

PDFN3.3X3.3-8 N Channel SGT Enhancement 沟道屏蔽栅增强型 MOS Field Effect Transistor 场效应管

■ Features 特点

Low on-resistance 低导通电阻

$R_{DS(ON)}=9.7m\Omega(\text{Type})@V_{GS}=10V$

$R_{DS(ON)}=13m\Omega(\text{Type})@V_{GS}=4.5V$

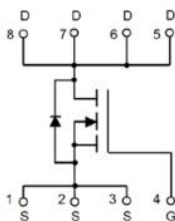
■ Applications 应用

Load Switch 负载开关

DC-DC Converter 电源转换

High current load applications 高电流负载应用

■ 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}	60	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 $T_C = 25^\circ C$ at $T_C = 100^\circ C$)	54 34	A
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	216	A
Total Device Dissipation 总耗散功率	$P_{TOT}(\text{at } T_A = 25^\circ C$ at $T_C = 25^\circ C)$	2.5 36.7	W
Avalanche Energy(Single Pulse)雪崩能量	EAS	56	mJ
Thermal Resistance Junction-A/C 热阻	$R_{\theta JA}$ $R_{\theta JC}$	60 3.4	$^\circ C/W$
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°C unless otherwise noted 如无特殊说明, 温度为 25°C)

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}	60	—	—	V
Gate Threshold Voltage 栅极开启电压(I _D =250uA, V _{GS} =V _{DS})	V _{GS(th)}	1.1	1.6	2.1	V
Zero Gate Voltage Drain Current 零栅压漏极电流(V _{GS} =0V, V _{DS} =60V)	I _{DSS}	—	—	1	uA
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 =15A, V _{GS} =4.5V)	R _{DS(ON)}	—	9.7 13	13 17	mΩ
Diode Forward Voltage Drop 内附二极管正向压降(I _{SD} =20A, V _{GS} =0V)	V _{SD}	—	0.8	1.2	V
Input Capacitance 输入电容 (V _{GS} =0V, V _{DS} =30V, f=1MHz)	C _{ISS}	—	950	—	pF
Common Source Output Capacitance 共源输出电容(V _{GS} =0V, V _{DS} =30V, f=1MHz)	C _{OSS}	—	254	—	pF
Reverse Transfer Capacitance 反馈电容 (V _{GS} =0V, V _{DS} =30V, f=1MHz)	C _{RSS}	—	45	—	pF
Total Gate Charge 栅极电荷密度 (V _{DS} =30V, I _D =20A, V _{GS} =10V)	Q _g	—	13.1	—	nC
Gate Source Charge 栅源电荷密度 (V _{DS} =30V, I _D =20A, V _{GS} =10V)	Q _{gs}	—	2.2	—	nC
Gate Drain Charge 栅漏电荷密度 (V _{DS} =30V, I _D =20A, V _{GS} =10V)	Q _{gd}	—	2.6	—	nC
Turn-ON Delay Time 开启延迟时间 (V _{DS} =30V I _D =20A, R _{GEN} =10Ω, V _{GS} =10V)	t _{d(on)}	—	7	—	ns
Turn-ON Rise Time 开启上升时间 (V _{DS} =30V I _D =20A, R _{GEN} =10Ω, V _{GS} =10V)	t _r	—	52.5	—	ns
Turn-OFF Delay Time 关断延迟时间 (V _{DS} =30V I _D =20A, R _{GEN} =10Ω, V _{GS} =10V)	t _{d(off)}	—	44.5	—	ns
Turn-OFF Fall Time 关断下降时间 (V _{DS} =30V I _D =20A, R _{GEN} =10Ω, V _{GS} =10V)	t _f	—	93.5	—	ns

