

**SOT-563 20V Dual N Channel Enhancement with ESD 双 N 沟道增强型带静电保护
 MOS Field Effect Transistor 场效应管**
■Features 特点

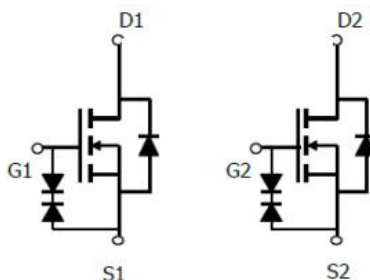
Low on-resistance 低导通电阻

 $R_{DS(ON)}=200m\Omega(\text{Type})@V_{GS}=4.5V$
 $R_{DS(ON)}=235m\Omega(\text{Type})@V_{GS}=2.5V$
 $R_{DS(ON)}=295m\Omega(\text{Type})@V_{GS}=1.8V$
■Applications 应用

Hand-held Equipment 手持设备

Load Switch & Networking 负载开关和网络

Power Management in Note Book 笔记本电源管理

■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}	20	V
Gate- Source Voltage 栅极-源极电压	V_{GS}	± 8	V
Drain Current (continuous)漏极电流-连续	I_D (at $T_A = 25^\circ C$) (at $T_A = 25^\circ C$)	800 640	mA
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	3.2	A
Total Device Dissipation 总耗散功率	$P_D(\text{at } T_A = 25^\circ C)$	312	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	400	$^\circ C/W$
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 =250μA, V _{GS} =0V)	BV _{DSS}	20	—	—	V
Gate Threshold Voltage 栅极开启电压(I _D =250μA, V _{GS} =V _{DS})	V _{GS(th)}	0.3	0.6	1.0	V
Zero Gate Voltage Drain Current 零栅压漏极电流(V _{GS} =0V, V _{DS} =20V)	I _{DSS}	—	—	1	μA
Gate Body Leakage 栅极漏电流(V _{GS} =±8V, V _{DS} =0V)	I _{GSS}	—	—	±10	μA
Static Drain-Source On-State Resistance 静态漏源导通电阻(I _D =0.5A, V _{GS} =4.5V) (I _D =0.4A, V _{GS} =2.5V) (I _D =0.2A, V _{GS} =1.8V)	R _{DS(ON)}	—	200 235 295	300 400 550	mΩ
Diode Forward Voltage Drop 内附二极管正向压降(I _{SD} =0.3A, V _{GS} =0V)	V _{SD}	—	—	1.2	V
Input Capacitance 输入电容 (V _{GS} =0V, V _{DS} =10V, f=1MHz)	C _{ISS}	—	38	—	pF
Common Source Output Capacitance 共源输出电容(V _{GS} =0V, V _{DS} =10V, f=1MHz)	C _{OSS}	—	15	—	pF
Reverse Transfer Capacitance 反馈电容 (V _{GS} =0V, V _{DS} =10V, f=1MHz)	C _{RSS}	—	6	—	pF
Total Gate Charge 栅极电荷密度 (V _{DS} =10V, I _D =0.5A, V _{GS} =4.5V)	Q _g	—	1	—	nC
Gate Source Charge 栅源电荷密度 (V _{DS} =10V, I _D =0.5A, V _{GS} =4.5V)	Q _{gs}	—	0.26	—	nC
Gate Drain Charge 栅漏电荷密度 (V _{DS} =10V, I _D =0.5A, V _{GS} =4.5V)	Q _{gd}	—	0.2	—	nC
Turn-ON Delay Time 开启延迟时间 (V _{DS} =10V I _D =0.5A, R _{GEN} =10Ω, V _{GS} =4.5V)	t _{d(on)}	—	5	—	ns
Turn-ON Rise Time 开启上升时间 (V _{DS} =10V I _D =0.5A, R _{GEN} =10Ω, V _{GS} =4.5V)	t _r	—	5	—	ns
Turn-OFF Delay Time 关断延迟时间 (V _{DS} =10V I _D =0.5A, R _{GEN} =10Ω, V _{GS} =4.5V)	t _{d(off)}	—	15	—	ns
Turn-OFF Fall Time 关断下降时间 (V _{DS} =10V I _D =0.5A, R _{GEN} =10Ω, V _{GS} =4.5V)	t _f	—	6	—	ns

