GMND001N03

N-channel 30V, 150A, DFN5*6-8   Power MOSFET 功率場效應管

■**Features 特點**

Low on-resistance 低導通電阻
Logic Level Control 邏輯電平控制
$R_{DS(ON)}$Type1.4mΩ@VGS=10V
$R_{DS(ON)}$Type2.3mΩ@VGS=4.5V

■**Applications 應用**

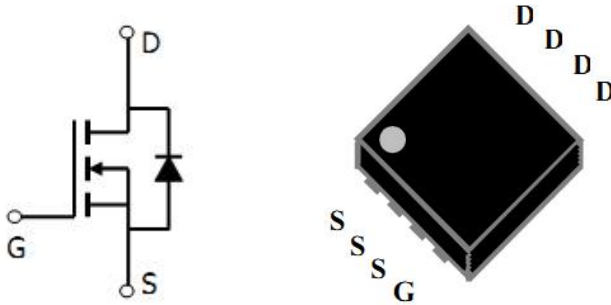Power Management in Note book 筆記本電源管理
Portable Equipment 便攜式設備
Load Switch Application 負載開關應用
PWM Application 脈寬調製應用

■**Internal Schematic Diagram 內部結構**

■**Absolute Maximum Ratings 最大额定值**

Characteristic 特性參數	Symbol 符號	Rat 額定值	Unit 單位
Drain-Source Voltage 漏極-源極電壓	BV$_{DSS}$	30	V
Gate- Source Voltage 柵極-源極電壓	V$_{GS}$	$\pm$20	V
Drain Current (continuous)漏極電流-連續	I$_D$（at TC = 25°C）	150	A
Drain Current (pulsed)漏極電流-脉冲	I$_{DM}$	600	A
Total Device Dissipation 總耗散功率	P$_{TOT}$(at TC = 25°C)	120	W
Avalanche energy, single pulsed 雪崩能量	EAS	200	mJ
Thermal Resistance Junction to Case 熱阻	R$_{\Theta JC}$	1.1	℃/W
Junction/Storage Temperature 結溫/儲存溫度	T$_J$,T$_{stg}$	-50~150	℃

桂林斯壮桂微電子有限責任公司
## GSME Guilin Strong Micro-Electronics Co.,Ltd.

■**Electrical Characteristics 電特性**

(T_A=25℃ unless otherwise noted 如無特殊說明，溫度爲 25℃)

Characteristic 特性參數	Symbol 符號	Min 最小值	Typ 典型值	Max 最大值	Unit 單位
Drain-Source Breakdown Voltage 漏極-源極擊穿電壓(I_D =250uA,V_{GS}=0V)	BV_{DSS}	30	—	—	V
Gate Threshold Voltage 栅極開启電壓(I_D =250uA,V_{GS}= V_{DS})	$V_{GS(th)}$	1.0	1.6	2.5	V
Zero Gate Voltage Drain Current 零栅壓漏極電流(V_{GS}=0V, V_{DS}= 30V)	I_{DSS}	—	—	1	uA
Gate Body Leakage 栅極漏電流(V_{GS}=±20V, V_{DS}=0V)	I_{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance 静态漏源導通電阻(I_D=30A,V_{GS}=10V) (I_D=20A,V_{GS}=4.5V)	$R_{DS(ON)}$	—	1.4 2.3	1.8 3.2	mΩ
Diode Forward Voltage Drop 内附二極管正向壓降(I_{SD}=30A,V_{GS}=0V)	V_{SD}	—	—	1.2	V
Input Capacitance 輸入電容 (V_{GS}=0V, V_{DS}=15V,f=1MHz)	C_{ISS}	—	11000	—	pF
Common Source Output Capacitance 共源輸出電容(V_{GS}=0V, V_{DS}=15V,f=1MHz)	C_{OSS}	—	1300	—	pF
Reverse Transfer Capacitance 反向传輸電容 (V_{GS}=0V, V_{DS}=15V,f=1MHz)	C_{RSS}	—	1000	—	pF
Total Gate Charge 總栅極電荷密度 (V_{DS}=15V, I_D=30A, V_{GS}=5V)	Q_g	—	250	—	nC
Gate Source Charge 栅源電荷密度 (V_{DS}=15V, I_D=30A, V_{GS}=5V)	Q_{gs}	—	48	—	nC
Gate Drain Charge 栅漏電荷密度 (V_{DS}=15V, I_D=30A, V_{GS}=5V)	Q_{gd}	—	98	—	nC
Turn-On Delay Time 開启延迟時間 (V_{DS}=15V, I_D=30A, R_{GEN}=3.3Ω,V_{GS}=10V)	$t_{d(on)}$	—	40	—	ns
Turn-On Rise Time 開启上升時間 (V_{DS}=15V, I_D=30A, R_{GEN}=3.3Ω,V_{GS}=10V)	t_r	—	140	—	ns
Turn-Off Delay Time 關斷延迟時間 (V_{DS}=15V, I_D=30A, R_{GEN}=3.3Ω,V_{GS}=10V)	$t_{d(off)}$	—	38	—	ns
Turn-On Fall Time 開启下降時間 (V_{DS}=15V, I_D=30A, R_{GEN}=3.3Ω,V_{GS}=10V)	t_f	—	60	—	ns

