



宇芯微
YSMICRO

东莞市宇芯电子有限公司
DONGGUAN YUSHIN ELECTRONICS CO.,LTD
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GMP75N75L

N-channel 75V, 9mΩ, 75A, TO-220 Low Qg Power MOSFET 低栅电荷密度功率场效应管

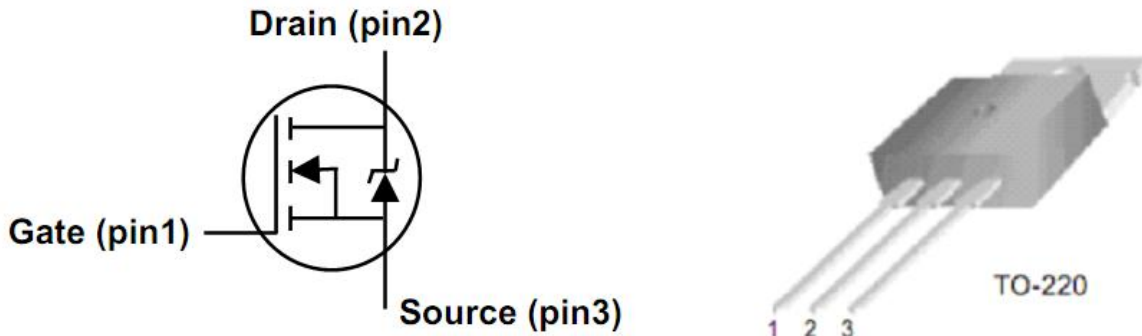
■ Features 特点

- Low gate charge 低栅电荷密度
- Ultra low on-resistance 超低导通电阻
- Advanced trench technology 优秀沟槽技术
- Fast switching 快速开关能力
- High operating temperature 高工作温度范围

■ Applications 应用

- High Efficiency Synchronous Rectification 高效率同步整流
- DC-DC converters and UPS 直流直流变换和不间断电源
- PWM motor controls 脉宽调制电机控制

■ 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}	75	V
Gate- Source Voltage 栅极-源极电压	V_{GS}	+25	V
Drain Current (continuous)漏极电流-连续	I_D (at $T_C = 25^\circ C$ at $T_C = 100^\circ C$)	75 56	A
Drain Current (pulsed)漏极电流-脉冲	I_{DM}	310	A
Total Device Dissipation 总耗散功率	P_{TOT} (at $T_C = 25^\circ C$)	140	W
Single Pulse Avalanche Energy 雪崩能量	E_{AS}	120	mJ
Thermal Resistance Junction-Case 热阻	$R_{\theta JC}$	1	$^\circ C/W$
Junction/Storage Temperature 结温/储存温度	T_J, T_{stg}	-55~175	$^\circ C$



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■ **Electrical Characteristics 電特性**

($T_A=25^{\circ}\text{C}$ unless otherwise noted 如無特殊說明，溫度為 25°C)

