



P-channel -30V, -35A, TO-252 Power MOSFET 功率場效應管

■ **Features 特點**

Fast Switch 高速開關

$R_{DS(ON)Type1} 16.5m\Omega @ V_{GS} = -10V$

$R_{DS(ON)Type2} 25.6m\Omega @ V_{GS} = -4.5V$

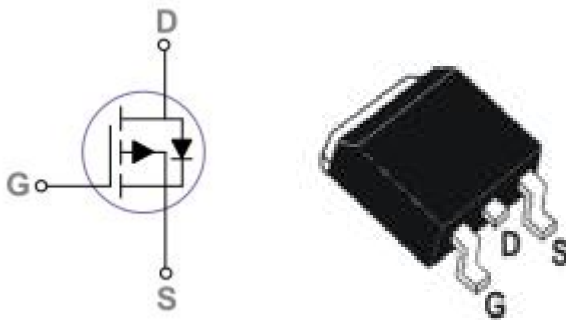
■ **Applications 應用**

Load Switch Application 負載開關應用

POL Application POL 應用

LED Application LED 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}	-30	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 $TC = 25^\circ C$)	-35	A
Drain Current (pulsed)漏極電流-脈衝	I_{DM}	-140	A
Total Device Dissipation 總耗散功率	P_{TOT} (at $TC = 25^\circ C$)	40	W
Thermal Resistance Junction to Ambient 熱阻	$R_{\theta JA}$	62	$^\circ C/W$
Thermal Resistance Junction to Case 熱阻	$R_{\theta JC}$	3.1	$^\circ C/W$
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}	-30	—	—	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($V_{GS}=0\text{V}, V_{DS}=-30\text{V}$)	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($I_D=-8\text{A}, V_{GS}=-10\text{V}$) ($I_D=-5\text{A}, V_{GS}=-4.5\text{V}$)	$R_{DS(ON)}$	—	16.5 25.6	20 32	$\text{m}\Omega$
Diode Forward Voltage Drop 內附二極管正向壓降($I_{SD}=-1\text{A}, V_{GS}=0\text{V}$)	V_{SD}	—	—	-1	V
Input Capacitance 輸入電容 ($V_{GS}=0\text{V}, V_{DS}=-15\text{V}, f=1\text{MHz}$)	C_{ISS}	—	1250	—	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}	—	160	—	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}	—	90	—	pF
Total Gate Charge 總柵極電荷密度 ($V_{DS}=-15\text{V}, I_D=-5\text{A}, V_{GS}=-4.5\text{V}$)	Q_g	—	5	—	nC
Gate Source Charge 柵源電荷密度 ($V_{DS}=-15\text{V}, I_D=-5\text{A}, V_{GS}=-4.5\text{V}$)	Q_{gs}	—	3.4	—	nC
Gate Drain Charge 柵漏電荷密度 ($V_{DS}=-15\text{V}, I_D=-5\text{A}, V_{GS}=-4.5\text{V}$)	Q_{gd}	—	4.2	—	nC
Turn-On Delay Time 開啓延遲時間 ($V_{DS}=-15\text{V}, I_D=-1\text{A}, R_{GEN}=6\Omega, V_{GS}=-10\text{V}$)	$t_{d(on)}$	—	5.8	—	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	—	18.8	—	ns
Turn-Off Delay Time 關斷延遲時間 ($V_{DS}=-15\text{V}, I_D=-1\text{A}, R_{GEN}=6\Omega, V_{GS}=-10\text{V}$)	$t_{d(off)}$	—	46.9	—	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	—	12.3	—	ns

