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

GMWLR38P10

P-channel -100V, -40A, TO-252　Power MOSFET 功率場效應管

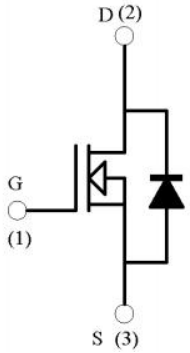
■Features 特點

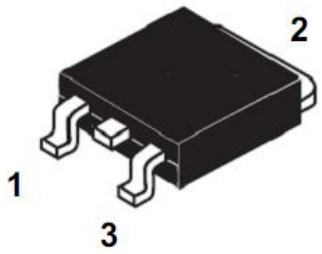
Low on-resistance and maximum DC current capability 低導通電阻和最大直流電流能力
Super high density cell design 超高元胞密度設計
$R_{DS(ON)}$TYP40mΩ@VGS=-10V
$R_{DS(ON)}$TYP44mΩ@VGS=-4.5V

■Applications 應用

Power Management in Note book 筆記本電源管理
Portable Equipment 便攜式設備
Telecom Industrial Powered System 通信、工業電源系統
LED Back-lighting LED 背光
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}	-100	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）	-40	A
Drain Current (pulsed)漏極電流-脉冲	I_{DM}	-110	A
Total Device Dissipation 總耗散功率	P_{TOT}(at TC = 25°C)	100	W
Thermal Resistance Junction-Ambient 熱阻	$R_{\Theta JA}$	1.5	℃/W
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-50~150	℃

■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}	-100	—	—	V
Gate Threshold Voltage 柵極開启電壓(I_D =-250uA,V_{GS}= V_{DS})	$V_{GS(th)}$	-1	-2	-3	V
Zero Gate Voltage Drain Current 零柵壓漏極電流(V_{GS}=0V, V_{DS}= -100V)	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=-20A,V_{GS}=-10V) (I_D=-10A,V_{GS}=-4.5V)	$R_{DS(ON)}$	—	40 44	52 60	mΩ
Source Drain Current 源極-漏極電流	I_{SD}	—	—	-40	A
Diode Forward Voltage Drop 内附二極管正向壓降(I_{SD}=-20A,V_{GS}=0V)	V_{SD}	—	-0.87	-1.2	V
Input Capacitance 輸入電容 (V_{GS}=0V, V_{DS}=-50V,f=1MHz)	C_{ISS}	—	—	7920	pF
Common Source Output Capacitance 共源輸出電容(V_{GS}=0V, V_{DS}=-50V,f=1MHz)	C_{OSS}	—	—	177	pF
Reverse Transfer Capacitance 回饋電容(V_{GS}=0V, V_{DS}=-50V,f=1MHz)	C_{RSS}	—	—	168	pF
Total Gate Charge 總柵電荷密度 (V_{DS}=-50V, I_D=-20A, V_{GS}=-10V)	Q_g	—	45	—	nC
Gate Source Charge 柵源電荷密度 (V_{DS}=-50V, I_D=-20A, V_{GS}=-10V)	Q_{gs}	—	16	—	nC
Gate Drain Charge 柵漏電荷密度 (V_{DS}=-50V, I_D=-20A, V_{GS}=-10V)	Q_{gd}	—	34	—	nC
Turn-On Delay Time 開启延迟時間 (V_{DS}=-50V, I_D=-10A, R_{GEN}=3.3Ω,V_{GS}=-10V)	$t_{d(on)}$	—	15	—	ns
Turn-On Rise Time 開启上升時間 (V_{DS}=-50V, I_D=-10A, R_{GEN}=3.3Ω,V_{GS}=-10V)	t_r	—	30	—	ns
Turn-Off Delay Time 關断延迟時間 (V_{DS}=-50V, I_D=-10A, R_{GEN}=3.3Ω,V_{GS}=-10V)	$t_{d(off)}$	—	125	—	ns
Turn-On Fall Time 開启下降時間 (V_{DS}=-50V, I_D=-10A, R_{GEN}=3.3Ω,V_{GS}=-10V)	t_f	—	110	—	ns

