



**N-channel 200V, 9A, TO-252 Power MOSFET 功率場效應管**

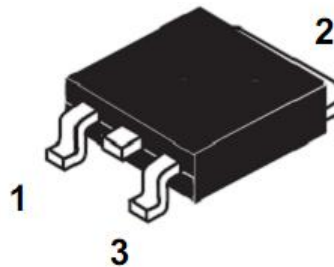
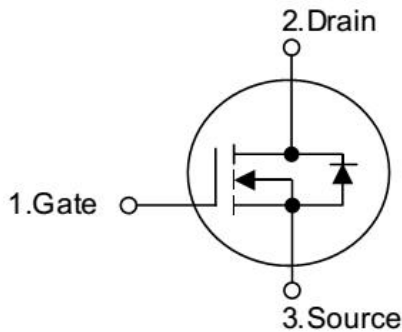
■ **Features 特點**

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	$BV_{DSS}$	200	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 $T_C = 25^\circ C$ )	9	A
Drain Current (pulsed)漏極電流-脈沖	$I_{DM}$	36	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	$E_{AS}$	100	mJ
Thermal Resistance Junction-Ambient 熱阻	$R_{\theta JA}$	1.7	$^\circ C/W$
Junction/Storage Temperature 結溫/儲存溫度	$T_J, T_{stg}$	-55~150	$^\circ C$



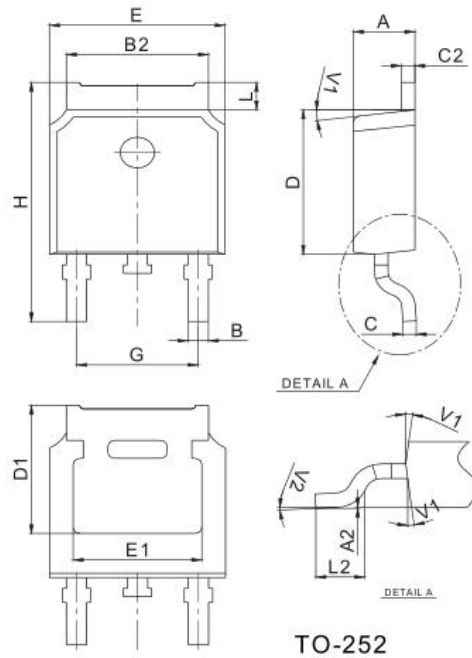
■ Electrical Characteristics 電特性

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

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( $I_D=250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	200	—	—	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	$\mu\text{A}$
Gate Body Leakage 柵極漏電流( $V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 100$	nA
Static Drain-Source On-State Resistance 静态漏源導通電阻( $I_D=4.5\text{A}, V_{GS}=10\text{V}$ )	$R_{DS(ON)}$	—	240	300	$\text{m}\Omega$
Forward Transfer Admittance 正向傳輸導納 ( $V_{DS}=15\text{V}, I_D=4.5\text{A}$ )	$G_{FS}$	5	—	—	S
Diode Forward Voltage Drop 內附二極管正向壓降( $I_{SD}=9\text{A}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	1.4	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( $V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	100	—	pF
Gate Source Charge 柵源電荷密度 ( $V_{DS}=160\text{V}, I_D=9\text{A}, V_{GS}=10\text{V}$ )	$Q_{gs}$	—	2.5	—	nC
Gate Drain Charge 柵漏電荷密度 ( $V_{DS}=160\text{V}, I_D=9\text{A}, V_{GS}=10\text{V}$ )	$Q_{gd}$	—	10	—	nC
Turn-On Delay Time 開啓延遲時間 ( $V_{DS}=100\text{V}, I_D=9\text{A}, R_{GEN}=25\Omega, V_{GS}=10\text{V}$ )	$t_{d(on)}$	—	12	—	ns
Turn-On Rise Time 開啓上升時間 ( $V_{DS}=100\text{V}, I_D=9\text{A}, R_{GEN}=25\Omega, V_{GS}=10\text{V}$ )	$t_r$	—	22	—	ns
Turn-Off Delay Time 關斷延遲時間 ( $V_{DS}=100\text{V}, I_D=9\text{A}, R_{GEN}=25\Omega, V_{GS}=10\text{V}$ )	$t_{d(off)}$	—	50	—	ns
Turn-On Fall Time 開啓下降時間 ( $V_{DS}=100\text{V}, I_D=9\text{A}, R_{GEN}=25\Omega, V_{GS}=10\text{V}$ )	$t_f$	—	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°