■ Typical Characteristic Curve 典型特性曲线

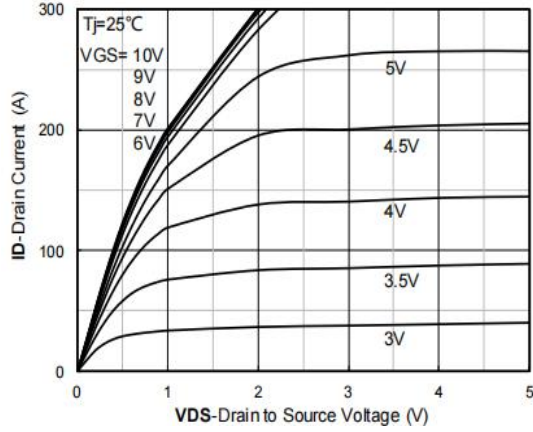


Figure 1: Output Characteristics

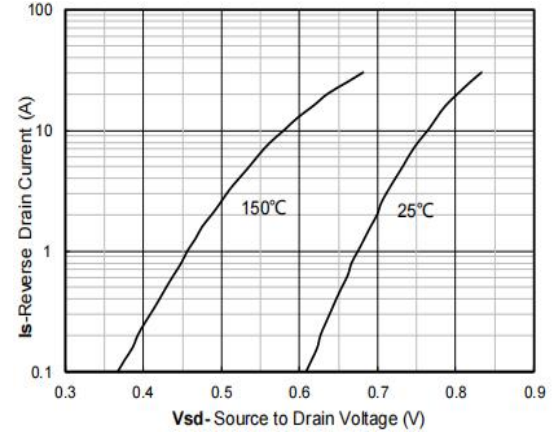


Figure 2: Diode Forward Characteristics

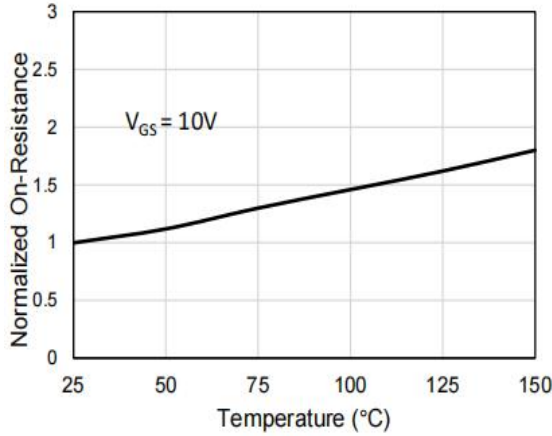


Figure 3: On-Resistance vs. Tj

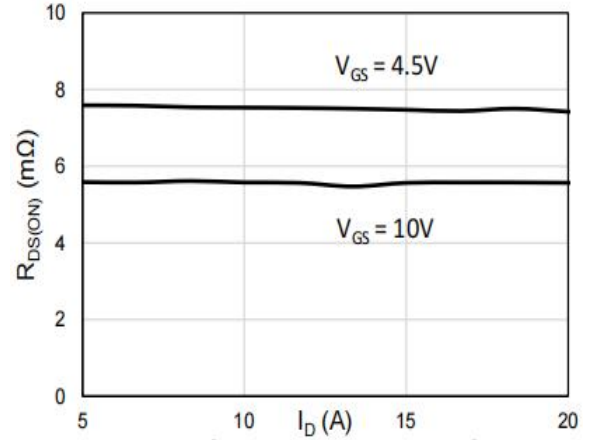


Figure 4: On-Resistance vs. Drain Current

