安徽富信半导体科技有限公司

ANHUI FOSAN SEMICONDUCTOR TECHNOLOGY CO. , LTD.

DMN2400UV

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

$R_{DS(ON)}$=200mΩ(Type)@V_{GS}=4.5V

$R_{DS(ON)}$=235mΩ(Type)@V_{GS}=2.5V

$R_{DS(ON)}$=295mΩ(Type)@V_{GS}=1.8V

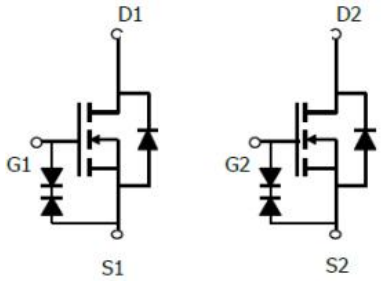
■Applications 应用

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°C） （at T_A = 25°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(at T_A = 25°C)	312	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\Theta JA}$	400	℃/W
Junction/Storage Temperature 结温/储存温度	T_J,T_{stg}	-55~150	℃

■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}	20	—	—	V
Gate Threshold Voltage 栅极开启电压(I_D =250uA,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

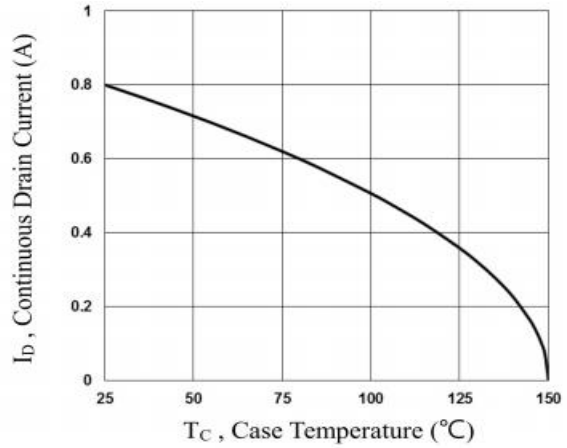


Figure 1:Drain Current vs. Temperature

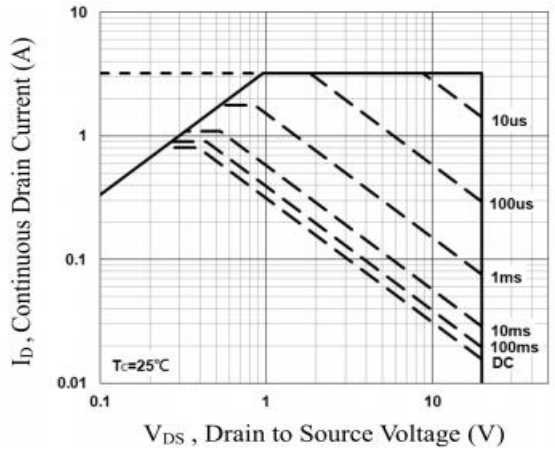


Figure 2: Safe Operating Area

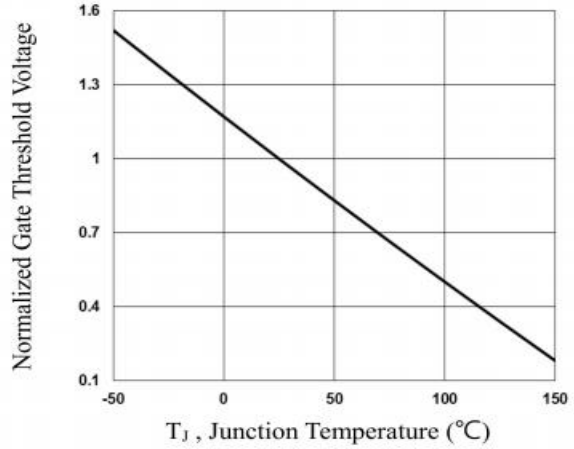


Figure 3: Threshold Voltage vs. Temperature

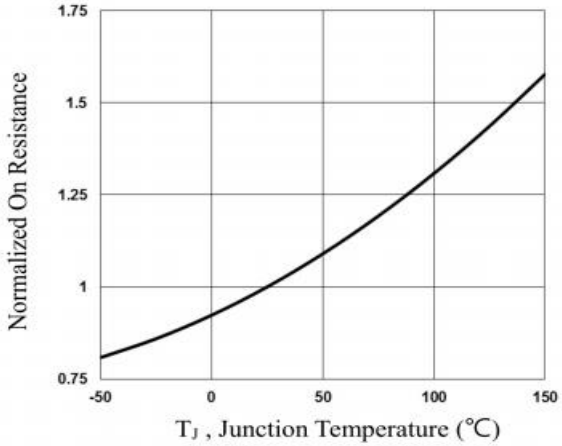


Figure 4: On-Resistance vs. Temperature

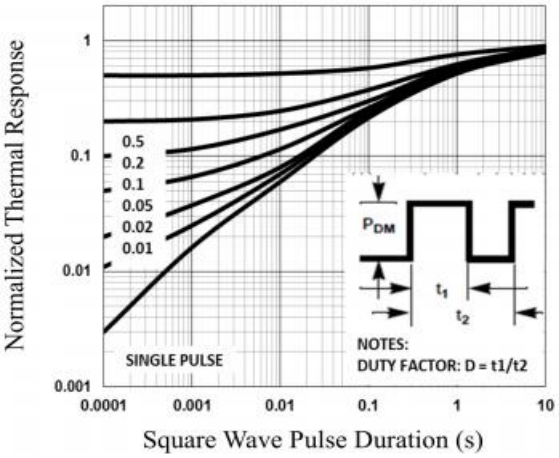


Figure 5: Transient Thermal Response Curve

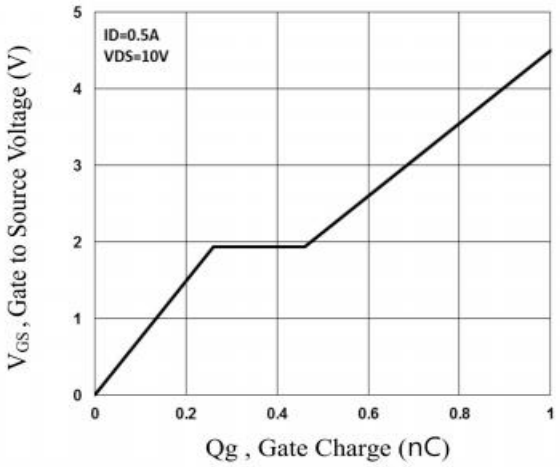
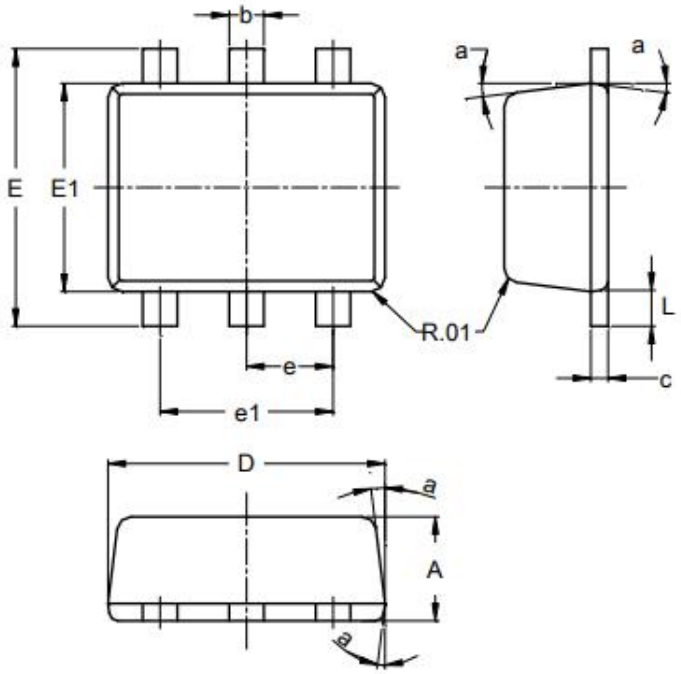


Figure 6: Gate-Charge Characteristics

■**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			