■DIMENSION 外形封裝尺寸
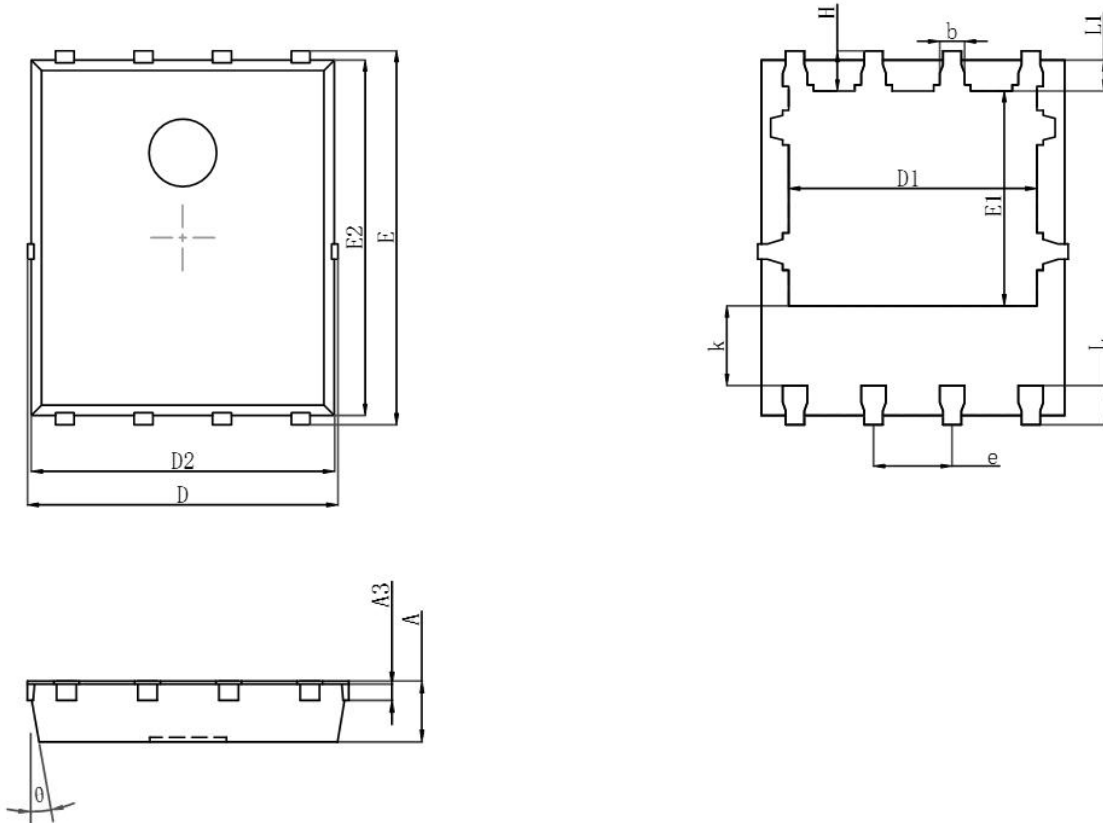
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°