桂林斯壯桂微電子有限責任公司
Guilin Strong Micro-Electronics Co.,Ltd.

GMW30N06

N-channel 60V, 30A, TO-252　Power MOSFET 功率場效應管

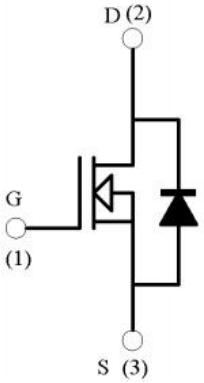
■Features 特點

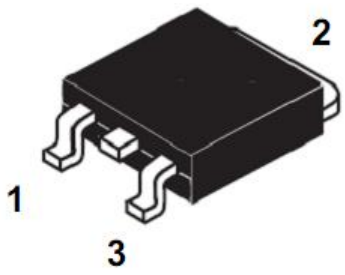
Low on-resistance and maximum DC current capability 低導通電阻和最大直流電流能力
Super high density cell design 超高元胞密度設計
$R_{DS(ON)}$≤24mΩ@VGS=10V
$R_{DS(ON)}$≤30mΩ@VGS=4.5V

■Applications 應用

Power Management in Note book 筆記本電源管理
Portable Equipment 便攜式設備
Battery Powered System 電池電源系統
DC/DC Converter 直流/直流变换
Load Switch 負載開關應用

■Internal Schematic Diagram 內部結構





TO-252

■Absolute Maximum Ratings 最大額定值

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}	60	V
Gate- Source Voltage 柵極-源極電壓	V_{GS}	±20	V
Drain Current (continuous)漏極電流-連續	I_D（at TC = 25°C）	30	A
Drain Current (pulsed)漏極電流-脉冲	I_{DM}	60	A
Total Device Dissipation 總耗散功率	P_{TOT}(at TC = 25°C)	38	W
Thermal Resistance Junction-Ambient 熱阻	$R_{\Theta JA}$	4	℃/W
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-55~150	℃

■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}	60	—	—	V
Gate Threshold Voltage 柵極開启電壓(I_D =250uA,V_{GS}= V_{DS})	$V_{GS(th)}$	2	3	4	V
Zero Gate Voltage Drain Current 零柵壓漏極電流(V_{GS}=0V, V_{DS}= 60V)	I_{DSS}	—	—	1	uA
Gate Body Leakage 柵極漏電流(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)	$R_{DS(ON)}$	—	23 28	24 30	mΩ
Source Drain Current 源極-漏極電流	I_{SD}	—	—	1.25	A
Diode Forward Voltage Drop 内附二極管正向壓降(I_{SD}=1.25A,V_{GS}=0V)	V_{SD}	—	—	1.3	V
Input Capacitance 輸入電容 (V_{GS}=0V, V_{DS}=15V,f=1MHz)	C_{ISS}	—	900	—	pF
Common Source Output Capacitance 共源輸出電容(V_{GS}=0V, V_{DS}=15V,f=1MHz)	C_{OSS}	—	100	—	pF
Reverse Transfer Capacitance 回饋電容(V_{GS}=0V, V_{DS}=15V,f=1MHz)	C_{RSS}	—	50	—	pF
Total Gate Charge 總柵電荷密度 (V_{DS}=30V, I_D=20A, V_{GS}=10V)	Q_g	—	5	—	nC
Gate Source Charge 柵源電荷密度 (V_{DS}=30V, I_D=20A, V_{GS}=10V)	Q_{gs}	—	2.4	—	nC
Gate Drain Charge 柵漏電荷密度 (V_{DS}=30V, I_D=20A, V_{GS}=10V)	Q_{gd}	—	1.8	—	nC
Turn-On Delay Time 開启延迟時間 (V_{DS}=15V, I_D=1A, R_{GEN}=10Ω,V_{GS}=10V)	$t_{d(on)}$	—	12	—	ns
Turn-On Rise Time 開启上升時間 (V_{DS}=15V, I_D=1A, R_{GEN}=10Ω,V_{GS}=10V)	t_r	—	10	—	ns
Turn-Off Delay Time 關断延迟時間 (V_{DS}=15V, I_D=1A, R_{GEN}=10Ω,V_{GS}=10V)	$t_{d(off)}$	—	52	—	ns
Turn-On Fall Time 開启下降時間 (V_{DS}=15V, I_D=1A, R_{GEN}=10Ω,V_{GS}=10V)	t_f	—	28	—	ns

