



**N-channel 20V, DFN5\*6 MOSFET N-溝道場效應管**

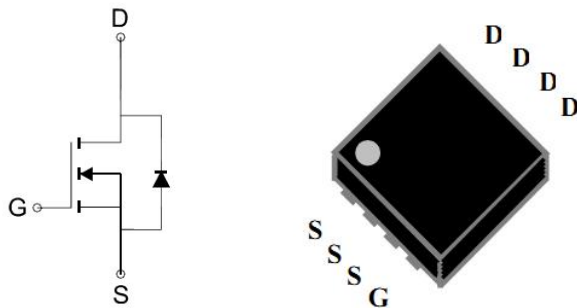
■ **Features 特點**

Low on-resistance 低導通電阻  
Advanced trench technology 優秀溝槽技術  
Backside heat sink 背面熱沉  
 $R_{DS(ON)} \leq 2.0m\Omega @ V_{GS}=4.5V$   
 $R_{DS(ON)} \leq 2.4m\Omega @ V_{GS}=2.5V$

■ **Applications 應用**

DC/DC Converter 直流/直流變換  
Power Management in Notebook CPU Core 筆記本 CPU 電源管理

■ **Internal Schematic Diagram 內部結構**



■ **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	$BV_{DSS}$	20	V
Gate- Source Voltage 柵極-源極電壓	$V_{GS}$	$\pm 12$	V
Drain Current (continuous) 漏極電流-連續	$I_D$ (at $T_C = 25^\circ C$ at $T_C = 70^\circ C$ )	110 100	A
Drain Current (pulsed) 漏極電流-脈沖	$I_{DM}$	340	A
Total Device Dissipation 總耗散功率	$P_{TOT}$ (at $T_C = 25^\circ C$ )	83	W
Avalanche energy L=0.05mH 雪崩能量	$E_{AS}$	123	mJ
Thermal Resistance Junction-Ambient 熱阻	$R_{\theta JA}$	55	$^\circ C/W$
Junction/Storage Temperature 結溫/儲存溫度	$T_J, T_{stg}$	-55~150	$^\circ C$



