GTN4430

Data Sheet

YGMOS Technology Crop.

30V N-Channel Enhancement-Mode MOSFET 30V N 沟道增强型 MOS 管

V_{DS}= 30V

$R_{DS(ON)}$, V_{gs}@10V, I_{ds}@25A = 6mΩ

$R_{DS(ON)}$, V_{gs}@4.5V, I_{ds}@25A = 10mΩ

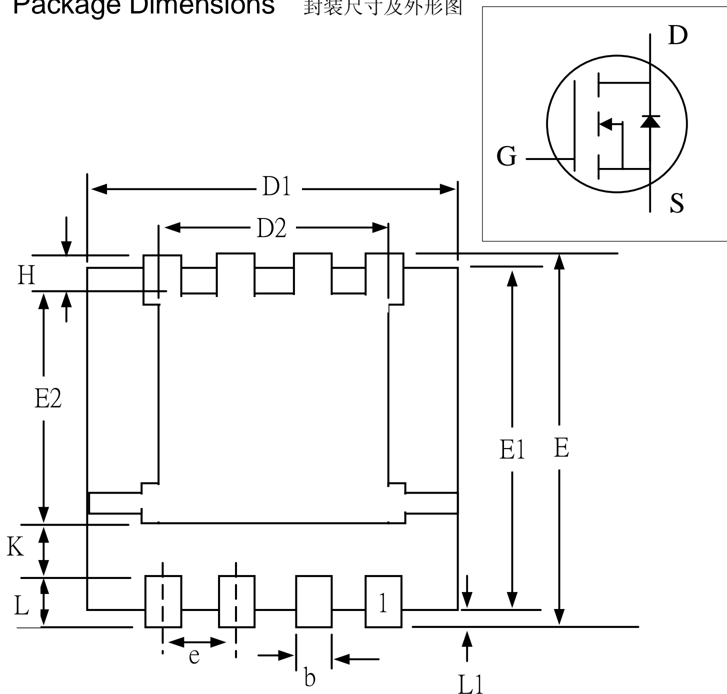
Features 特性

Advanced trench process technology 高级的加工技术

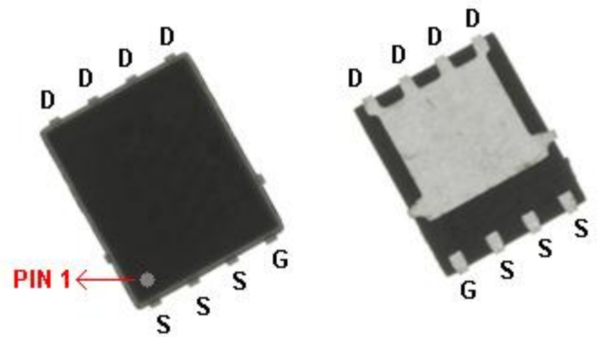
High Density Cell Design For Ultra Low On-Resistance 极低的导通电阻高密度的单元设计

PDFN5*6

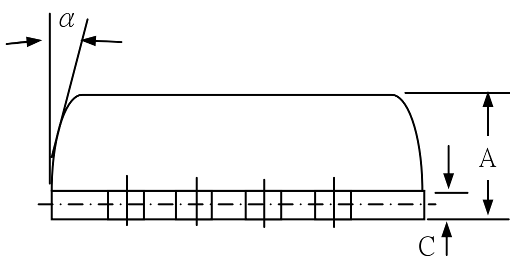
Package Dimensions 封装尺寸及外形图



BACKSIDE VIEW



Bottom View **Top View**



SYMBOLS	Millimeters		
	MIN	NOM	MAX
A	0.90	1.10	1.30
b	0.33	0.41	0.51
C	0.15	—	—
D1	4.80	4.90	5.10
D2	—	—	4.40
E	5.80	6.00	6.20
E1 (Ref.)	5.60	5.75	5.90
E2 (Ref.)	3.30	3.55	3.80
e	1.27 BSC		
H	—	—	0.90
K (Ref.)	0.70	—	—
L	0.35	0.55	0.75
L1	—	—	0.20
α	0°	—	12°

Maximum Ratings and Thermal Characteristics (TA = 25oC unless otherwise noted) 25 °C 极限参数和热特性