■ Typical Characteristic Curve 典型特性曲线

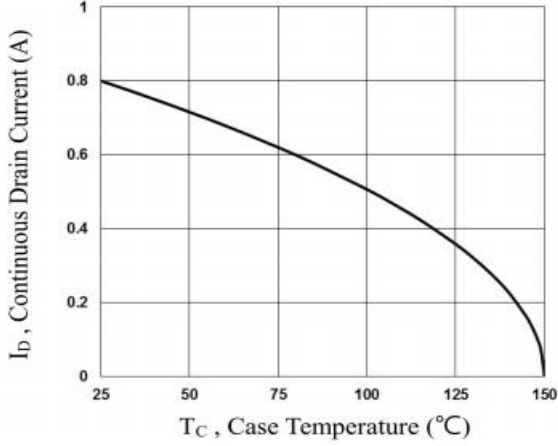


Figure 1: Drain Current vs. Temperature

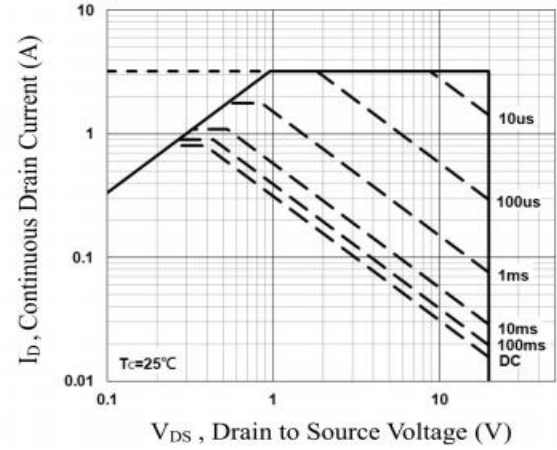


Figure 2: Safe Operating Area

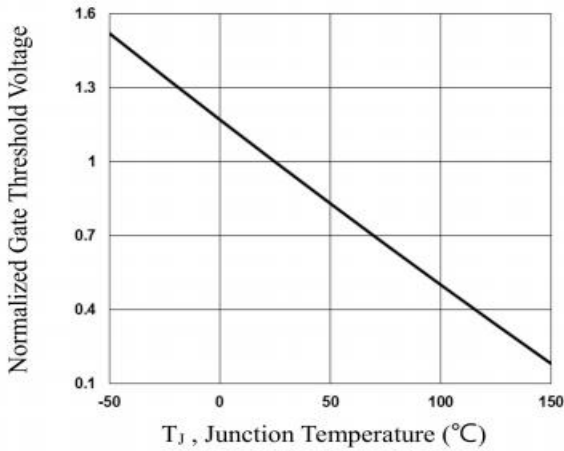


Figure 3: Threshold Voltage vs. Temperature

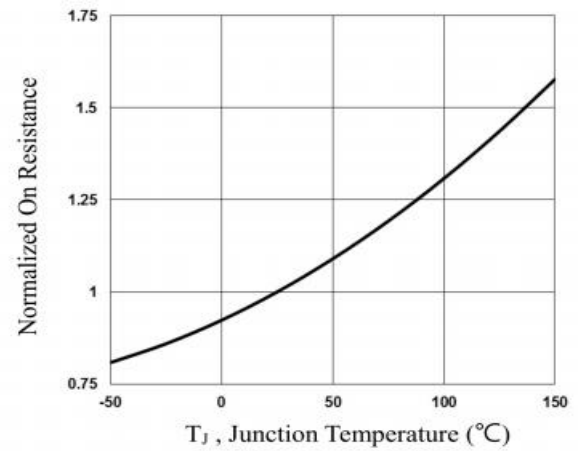


Figure 4: On-Resistance vs. Temperature

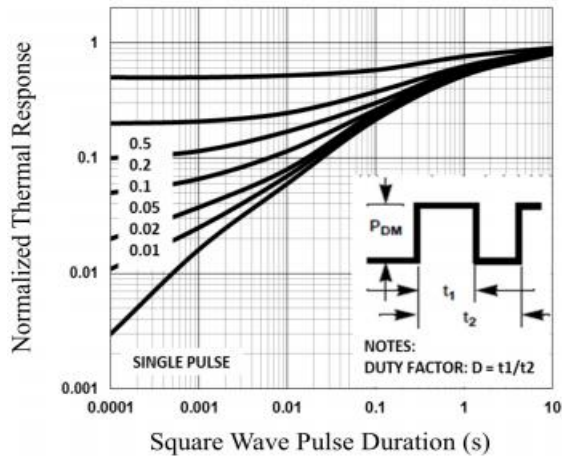


