



**N-channel 60V,60A, TO-263 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

$R_{DS(ON)} < 17m\Omega @ V_{GS} = 10V$

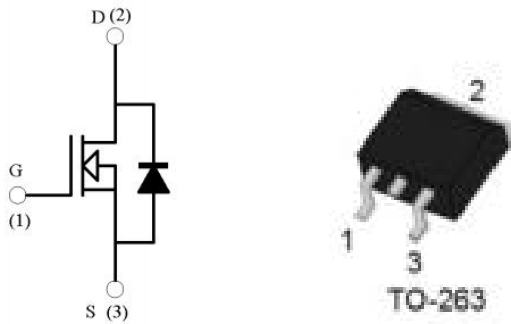
$R_{DS(ON)} < 25m\Omega @ V_{GS} = 4.5V$

■ **Applications 應用**

Power Switching Application 開關電源應用

Uninterruptible power supply 不間斷電源

■ **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	$BV_{DSS}$	60	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 $T_C = 25^\circ C$ )	60	A
Drain Current (pulsed)漏極電流-脈沖	$I_{DM}$	180	A
Total Device Dissipation 總耗散功率	$P_{TOT}$ (at $T_C = 25^\circ C$ )	100	W
Avalanche energy, single pulsed 雪崩能量	EAS	330	mJ
Thermal Resistance Junction to Ambient 熱阻	$R_{\theta JA}$	1.25	$^\circ C/W$
Junction/Storage Temperature 結溫/儲存溫度	$T_J, T_{stg}$	-55~150	$^\circ C$

EAS condition:  $T_J = 25^\circ C$ ,  $V_{DD} = 30V$ ,  $L = 0.5mH$ ,  $R_G = 25\Omega$ , Starting  $T_J = 25^\circ C$



■ Electrical Characteristics 電特性

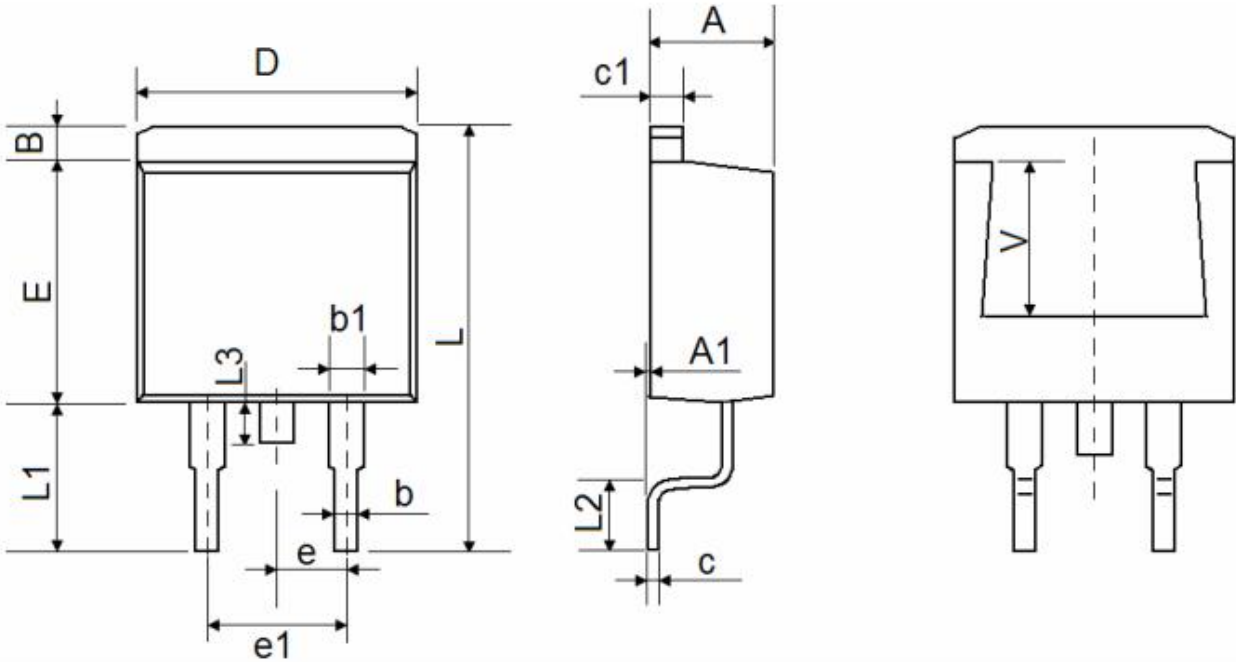
( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如無特殊說明，溫度為  $25^{\circ}\text{C}$ )

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( $I_D=250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	60	—	—	V
Gate Threshold Voltage 柵極開啓電壓( $I_D=250\mu\text{A}, V_{GS}=V_{DS}$ )	$V_{GS(th)}$	1	1.6	2.5	V
Zero Gate Voltage Drain Current 零柵壓漏極電流( $V_{GS}=0\text{V}, V_{DS}=60\text{V}$ )	$I_{DSS}$	—	—	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 靜態漏源導通電阻( $I_D=30\text{A}, V_{GS}=10\text{V}$ ) ( $I_D=20\text{A}, V_{GS}=4.5\text{V}$ )	$R_{DS(ON)}$	—	12 16	17 25	$\text{m}\Omega$
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 ( $V_{GS}=0\text{V}, V_{DS}=30\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	2050	—	pF
Common Source Output Capacitance 共源輸出電容( $V_{GS}=0\text{V}, V_{DS}=30\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	158	—	pF
Reverse Transfer Capacitance 反向傳輸電容 ( $V_{GS}=0\text{V}, V_{DS}=30\text{V}, f=1\text{MHz}$ )	$C_{RSS}$	—	120	—	pF
Total Gate Charge 總柵極電荷密度 ( $V_{DS}=30\text{V}, I_D=20\text{A}, V_{GS}=10\text{V}$ )	$Q_g$	—	50	—	nC
Gate Source Charge 柵源電荷密度 ( $V_{DS}=30\text{V}, I_D=20\text{A}, V_{GS}=10\text{V}$ )	$Q_{gs}$	—	6	—	nC
Gate Drain Charge 柵漏電荷密度 ( $V_{DS}=30\text{V}, I_D=20\text{A}, V_{GS}=10\text{V}$ )	$Q_{gd}$	—	15	—	nC
Turn-On Delay Time 開啓延遲時間 ( $V_{DS}=30\text{V}, I_D=2\text{A}, R_{GEN}=3\Omega, V_{GS}=10\text{V}$ )	$t_{d(on)}$	—	8	—	ns
Turn-On Rise Time 開啓上升時間 ( $V_{DS}=30\text{V}, I_D=2\text{A}, R_{GEN}=3\Omega, V_{GS}=10\text{V}$ )	$t_r$	—	5	—	ns
Turn-Off Delay Time 關斷延遲時間 ( $V_{DS}=30\text{V}, I_D=2\text{A}, R_{GEN}=3\Omega, V_{GS}=10\text{V}$ )	$t_{d(off)}$	—	28	—	ns
Turn-On Fall Time 開啓下降時間 ( $V_{DS}=30\text{V}, I_D=2\text{A}, R_{GEN}=3\Omega, V_{GS}=10\text{V}$ )	$t_f$	—	6	—	ns



■ Dimension 外形封裝尺寸

T0-263



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	