

**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

$R_{DS(ON)}=200m\Omega(\text{Type})@V_{GS}=4.5V$

$R_{DS(ON)}=235m\Omega(\text{Type})@V_{GS}=2.5V$

$R_{DS(ON)}=295m\Omega(\text{Type})@V_{GS}=1.8V$

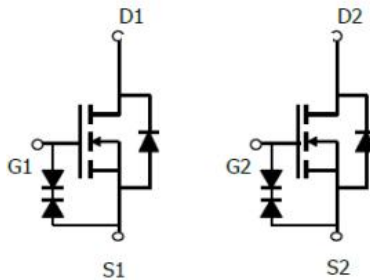
**■ Applications 应用**

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	$V_{GS}$	$\pm 8$	V
Drain Current (continuous)漏极电流-连续	$I_D$ (at $T_A = 25^\circ C$ )	800	mA
	(at $T_A = 25^\circ C$ )	640	
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

( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如无特殊说明, 温度为  $25^{\circ}\text{C}$ )

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( $I_D=250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	20	—	—	V
Gate Threshold Voltage 栅极开启电压( $I_D=250\mu\text{A}, V_{GS}=V_{DS}$ )	$V_{GS(th)}$	0.3	0.6	1.0	V
Zero Gate Voltage Drain Current 零栅压漏极电流( $V_{GS}=0\text{V}, V_{DS}=20\text{V}$ )	$I_{DSS}$	—	—	1	$\mu\text{A}$
Gate Body Leakage 栅极漏电流( $V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$
Static Drain-Source On-State Resistance 静态漏源导通电阻( $I_D=0.5\text{A}, V_{GS}=4.5\text{V}$ ) ( $I_D=0.4\text{A}, V_{GS}=2.5\text{V}$ ) ( $I_D=0.2\text{A}, V_{GS}=1.8\text{V}$ )	$R_{DS(on)}$	—	200 235 295	300 400 550	$\text{m}\Omega$
Diode Forward Voltage Drop 内附二极管正向压降( $I_{SD}=0.3\text{A}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	1.2	V
Input Capacitance 输入电容 ( $V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	38	—	pF
Common Source Output Capacitance 共源输出电容( $V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	15	—	pF
Reverse Transfer Capacitance 反馈电容 ( $V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$ )	$C_{RSS}$	—	6	—	pF
Total Gate Charge 栅极电荷密度 ( $V_{DS}=10\text{V}, I_D=0.5\text{A}, V_{GS}=4.5\text{V}$ )	$Q_g$	—	1	—	nC
Gate Source Charge 栅源电荷密度 ( $V_{DS}=10\text{V}, I_D=0.5\text{A}, V_{GS}=4.5\text{V}$ )	$Q_{gs}$	—	0.26	—	nC
Gate Drain Charge 栅漏电荷密度 ( $V_{DS}=10\text{V}, I_D=0.5\text{A}, V_{GS}=4.5\text{V}$ )	$Q_{gd}$	—	0.2	—	nC
Turn-ON Delay Time 开启延迟时间 ( $V_{DS}=10\text{V}, I_D=0.5\text{A}, R_{GEN}=10\Omega, V_{GS}=4.5\text{V}$ )	$t_{d(on)}$	—	5	—	ns
Turn-ON Rise Time 开启上升时间 ( $V_{DS}=10\text{V}, I_D=0.5\text{A}, R_{GEN}=10\Omega, V_{GS}=4.5\text{V}$ )	$t_r$	—	5	—	ns
Turn-OFF Delay Time 关断延迟时间 ( $V_{DS}=10\text{V}, I_D=0.5\text{A}, R_{GEN}=10\Omega, V_{GS}=4.5\text{V}$ )	$t_{d(off)}$	—	15	—	ns
Turn-OFF Fall Time 关断下降时间 ( $V_{DS}=10\text{V}, I_D=0.5\text{A}, R_{GEN}=10\Omega, V_{GS}=4.5\text{V}$ )	$t_f$	—	6	—	ns