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($I_D=250\mu\text{A}, V_{GS}=0\text{V}$)	BV_{DSS}	75	—	—	V
Gate Threshold Voltage 柵極開啓電壓($I_D=250\mu\text{A}, V_{GS}=V_{DS}$)	$V_{GS(th)}$	2	2.7	4	V
Zero Gate Voltage Drain Current 零柵壓漏極電流($V_{GS}=0\text{V}, V_{DS}=64\text{V}$)	I_{DSS}	—	—	1	μA
Gate Body Leakage 柵極漏電流($V_{GS}=\pm 25\text{V}, V_{DS}=0\text{V}$)	I_{GSS}	—	—	± 100	nA
Static Drain-Source On-State Resistance 靜態漏源導通電阻($I_D=40\text{A}, V_{GS}=10\text{V}$)	$R_{DS(ON)}$	—	7.5	9	$\text{m}\Omega$
Forward Trans-conductance 正向傳輸導納($I_D=40\text{A}, V_{DS}=10\text{V}$)	g_{FS}	20	—	—	S
Source Drain Current 源極-漏極電流	I_{SD}	—	—	75	A
Diode Forward Voltage Drop 內附二極管正向壓降($I_{SD}=30\text{A}, V_{GS}=0\text{V}$)	V_{SD}	—	—	1.3	V
Gate Resistance 柵極電阻 ($V_{GS}=0\text{V}, V_{DS}=50\text{V}, f=1\text{MHz}$)	R_g	—	1.5	—	Ω
Input Capacitance 輸入電容 ($V_{GS}=0\text{V}, V_{DS}=50\text{V}, f=1\text{MHz}$)	C_{ISS}	—	2980	—	pF
Common Source Output Capacitance 共源輸出電容($V_{GS}=0\text{V}, V_{DS}=50\text{V}, f=1\text{MHz}$)	C_{OSS}	—	280	—	pF
Total Gate Charge 柵極電荷密度 ($V_{DS}=38\text{V}, I_D=46\text{A}, V_{GS}=10\text{V}$)	Q_g	—	56	—	nC
Gate Source Charge 柵源電荷密度 ($V_{DS}=38\text{V}, I_D=46\text{A}, V_{GS}=10\text{V}$)	Q_{gs}	—	13	—	nC
Gate Drain Charge 柵漏電荷密度 ($V_{DS}=38\text{V}, I_D=46\text{A}, V_{GS}=10\text{V}$)	Q_{gd}	—	16	—	nC
Turn-ON Delay Time 開啓延遲時間 ($V_{DS}=49\text{V}, I_D=46\text{A}, R_{GEN}=6.8\Omega, V_{GS}=10\text{V}$)	$t_{d(on)}$	—	16	—	ns
Turn-OFF Delay Time 關斷延遲時間 ($V_{DS}=49\text{V}, I_D=46\text{A}, R_{GEN}=6.8\Omega, V_{GS}=10\text{V}$)	$t_{d(off)}$	—	43	—	ns

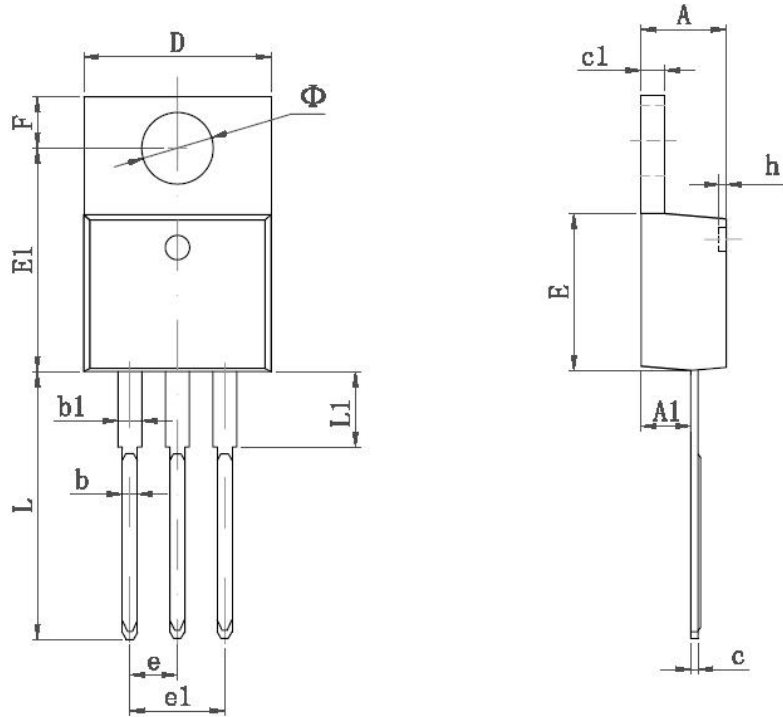


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■ Dimension 外形封装尺寸



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540TYPE		0.100TYPE	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155