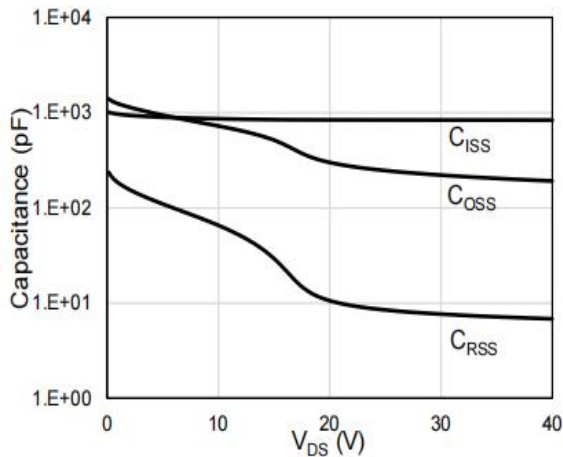


Figure 5: Capacitance Characteristics

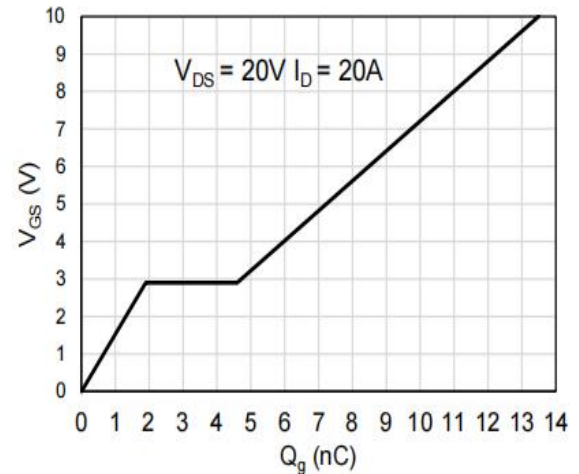
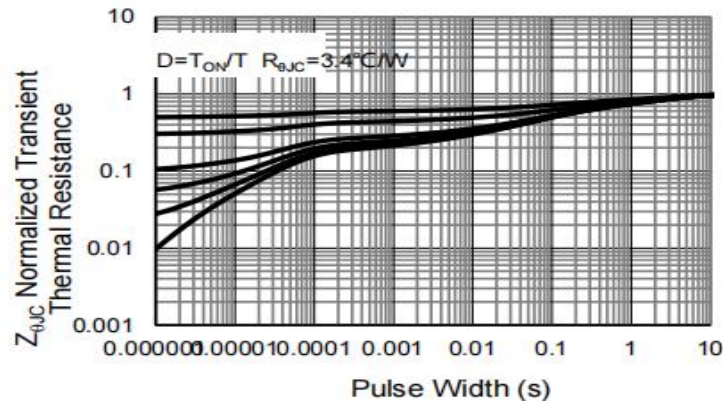
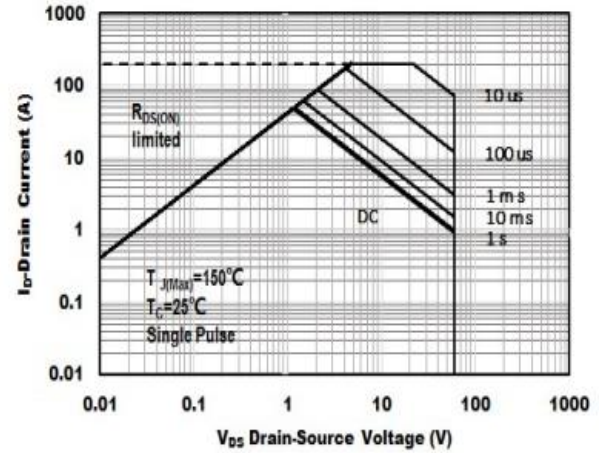
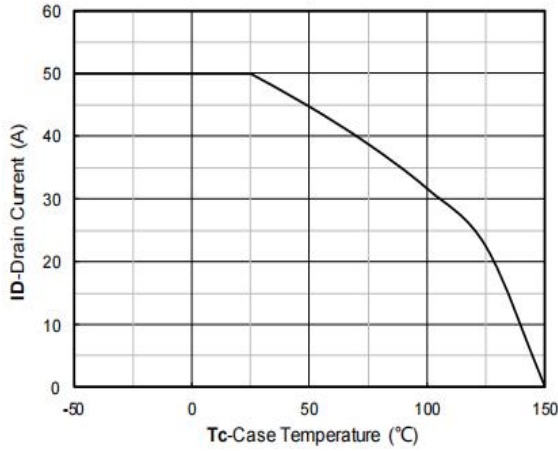
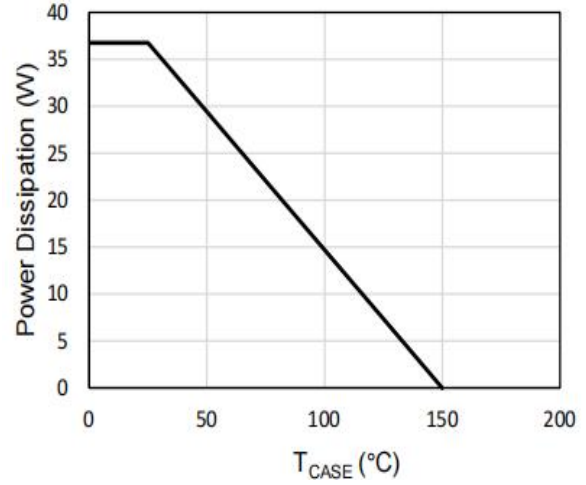
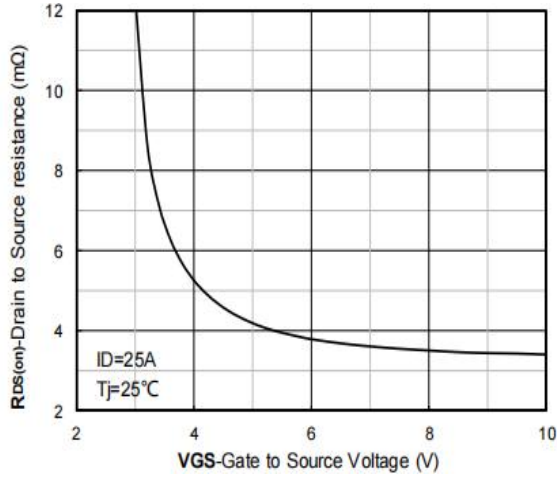
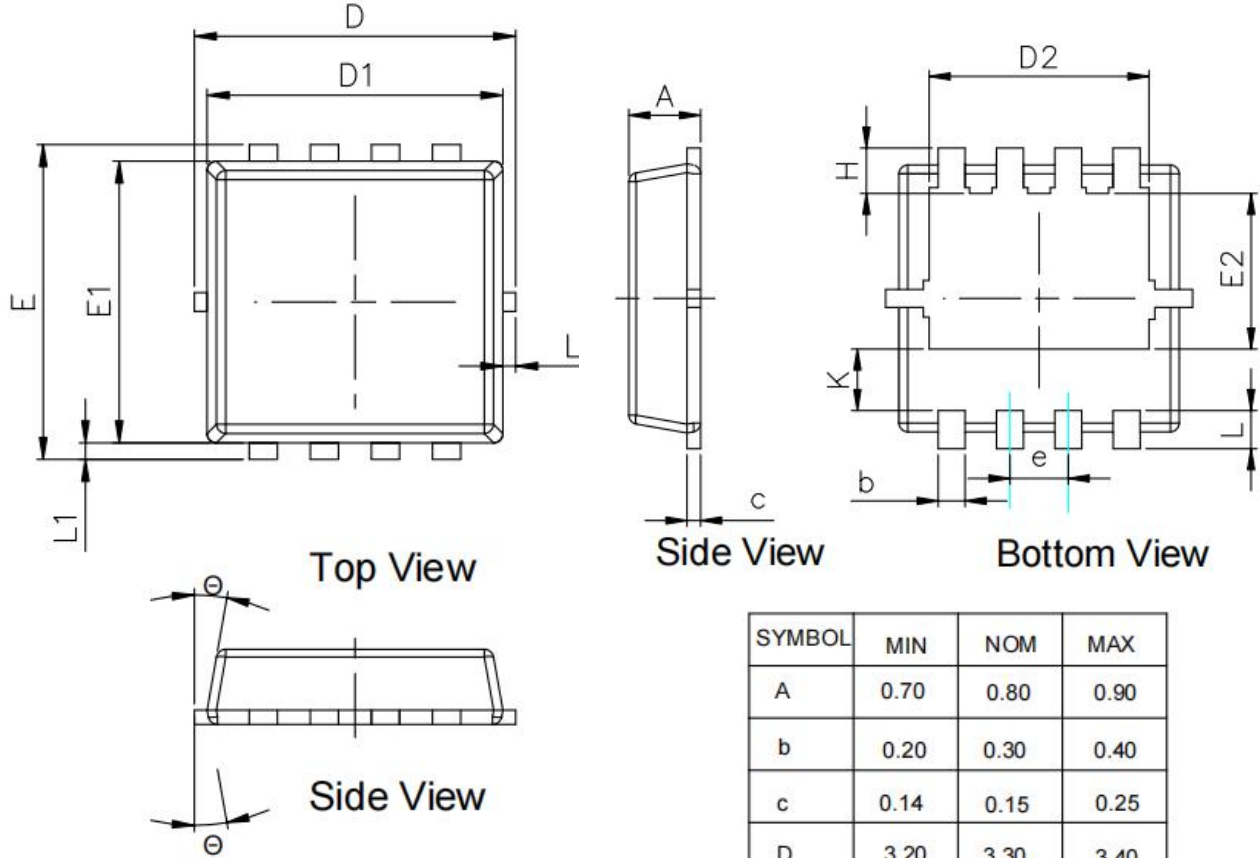


Figure 6: Gate-Charge Characteristics

■ Typical Characteristic Curve 典型特性曲线



■ **Dimension 外形封装尺寸(Unit:mm)**



SYMBOL	MIN	NOM	MAX
A	0.70	0.80	0.90
b	0.20	0.30	0.40
c	0.14	0.15	0.25
D	3.20	3.30	3.40
D1	3.00	3.15	3.30
D2	2.35	2.45	2.55
e	0.65 BSC		
E	3.25	3.35	3.45
E1	2.85	3.00	3.15
E2	1.635	1.735	1.835
H	0.41	0.56	0.71
K	0.585	0.685	0.785
L	0.30	0.40	0.50
L1	0.05	0.15	0.25
L2	—	—	0.15
Θ	8°	10°	12°