■ Typical Characteristic Curve 典型特性曲线

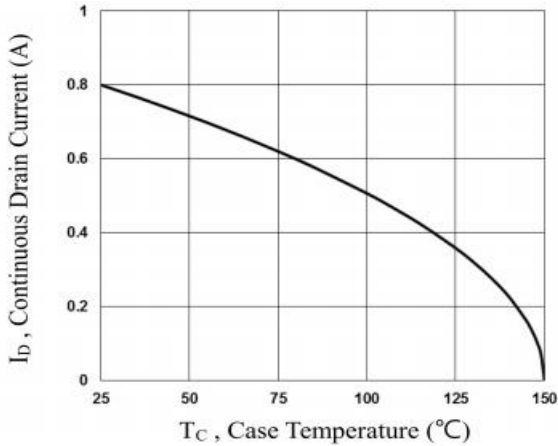


Figure 1: Drain Current vs. Temperature

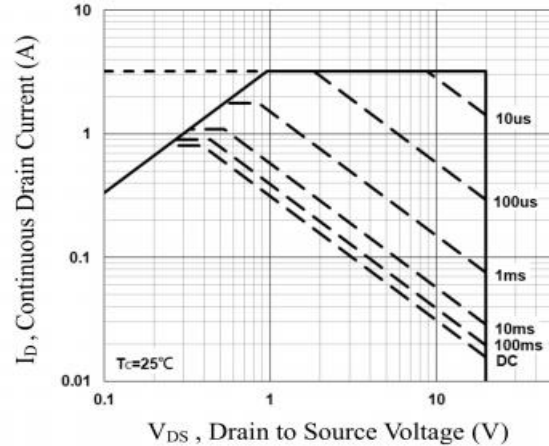


Figure 2: Safe Operating Area

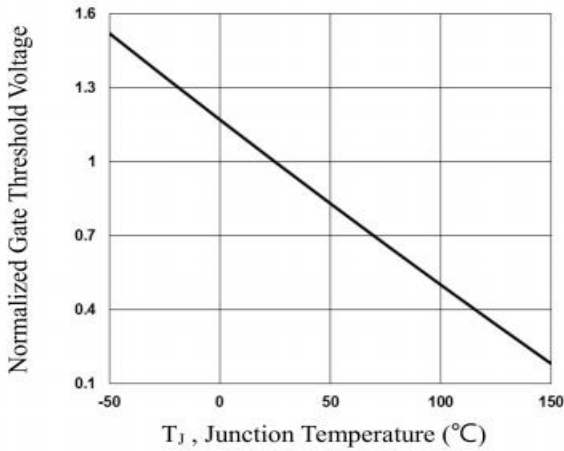


Figure 3: Threshold Voltage vs. Temperature

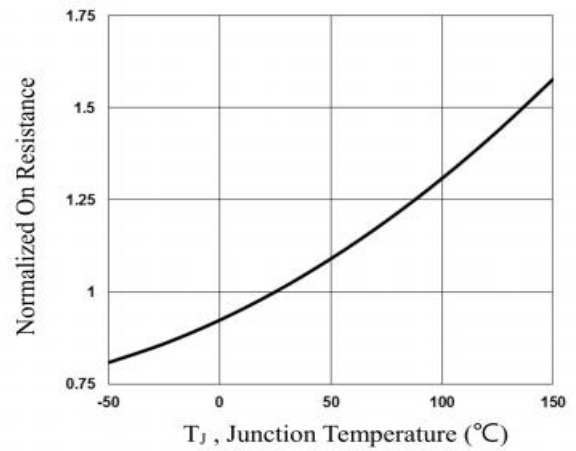


Figure 4: On-Resistance vs. Temperature

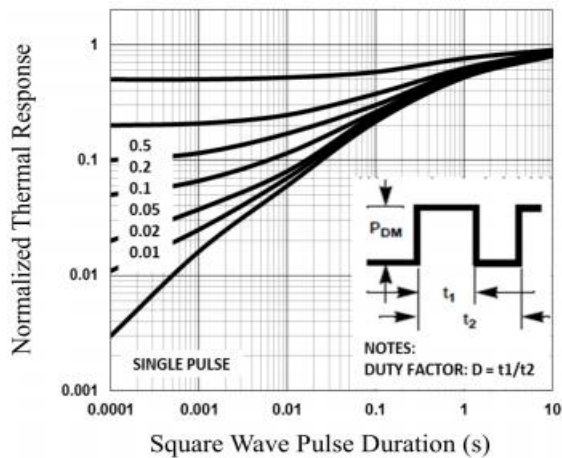


Figure 5: Transient Thermal Response Curve

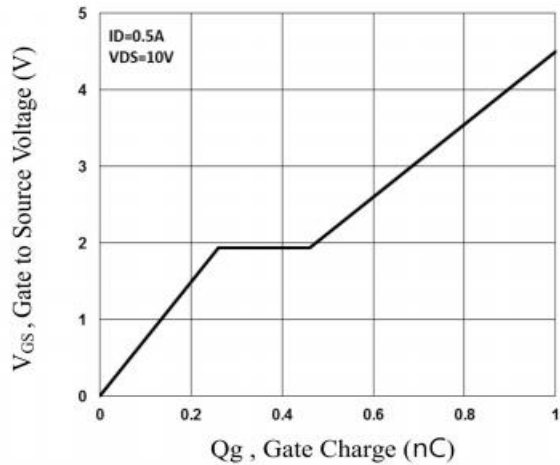
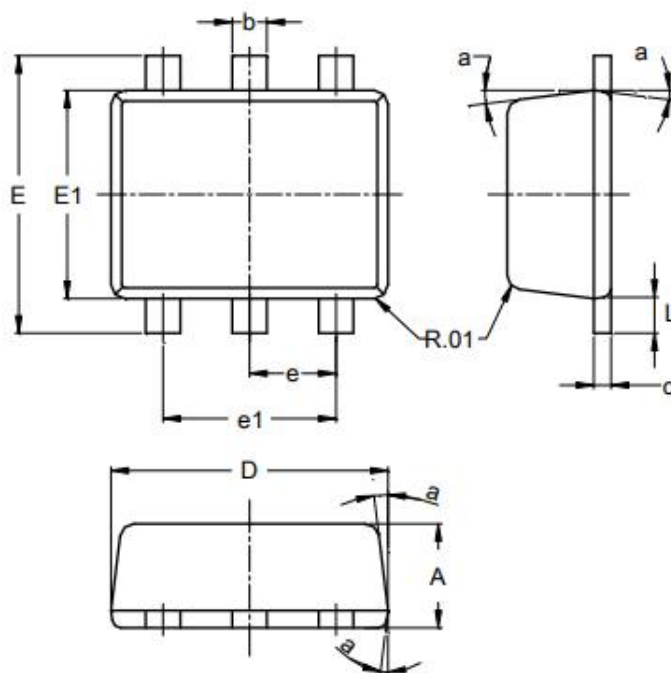


Figure 6: Gate-Charge Characteristics

■ 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°
<b>All Dimensions in mm</b>			