Parameter 极限参数		Symbol 符号	Limit 范围	Unit 单位
Drain-Source Voltage 漏源电压		V_{DS}	30	V
Gate-Source Voltage 栅源电压		V_{GS}	± 20	V
Continuous Drain Current 连续漏极电流		I_D	40	A
Pulsed Drain Current 脉冲漏极电流		I_{DM}	120	A
Maximum Power Dissipation 最大耗散功率	TA = 25°C	P_D	3.5	W
	TA = 75°C		2.1	
Operating Junction and Storage Temperature Range 使用及储存温度		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient Thermal Resistance (PCB mounted) 结环热阻		$R_{\theta JA}$	75	°C/W

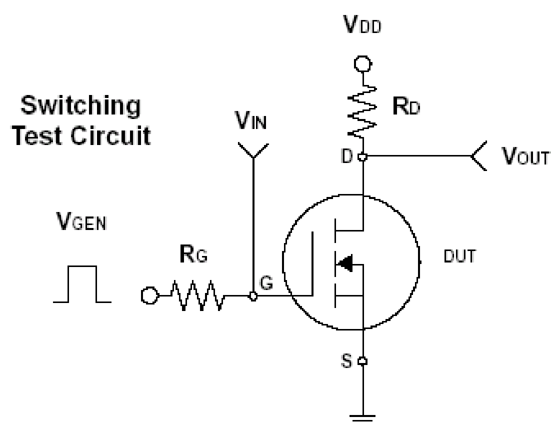
*The device mounted on 1in^2 FR4 board with 2 oz copper

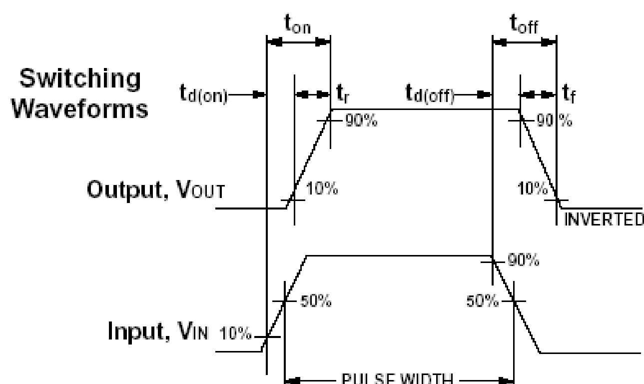
YGMOS Technology Crop.

ELECTRICAL CHARACTERISTICS 一般电气特性

Parameter 参数	符号	Test Condition 测试条件	最小值	典型值	最大值	单位
Static 静态参数						
Drain-Source Breakdown Voltage 漏源击穿电压	BV_{DSS}	V_{GS} = 0V, I_D = 250uA	30			V
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	V_{GS} = 10V, I_D = 25A		5.7	6.0	mΩ
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 25A		8.5	10.0	
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = 250uA	1.3	1.8	3	V
Zero Gate Voltage Drain Current 零栅压漏极电流	I_{DSS}	V_{DS} = 24V, V_{GS} = 0V			1	uA
Gate Body Leakage 漏极短路时截止栅电流	I_{GSS}	V_{GS} = ± 20V, V_{DS} = 0V			± 100	nA
Forward Transconductance 正向跨导	g_{fs}	V_{DS} = 5V, I_D = 30A		82	__	S
Gate Resistance 栅极电阻	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		0.45	__	Ω
Dynamic 动态参数						
Total Gate Charge 栅极总电荷	Q_g	V_{DS}=15V, V_{GS}=4.5V, I_D=17A		28.4		nC
Gate-Source Charge 栅-源极电荷	Q_{gs}			12.4		
Gate-Drain Charge 栅-漏极电荷	Q_{gd}			18.9		
Turn-On Delay Time 导通延迟时间	$t_{d(on)}$	V_{DD}=15V, R_L =15Ω,I_D=1A, V_{GEN}=10V,R_G=6Ω		22.2		ns
Turn-On Rise Time 导通上升时间	t_r			15.3		
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$			85.1		
Turn-Off Fall Time 关断下降时间	t_f			15.6		
Input Capacitance 输入电容	C_{iss}	V_{DS} = 8V, V_{GS} = 0V f = 1.0 MHz		2390		pF
Output Capacitance 输出电容	C_{oss}			356		
Reverse Transfer Capacitance 反向传输电容	C_{rss}			310		
Source-Drain Diode 源漏二极管参数						
Max. Diode Forward Current 最大正向电流	I_S					A
Diode Forward Voltage 正向电压	V_{SD}	I_S = 1A, V_{GS} = 0V		0.68		V

Note: Pulse test: pulse width <= 300us, duty cycle<= 2%　注意：脉冲测试：脉冲宽度<= 300us 死区<= 2%





N-Channel 30-V(D-S) MOSFET

Typical Characteristics (TJ =25• •Noted)