■TYPICAL CHARACTERISTIC CURVE 典型特性曲线

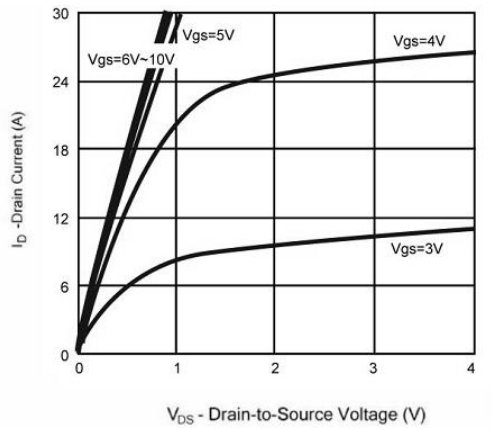


Figure 1.Output Characteristics

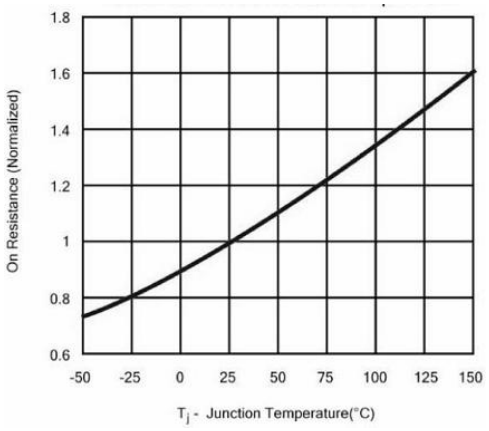


Figure2.On-Resistance Variation with Temperature

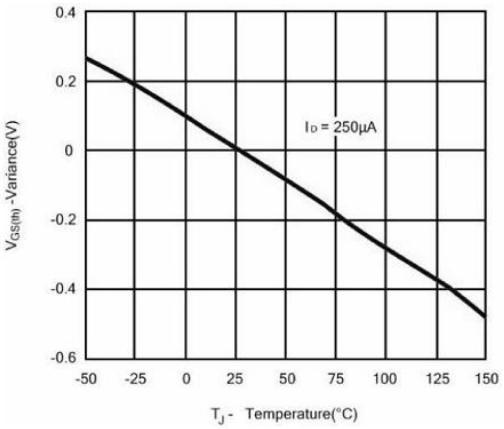


Figure3.Gate Threshold Variation with Temperatures

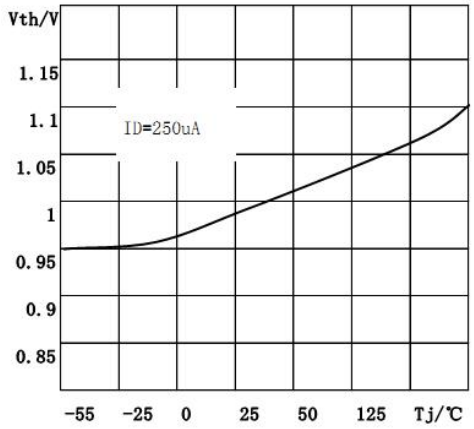


Figure4.Breakdown Voltage Variation with temperatures

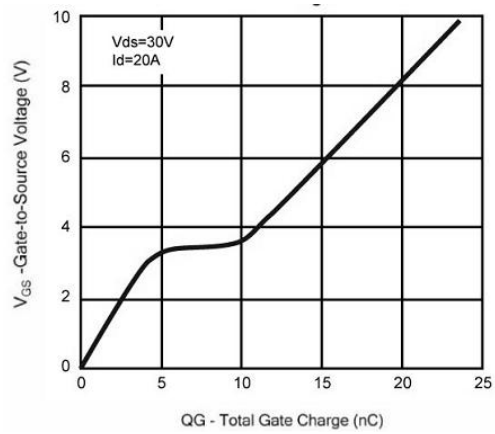


Figure5. Gate charge

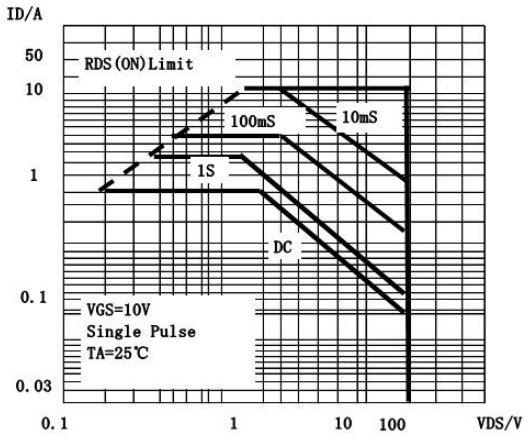