■TYPICAL CHARACTERISTIC CURVE
典型特性曲线

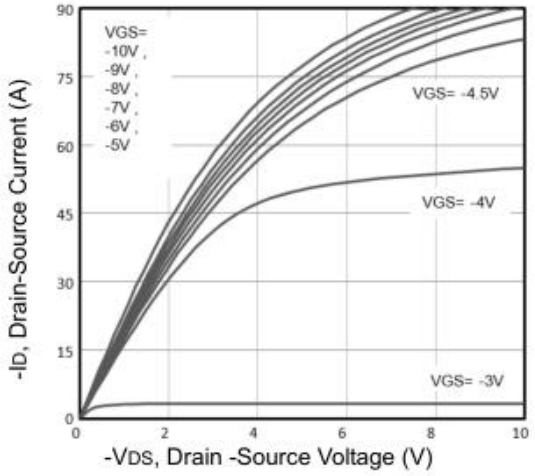


Fig 1: Output Characteristics

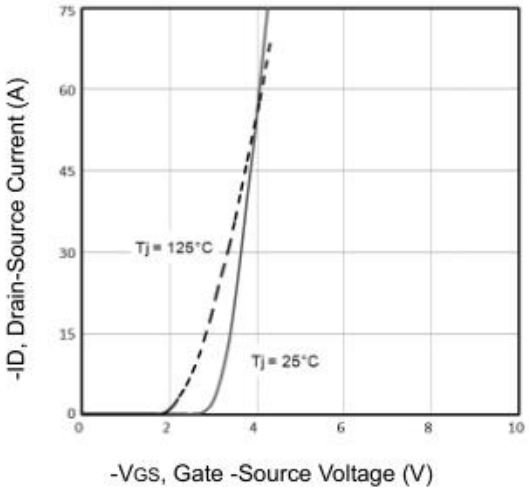


Figure 2: Transfer Characteristics

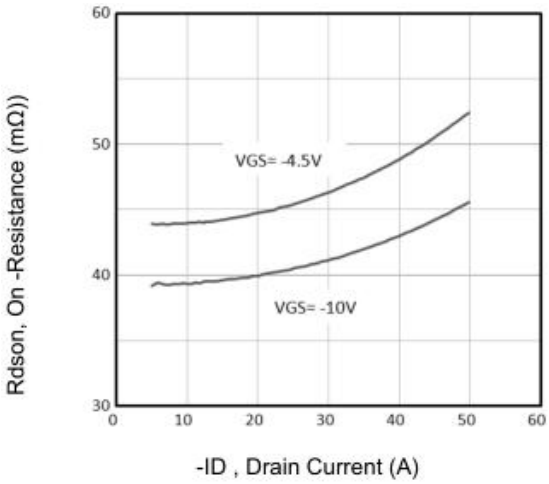


Figure 3: On-Resistance vs. ID & VGS

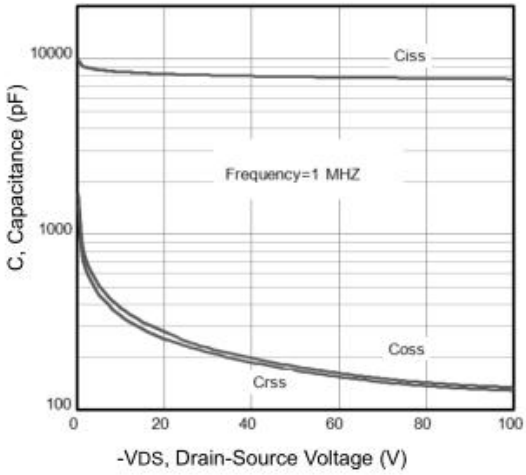


Figure 4: Capacitance Characteristics

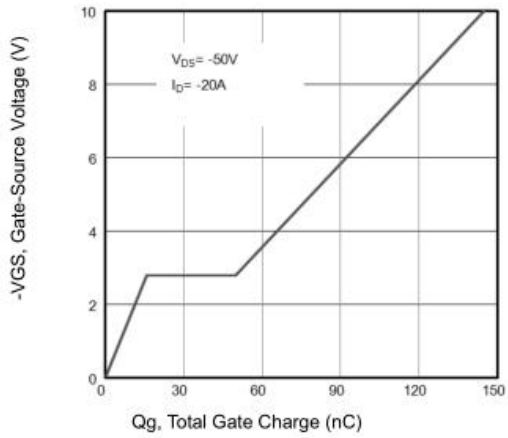


Figure 5: Gate-Charge Characteristics

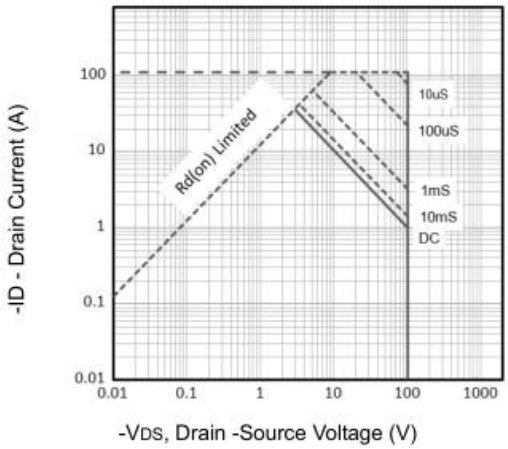
