



N+P channel , SOP-8 MOSFET N+P 溝道場效應管

■ Features 特點

Low on-resistance and maximum DC current capability 低導通電阻和最大直流電流能力

Super high density cell design 超高元胞密度設計

N channel 6A: $R_{DS(ON)} < 28m\Omega @ V_{GS} = 10V$

$R_{DS(ON)} < 33m\Omega @ V_{GS} = 4.5V$

P channel -6A: $R_{DS(ON)} < 30m\Omega @ V_{GS} = -10V$

$R_{DS(ON)} < 45m\Omega @ V_{GS} = -4.5V$

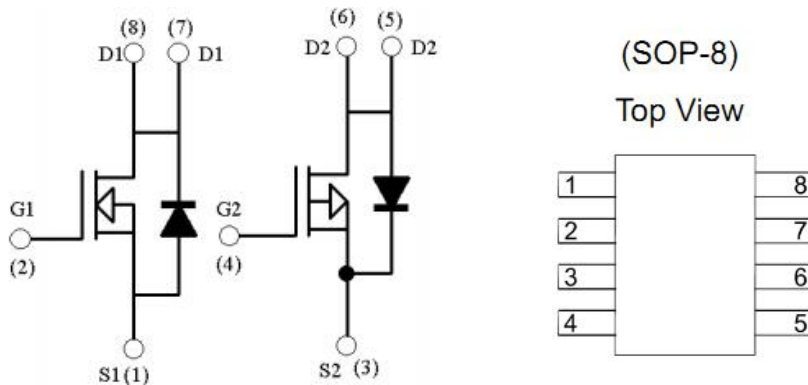
■ Applications 應用

Power Management in Note book 筆記本電源管理

Portable Equipment 便攜式設備

Battery Powered System 電池電源系統

■ Internal Schematic Diagram 內部結構



■ Absolute Maximum Ratings 最大額定值

Characteristic 特性參數	Symbol 符號	Rating 額定值		Unit 單位
Drain Current (continuous) 漏極電流 - 連續	I_D (at $T_C = 125^\circ C$)	6	-6	A
Drain Current (pulsed) 漏極電流 - 脈沖	I_{DM}	30	-30	A
Total Device Dissipation 總耗散功率	P_{TOT} (at $T_C = 25^\circ C$)	1.6	1.5	W
Thermal Resistance Junction-Ambient 熱阻	$R_{\theta JA}$	78	81	$^\circ C/W$
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-55~150		$^\circ C$



■ N Channel 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}	30	—	—	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	1	1.5	V
Zero Gate Voltage Drain Current 零柵壓漏極電流($V_{GS}=0\text{V}, V_{DS}=16\text{V}$)	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 靜態漏源導通電阻($I_D=6\text{A}, V_{GS}=10\text{V}$) ($I_D=3\text{A}, V_{GS}=4.5\text{V}$)	$R_{DS(on)}$	—	25 30	28 33	$\text{m}\Omega$
Diode Forward Voltage Drop 內附二極管正向壓降($I_{SD}=1.7\text{A}, V_{GS}=0\text{V}$)	V_{SD}	—	0.8	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}	—	310	—	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}	—	70	—	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}	—	20	—	pF
Gate Resistance 柵極電阻 ($V_{GS}=0\text{V}, V_{DS}=0\text{V}, f=1\text{MHz}$)	R_g	—	—	5	Ω
Gate Source Charge 柵源電荷密度 ($V_{DS}=15\text{V}, I_D=6\text{A}, V_{GS}=10\text{V}$)	Q_{gs}	—	2	—	nC
Gate Drain Charge 柵漏電荷密度 ($V_{DS}=15\text{V}, I_D=6\text{A}, V_{GS}=10\text{V}$)	Q_{gd}	—	2.5	—	nC
Turn-On Delay Time 開啓延遲時間 ($V_{DS}=15\text{V}, I_D=1\text{A}, R_{GEN}=6\Omega, V_{GS}=10\text{V}$)	$t_{d(on)}$	—	9	—	ns
Turn-On Rise Time 開啓上升時間 ($V_{DS}=15\text{V}, I_D=1\text{A}, R_{GEN}=6\Omega, V_{GS}=10\text{V}$)	t_r	—	14	—	ns
Turn-Off Delay Time 關斷延遲時間 ($V_{DS}=15\text{V}, I_D=1\text{A}, R_{GEN}=6\Omega, V_{GS}=10\text{V}$)	$t_{d(off)}$	—	32	—	ns
Turn-On Fall Time 開啓下降時間 ($V_{DS}=15\text{V}, I_D=1\text{A}, R_{GEN}=6\Omega, V_{GS}=10\text{V}$)	t_f	—	3	—	ns