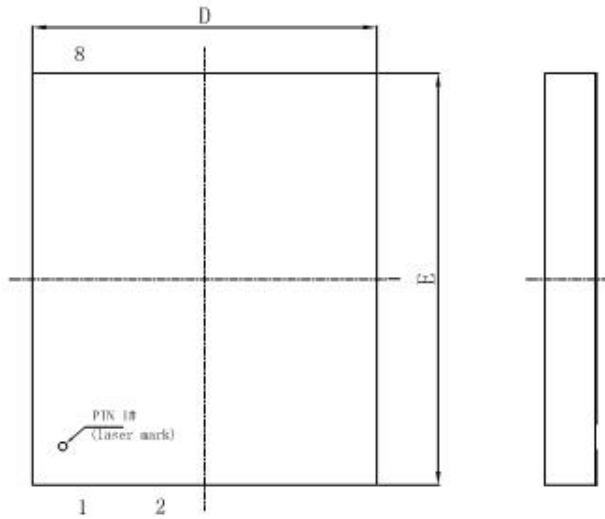
■ Electrical Characteristics 電特性

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

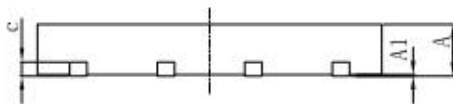
Characteristic 特性參數	Symbol 符號	Min 最小值	Typ 典型值	Max 最大值	Unit 單位
Drain-Source Breakdown Voltage 漏極-源極擊穿電壓( $I_D=250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	20	—	—	V
Gate Threshold Voltage 柵極開啓電壓( $I_D=250\mu\text{A}, V_{GS}=V_{DS}$ )	$V_{GS(th)}$	0.5	0.75	1.2	V
Zero Gate Voltage Drain Current 零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS}=20\text{V}$ )	$I_{DSS}$	—	—	1	$\mu\text{A}$
Gate Body Leakage 柵極漏電流( $V_{GS}=\pm 12\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 100$	nA
Static Drain-Source On-State Resistance 靜態漏源導通電阻( $I_D=20\text{A}, V_{GS}=4.5\text{V}$ ) ( $I_D=15\text{A}, V_{GS}=2.5\text{V}$ )	$R_{DS(ON)}$	—	1.4 1.6	2.0 2.4	$\text{m}\Omega$
Diode Forward Voltage Drop 內附二極管正向壓降( $I_{SD}=20\text{A}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	1.2	V
Input Capacitance 輸入電容 ( $V_{GS}=0\text{V}, V_{DS}=15\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	3500	—	pF
Common Source Output Capacitance 共源輸出電容( $V_{GS}=0\text{V}, V_{DS}=15\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	1300	—	pF
Reverse Transfer Capacitance 反向傳輸電容 ( $V_{GS}=0\text{V}, V_{DS}=15\text{V}, f=1\text{MHz}$ )	$C_{RSS}$	—	360	—	pF
Gate Source Charge 柵源電荷密度 ( $V_{DS}=15\text{V}, I_D=20\text{A}, V_{GS}=4.5\text{V}$ )	$Q_{gs}$	—	10	—	nC
Gate Drain Charge 柵漏電荷密度 ( $V_{DS}=15\text{V}, I_D=20\text{A}, V_{GS}=4.5\text{V}$ )	$Q_{gd}$	—	15	—	nC
Turn-On Delay Time 開啓延遲時間 ( $V_{DS}=15\text{V}, I_D=2\text{A}, R_{GEN}=3\Omega, V_{GS}=4.5\text{V}$ )	$t_{d(on)}$	—	12	—	ns
Turn-On Rise Time 開啓上升時間 ( $V_{DS}=15\text{V}, I_D=2\text{A}, R_{GEN}=3\Omega, V_{GS}=4.5\text{V}$ )	$t_r$	—	13	—	ns
Turn-Off Delay Time 關斷延遲時間 ( $V_{DS}=15\text{V}, I_D=2\text{A}, R_{GEN}=3\Omega, V_{GS}=4.5\text{V}$ )	$t_{d(off)}$	—	45	—	ns
Turn-On Fall Time 開啓下降時間 ( $V_{DS}=15\text{V}, I_D=2\text{A}, R_{GEN}=3\Omega, V_{GS}=4.5\text{V}$ )	$t_f$	—	32	—	ns



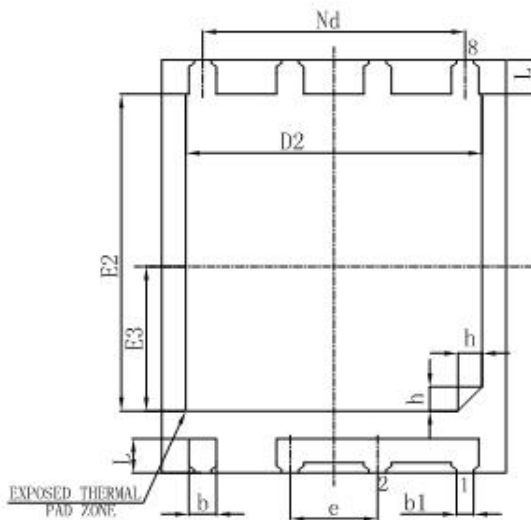
■ DIMENSION 外形封裝尺寸



TOP VIEW



SIDE VIEW



BOTTOM VIEW

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0	0.02	0.05
b	0.35	0.40	0.45
b1	0.25REF		
c	0.18	0.203	0.25
D	4.90	5.00	5.10
D2	4.20	4.30	4.40
Nd	3.81BSC		
e	1.27BSC		
E	5.90	6.00	6.10
E2	4.50	4.60	4.70
E3	2.00	2.10	2.20
L	0.45	0.50	0.55
h	0.30	0.35	0.40
UPPER CASE (MIL)	177X197		