Figure 5: Transient Thermal Response Curve

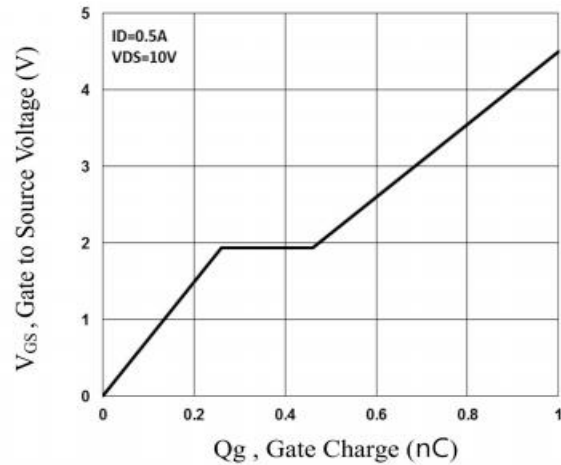
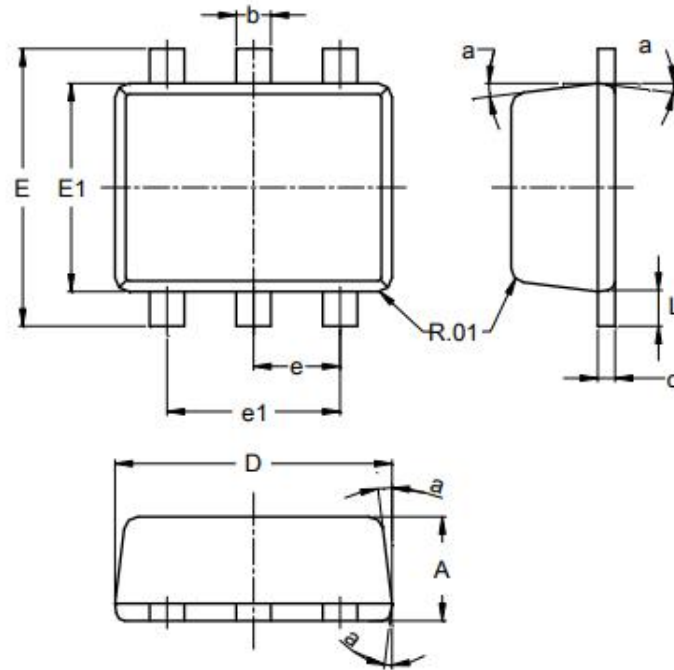


Figure 6: Gate-Charge Characteristics

■ **Dimension 外形封装尺寸**



Dim	Min	Max	Typ
A	0.55	0.60	0.60
b	0.15	0.30	0.20
c	0.10	0.18	0.11
D	1.50	1.70	1.60
E	1.55	1.70	1.60
E1	1.10	1.25	1.20
e	--	--	0.50
e1	0.90	1.10	1.00
L	0.10	0.30	0.20
a	8°	9°	7°
All Dimensions in mm			