



N-channel 400V, 5.5A, TO-252 Power MOSFET 功率場效應管

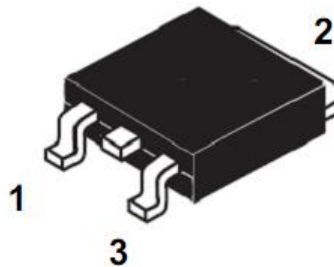
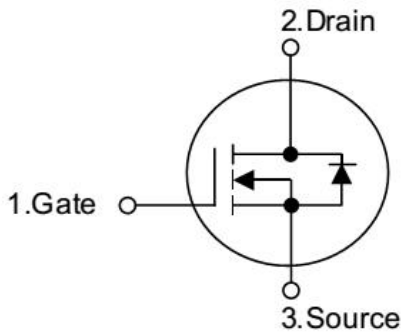
■ **Features 特點**

Ultra low on-resistance 超低導通電阻
Low gate charge 低柵電荷密度
Fast switching 快速開關能力

■ **Applications 應用**

Switch mode power supplies 開關電源
DC-DC converters and UPS 直流直流變換和不間斷電源
PWM motor controls 脈寬調製電機控制
General switching applications 普通開關應用

■ **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}	400	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 $T_C = 25^\circ C$)	5.5	A
Drain Current (pulsed)漏極電流-脈沖	I_{DM}	20	A
Total Device Dissipation 總耗散功率	P_{TOT} (at $T_C = 25^\circ C$)	75	W
Avalanche Energy, Single Pulsed 單脈沖雪崩能量	E_{AS}	300	mJ
Thermal Resistance Junction-Case 熱阻	$R_{\theta JC}$	1.7	$^\circ C/W$
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-55~150	$^\circ C$



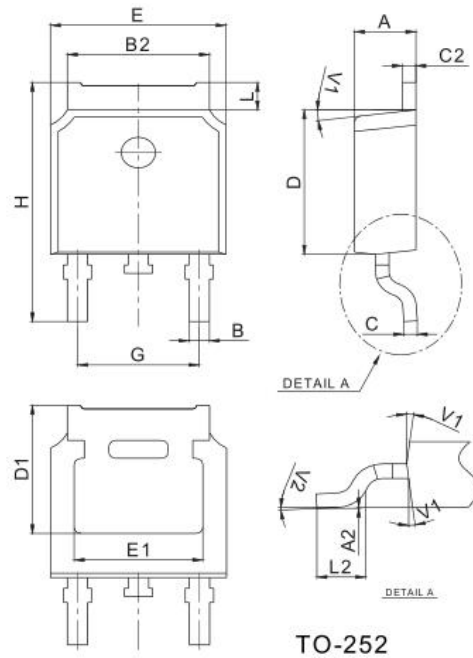
■ Electrical Characteristics 電特性

($T_A=25^{\circ}\text{C}$ 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}	400	—	—	V
Gate Threshold Voltage 柵極開啓電壓($I_D=250\mu\text{A}, V_{GS}=V_{DS}$)	$V_{GS(th)}$	2	3	4	V
Zero Gate Voltage Drain Current 零柵壓漏極電流($V_{GS}=0\text{V}, V_{DS}=200\text{V}$)	I_{DSS}	—	—	1	μA
Gate Body Leakage 柵極漏電流($V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$)	I_{GSS}	—	—	± 100	nA
Static Drain-Source On-State Resistance 靜態漏源導通電阻($I_D=3.3\text{A}, V_{GS}=10\text{V}$)	$R_{DS(ON)}$	—	750	1000	$\text{m}\Omega$
Forward Transfer Admittance 正向傳輸導納 ($V_{DS}=15\text{V}, I_D=3.5\text{A}$)	G_{FS}	2.9	—	—	S
Diode Forward Voltage Drop 內附二極管正向壓降($I_{SD}=5.5\text{A}, V_{GS}=0\text{V}$)	V_{SD}	—	—	1.6	V
Input Capacitance 輸入電容 ($V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$)	C_{ISS}	—	680	—	pF
Common Source Output Capacitance 共源輸出電容($V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$)	C_{OSS}	—	135	—	pF
Gate Source Charge 柵源電荷密度 ($V_{DS}=320\text{V}, I_D=5.5\text{A}, V_{GS}=10\text{V}$)	Q_{gs}	—	8	—	nC
Gate Drain Charge 柵漏電荷密度 ($V_{DS}=320\text{V}, I_D=5.5\text{A}, V_{GS}=10\text{V}$)	Q_{gd}	—	10	—	nC
Turn-On Delay Time 開啓延遲時間 ($V_{DS}=200\text{V}, I_D=3.5\text{A}, R_{GEN}=25\Omega, V_{GS}=10\text{V}$)	$t_{d(on)}$	—	12	—	ns
Turn-On Rise Time 開啓上升時間 ($V_{DS}=200\text{V}, I_D=3.5\text{A}, R_{GEN}=25\Omega, V_{GS}=10\text{V}$)	t_r	—	22	—	ns
Turn-Off Delay Time 關斷延遲時間 ($V_{DS}=200\text{V}, I_D=3.5\text{A}, R_{GEN}=25\Omega, V_{GS}=10\text{V}$)	$t_{d(off)}$	—	50	—	ns
Turn-On Fall Time 開啓下降時間 ($V_{DS}=200\text{V}, I_D=3.5\text{A}, R_{GEN}=25\Omega, V_{GS}=10\text{V}$)	t_f	—	48	—	ns



■DIMENSION 外形封裝尺寸



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°