



N-channel 20V, 110A, DFN5*6-8 Power MOSFET 功率場效應管

■ **Features 特點**

Low on-resistance 低導通電阻

Maximum DC current capability 最大直流電流能力

$R_{DS(ON)} < 2.6m\Omega @ V_{GS} = 10V$

$R_{DS(ON)} < 3.2m\Omega @ V_{GS} = 4.5V$

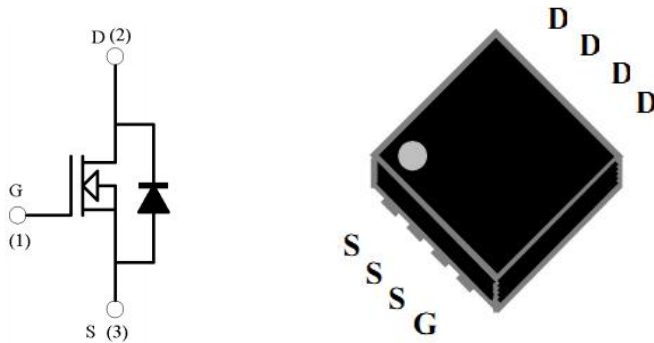
$R_{DS(ON)} < 4.5m\Omega @ V_{GS} = 2.5V$

■ **Applications 應用**

Load Switch Application 負載開關應用

PWM Application 脈寬調製應用

■ **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}	± 12	V
Drain Current (continuous) 漏極電流-連續	I_D (at $TC = 25^\circ C$)	110	A
Drain Current (pulsed) 漏極電流-脈衝	I_{DM}	200	A
Total Device Dissipation 總耗散功率	P_{TOT} (at $TC = 25^\circ C$)	85	W
Avalanche energy, single pulsed 雪崩能量	EAS	450	mJ
Thermal Resistance Junction to Case 熱阻	$R_{\theta JC}$	1.5	$^\circ C/W$
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-55~150	$^\circ C$



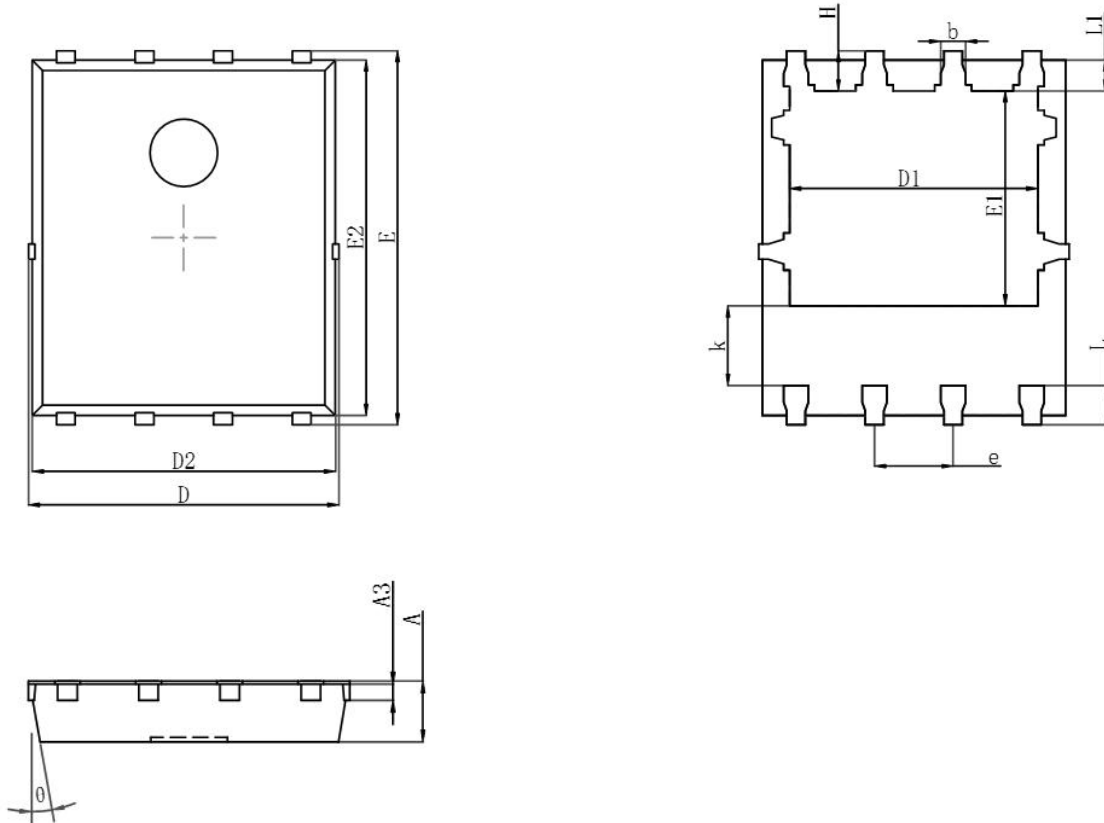
■ Electrical Characteristics 電特性

($T_A=25^{\circ}\text{C}$ 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}	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	1.1	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	μA
Gate Body Leakage 柵極漏電流($V_{GS}=\pm 12\text{V}, V_{DS}=0\text{V}$)	I_{GSS}	—	—	± 100	nA
Static Drain-Source On-State Resistance 静态漏源導通電阻($I_D=30\text{A}, V_{GS}=10\text{V}$) ($I_D=20\text{A}, V_{GS}=4.5\text{V}$) ($I_D=15\text{A}, V_{GS}=2.5\text{V}$)	$R_{DS(ON)}$	—	1.6 1.9 2.9	2.6 3.2 4.5	$\text{m}\Omega$
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 ($V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$)	C_{ISS}	—	3000	—	pF
Common Source Output Capacitance 共源輸出電容($V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$)	C_{OSS}	—	700	—	pF
Reverse Transfer Capacitance 反向傳輸電容 ($V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$)	C_{RSS}	—	390	—	pF
Total Gate Charge 總柵極電荷密度 ($V_{DS}=10\text{V}, I_D=20\text{A}, V_{GS}=10\text{V}$)	Q_g	—	30	—	nC
Gate Source Charge 柵源電荷密度 ($V_{DS}=10\text{V}, I_D=20\text{A}, V_{GS}=10\text{V}$)	Q_{gs}	—	10	—	nC
Gate Drain Charge 柵漏電荷密度 ($V_{DS}=10\text{V}, I_D=20\text{A}, V_{GS}=10\text{V}$)	Q_{gd}	—	20	—	nC
Turn-On Delay Time 開啓延遲時間 ($V_{DS}=10\text{V}, I_D=15\text{A}, R_{GEN}=3\Omega, V_{GS}=10\text{V}$)	$t_{d(on)}$	—	13	—	ns
Turn-On Rise Time 開啓上升時間 ($V_{DS}=10\text{V}, I_D=15\text{A}, R_{GEN}=3\Omega, V_{GS}=10\text{V}$)	t_r	—	36	—	ns
Turn-Off Delay Time 關斷延遲時間 ($V_{DS}=10\text{V}, I_D=15\text{A}, R_{GEN}=3\Omega, V_{GS}=10\text{V}$)	$t_{d(off)}$	—	40	—	ns
Turn-On Fall Time 開啓下降時間 ($V_{DS}=10\text{V}, I_D=15\text{A}, R_{GEN}=3\Omega, V_{GS}=10\text{V}$)	t_f	—	33	—	ns



■ DIMENSION 外形封裝尺寸



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
theta	10°	12°	10°	12°