■ TYPICAL CHARACTERISTIC CURVE

典型特性曲線

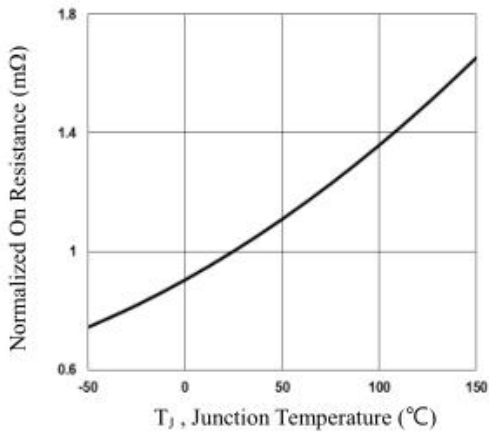


Figure 1: R_{ds(on)}- T_J

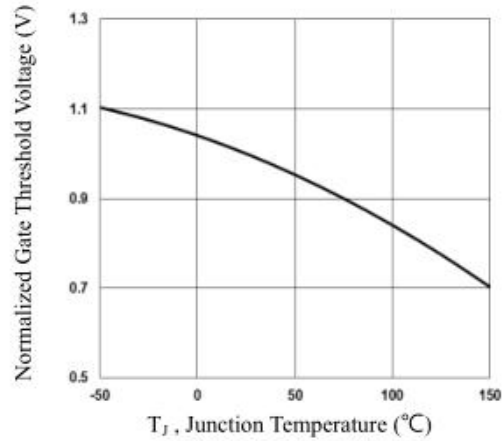


Figure 2: V_{TH}- T_J

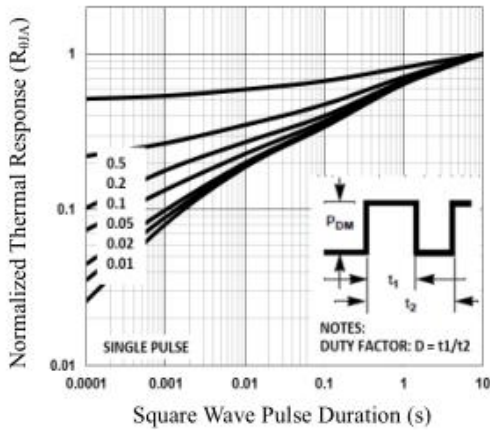


Figure 3: Transient Impedance

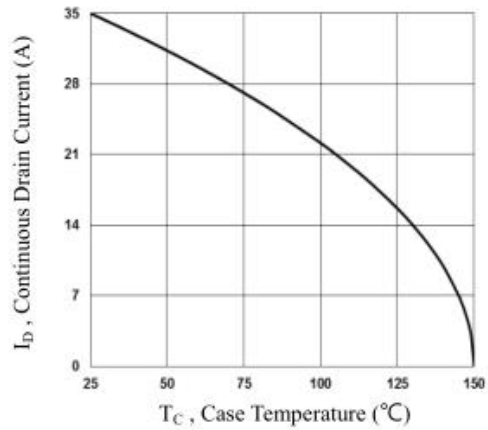


Figure 4: Drain Current -T_C

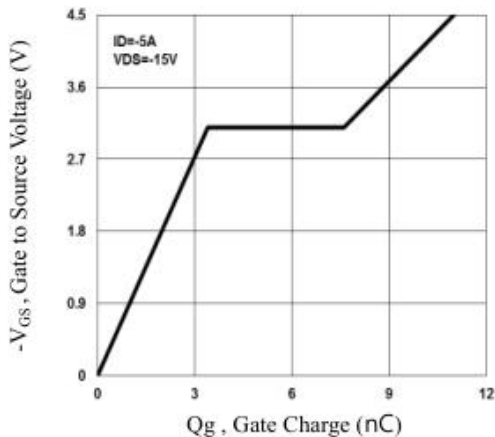


Figure 5: Gate-Charge Characteristics

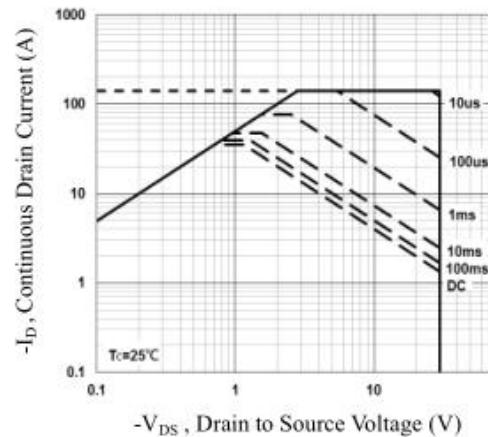
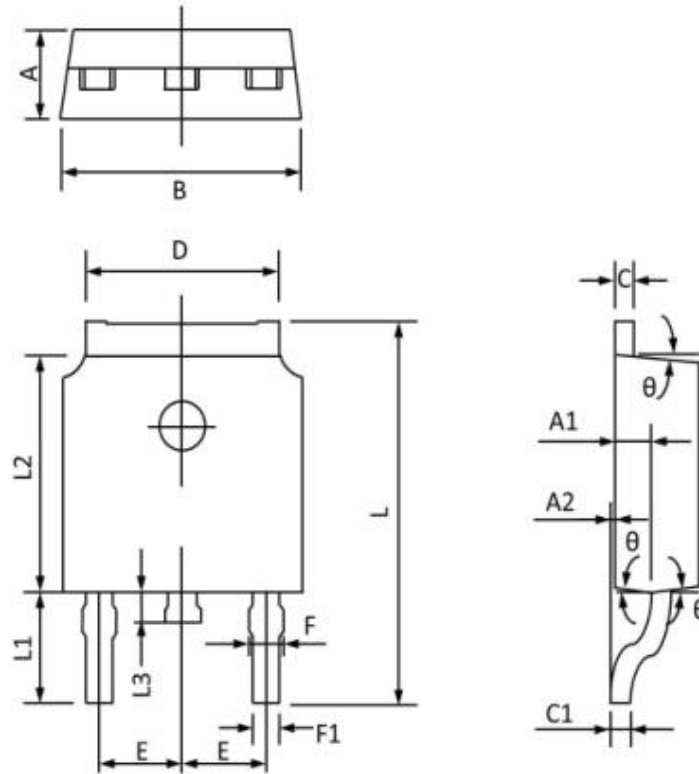


Figure 6: Safe Operating Area



■DIMENSION 外形封裝尺寸



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	2.400	2.200	0.094	0.087
A1	1.110	0.910	0.044	0.036
A2	0.150	0.000	0.006	0.000
B	6.800	6.400	0.268	0.252
C	0.580	0.450	0.023	0.018
C1	0.580	0.460	0.023	0.018
D	5.500	5.100	0.217	0.201
E	2.386	2.186	0.094	0.086
F	0.940	0.600	0.037	0.024
F1	0.860	0.500	0.034	0.020
L	10.400	9.400	0.409	0.370
L1	3.000	2.400	0.118	0.094
L2	6.200	5.400	0.244	0.213
L3	1.200	0.600	0.047	0.024
θ	9°	3°	9°	3°