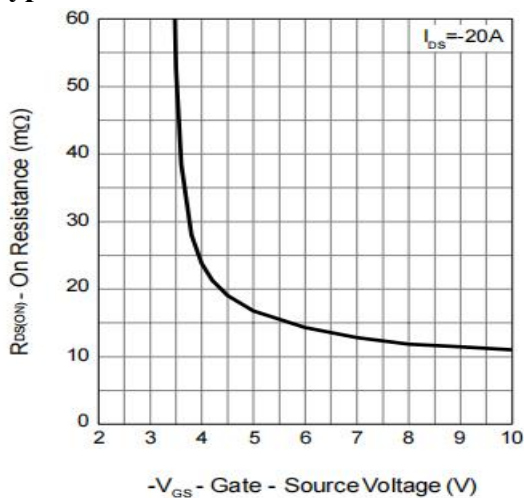
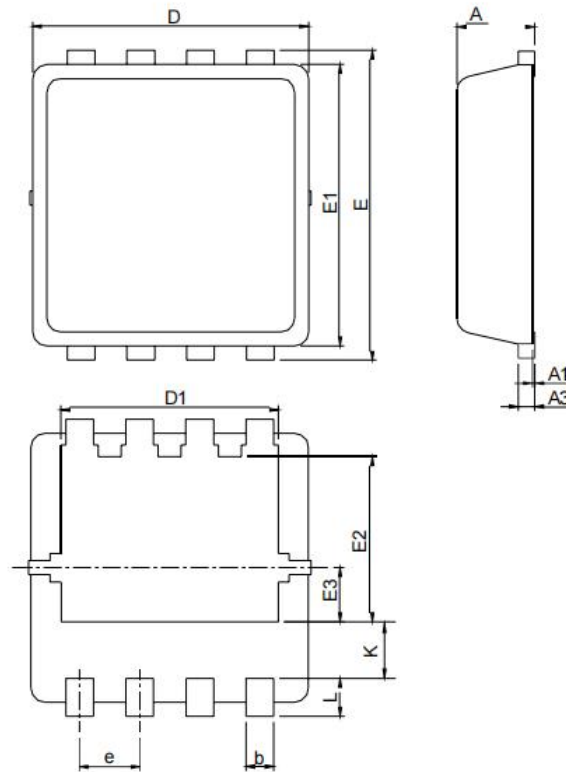


Figure 6: Gate-Charge Characteristics

■ Typical Characteristic Curve 典型特性曲线



■ **Dimension 外形封装尺寸**



SYMBOL	DFN3x3-8			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	0.80	1.00	0.031	0.039
A1	0.00	0.05	0.000	0.002
A3	0.10	0.25	0.004	0.010
b	0.24	0.35	0.009	0.014
D	2.90	3.10	0.114	0.122
D1	2.25	2.45	0.089	0.096
E	3.10	3.30	0.122	0.130
E1	2.90	3.10	0.114	0.122
E2	1.65	1.85	0.065	0.073
E3	0.56	0.58	0.022	0.023
e	0.65 BSC		0.026 BSC	
K	0.475	0.775	0.019	0.031
L	0.30	0.50	0.012	0.020