



N-channel 400V, 5.5A, TO-263 Power MOSFET 功率場效應管

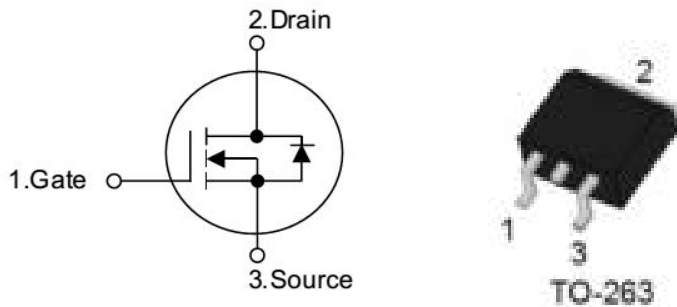
■ **Features 特點**

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**



■ **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}	22	A
Total Device Dissipation 總耗散功率	P_{TOT} (at $T_C = 25^\circ C$)	100	W
Avalanche Energy, Single Pulsed 單脈沖雪崩能量	E_{AS}	300	mJ
Thermal Resistance Junction-Case 熱阻	$R_{\theta JC}$	1.25	$^\circ C/W$
Junction/Storage Temperature 結溫/儲存溫度	T_J, T_{stg}	-55~150	$^\circ C$



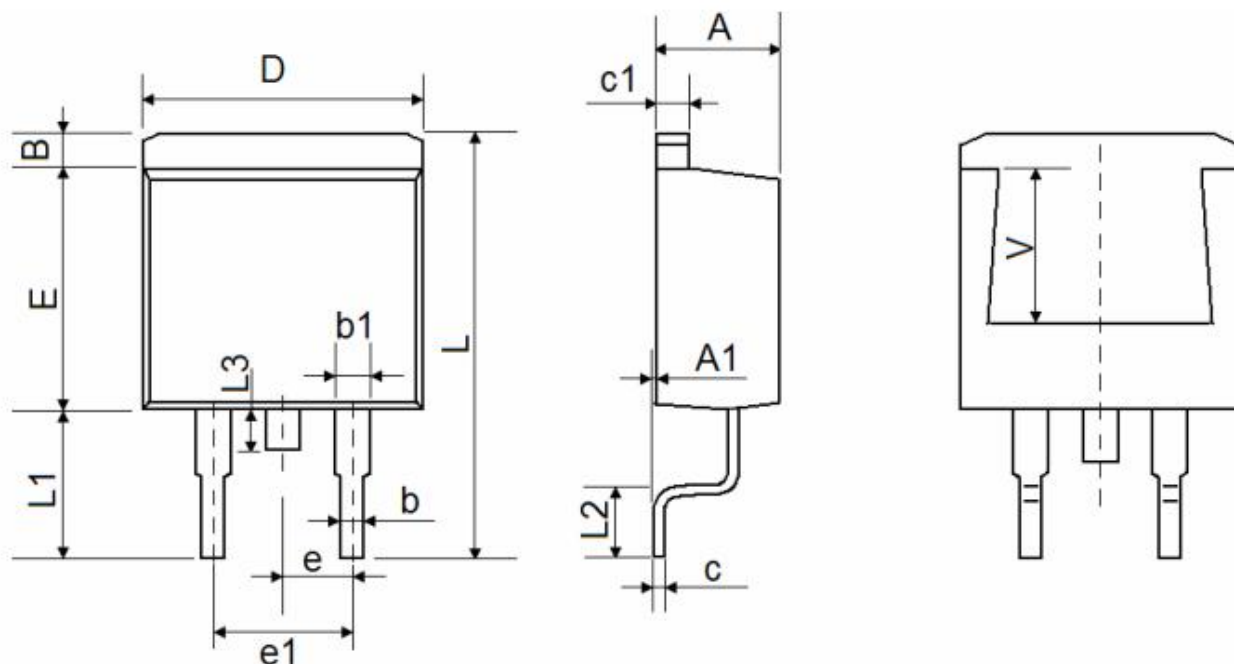
■ Electrical Characteristics 電特性

($T_A=25^{\circ}\text{C}$ 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 静态漏源導通電阻($I_D=3.3\text{A}, V_{GS}=10\text{V}$)	$R_{DS(ON)}$	—	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
Reverse Transfer Capacitance 回饋電容($V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$)	C_{RSS}	—	13	—	pF
Total Gate Charge 柵極電荷密度 ($V_{DS}=320\text{V}, I_D=5.5\text{A}, V_{GS}=10\text{V}$)	Q_g	—	21	—	nC
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



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.170	1.370	0.046	0.054
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	15.050	15.450	0.593	0.608
L1	5.080	5.480	0.200	0.216
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
V	5.600 REF		0.220 REF	