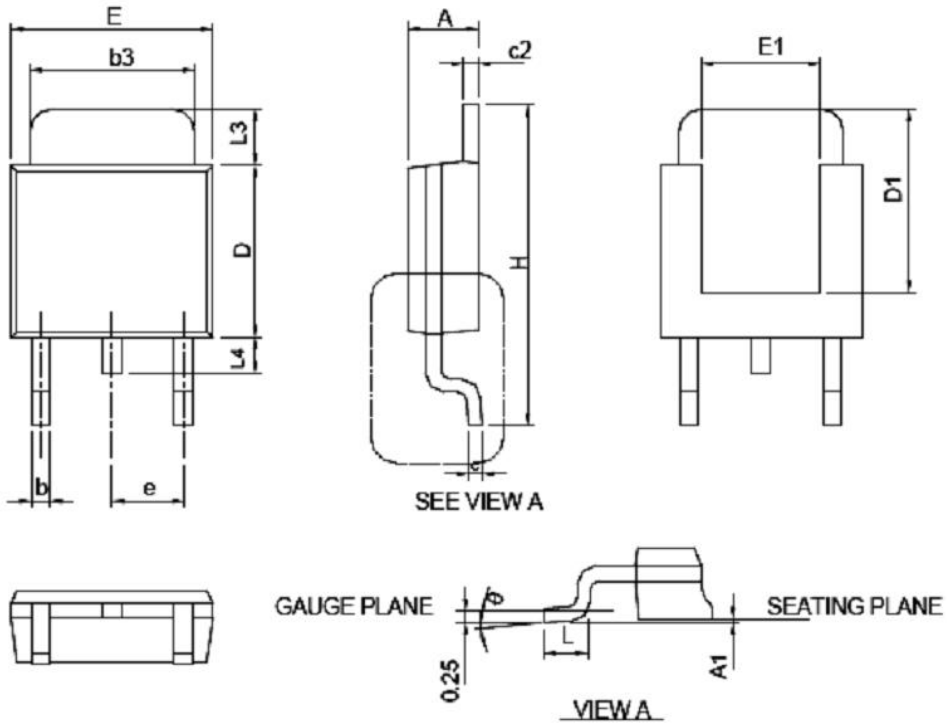


Figure6.Maximum Safe Operating Area

■DIMENSION 外形封裝尺寸



SYMBOL	TO-252			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	2.18	2.39	0.086	0.094
A1		0.13		0.005
b	0.50	0.89	0.020	0.035
b3	4.95	5.46	0.195	0.215
c	0.46	0.61	0.018	0.024
c2	0.46	0.89	0.018	0.035
D	5.33	6.22	0.210	0.245
D1	4.57	6.00	0.180	0.236
E	6.35	6.73	0.250	0.265
E1	3.81	6.00	0.150	0.236
e	2.29 BSC		0.090 BSC	
H	9.40	10.41	0.370	0.410
L	0.90	1.78	0.035	0.070
L3	0.89	2.03	0.035	0.080
L4		1.02		0.040
θ	0°	8°	0°	8°