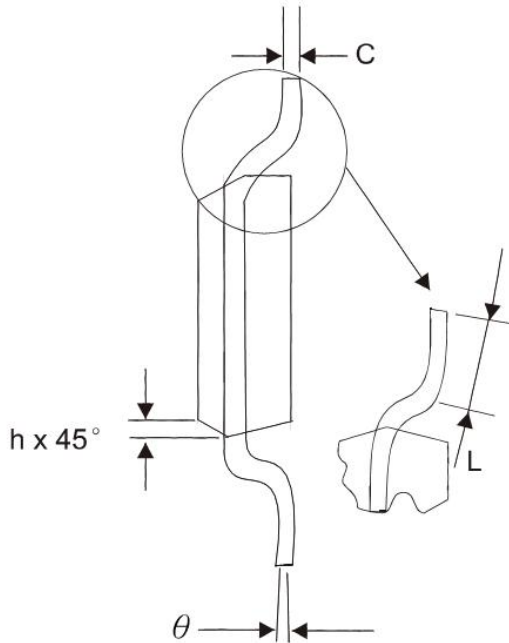
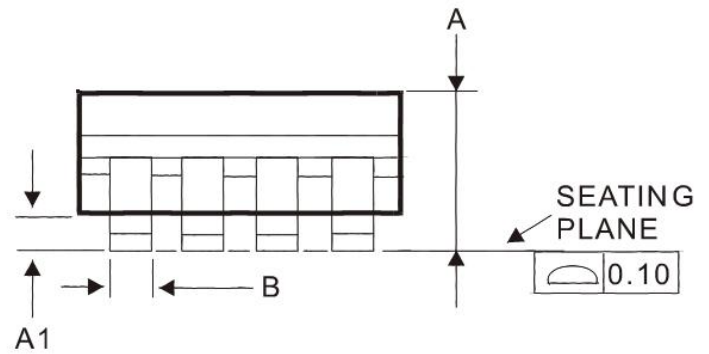
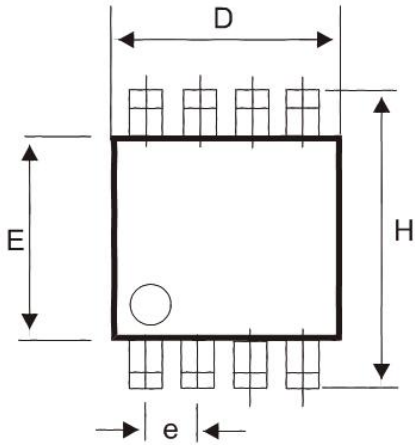
■ P Channel Electrical Characteristics 電特性

($T_A=25^{\circ}\text{C}$ 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	-1	-1.5	V
Zero Gate Voltage Drain Current 零柵壓漏極電流($V_{GS}=0\text{V}, V_{DS}=-16\text{V}$)	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 靜態漏源導通電阻($I_D=-6\text{A}, V_{GS}=-10\text{V}$) ($I_D=-3\text{A}, V_{GS}=-4.5\text{V}$)	$R_{DS(ON)}$	—	28 42	30 45	$\text{m}\Omega$
Diode Forward Voltage Drop 內附二極管正向壓降($I_{SD}=-1.7\text{A}, V_{GS}=0\text{V}$)	V_{SD}	—	-0.8	-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}	—	360	—	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}	—	70	—	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}	—	17	—	pF
Gate Resistance 柵極電阻 ($V_{GS}=0\text{V}, V_{DS}=0\text{V}, f=1\text{MHz}$)	R_g	—	—	5	Ω
Gate Source Charge 柵源電荷密度 ($V_{DS}=-15\text{V}, I_D=-6\text{A}, V_{GS}=-10\text{V}$)	Q_{gs}	—	4	—	nC
Gate Drain Charge 柵漏電荷密度 ($V_{DS}=-15\text{V}, I_D=-6\text{A}, V_{GS}=-10\text{V}$)	Q_{gd}	—	3	—	nC
Turn-On Delay Time 開啓延遲時間 ($V_{DS}=-15\text{V}, I_D=-1\text{A}, R_{GEN}=6\Omega, V_{GS}=-10\text{V}$)	$t_{d(on)}$	—	27	—	ns
Turn-On Rise Time 開啓上升時間 ($V_{DS}=-15\text{V}, I_D=-1\text{A}, R_{GEN}=6\Omega, V_{GS}=-10\text{V}$)	t_r	—	11	—	ns
Turn-Off Delay Time 關斷延遲時間 ($V_{DS}=-15\text{V}, I_D=-1\text{A}, R_{GEN}=6\Omega, V_{GS}=-10\text{V}$)	$t_{d(off)}$	—	40	—	ns
Turn-On Fall Time 開啓下降時間 ($V_{DS}=-15\text{V}, I_D=-1\text{A}, R_{GEN}=6\Omega, V_{GS}=-10\text{V}$)	t_f	—	4	—	ns



■DIMENSION 外形封裝尺寸



DIM	MILLIMETERS	
	MIN	MAX
A	1.35	1.75
A1	0.10	0.25
B	0.35	0.49
C	0.18	0.25
D	4.80	5.00
E	3.80	4.00
e	1.27 BSC	
H	5.80	6.20
h	0.25	0.50
L	0.40	1.25
θ	0°	7°