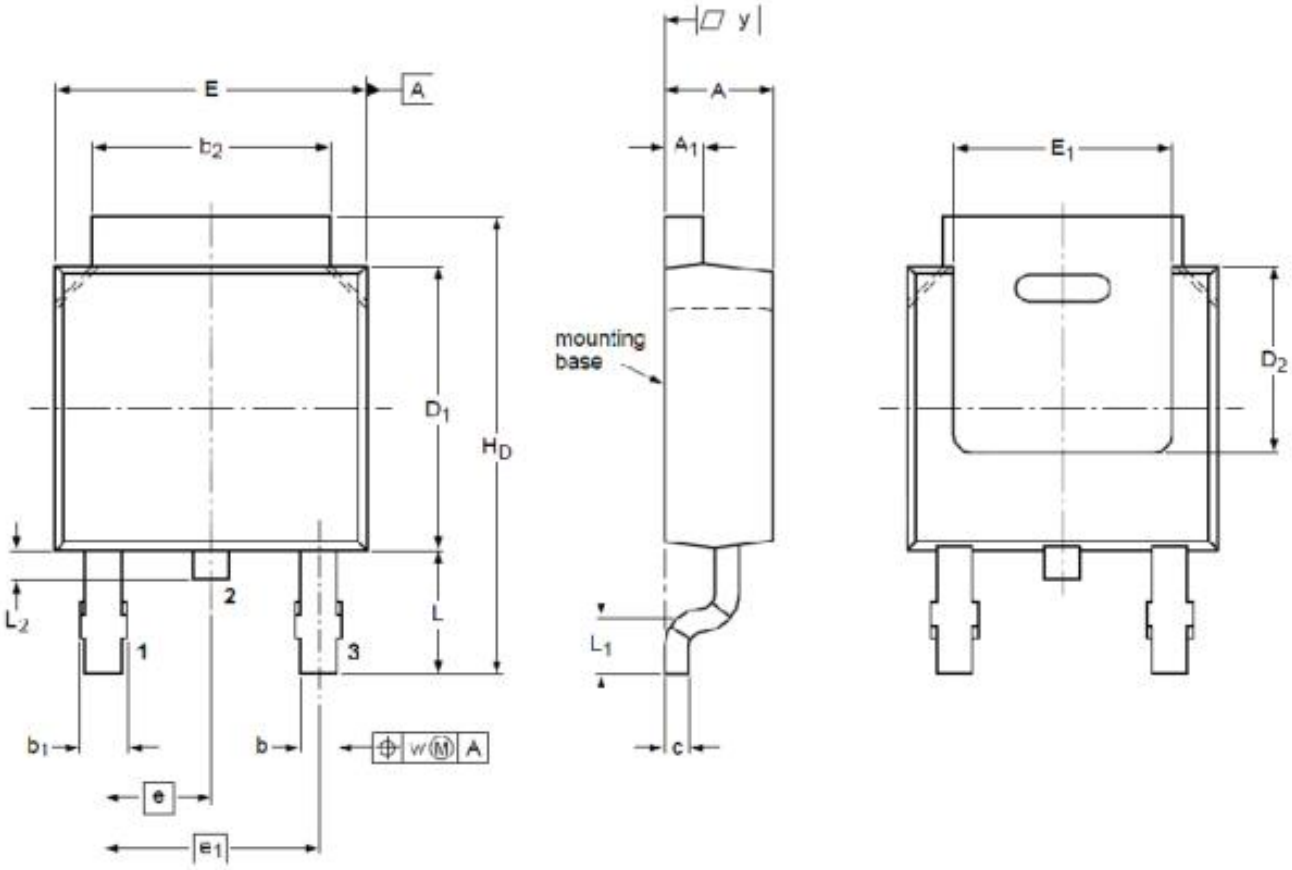


Figure 6: Safe Operating Area

■DIMENSION 外形封裝尺寸

Unit 單位:mm 毫米



Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	2.22	2.30	2.38	A_1	0.4	0.53	0.65
b	0.68	0.78	0.89	b_1	0.90	0.98	1.10
b_2	5.20	5.33	5.55	c	0.45	0.5	0.55
D_1	5.98	6.10	6.22	D_2	--	4.00	--
E	6.47	6.60	6.73	E_1	5.10	5.28	5.45
e	--	2.28	--	e_1	--	4.57	--
H_D	9.60	10.08	10.40	L	2.75	2.95	3.05
L_1	--	0.50	--	L_2	0.50	--	1.10
w	--	0.20	--	y	0.20	--	--