

**YGMOS Technology CO. LTD**

40V N-Channel Enhancement-Mode MOSFET      40V N 沟道增强型 MOS 管

**VDS≤40V**
**R<sub>DS(ON)</sub>, V<sub>GS</sub>@10V, I<sub>DS</sub>@20A ≤ 6.5mΩ**
**R<sub>DS(ON)</sub>, V<sub>GS</sub>@4.5V, I<sub>DS</sub>@15A ≤ 9mΩ**
**Features      特性**

Advanced trench process technology    高级的加工技术

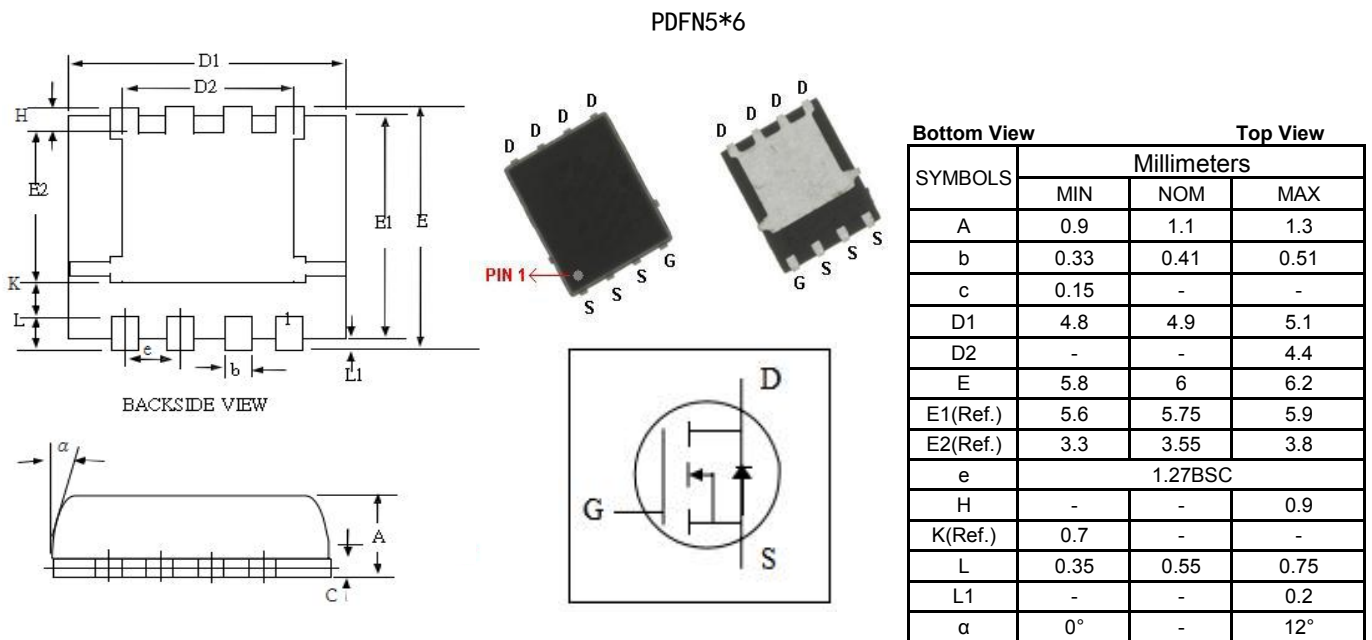
High Density Cell Design For Ultra Low On-Resistance    极低的导通电阻高密度的单元设计

Specially Designed for DC/DC Converters and Motor Drivers    专为马达驱动及直流直流转换面特殊设计

Fully Characterized Avalanche Voltage and Current    完美的雪崩性能

Improved Shoot-Through FOM    改进的成型工艺

Package Dimensions      封装尺寸及外形图


**Maximum Ratings and Thermal Characteristics (TA = 25°C 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 <sub>DS</sub>	40	V	
Gate-Source Voltage 栅源电压	V <sub>GS</sub>	±20		
Continuous Drain Current 连续漏极电流	I <sub>D</sub>	66	A	
Pulsed Drain Current 脉冲漏极电流	I <sub>DM</sub>	120		
Avalanche Current <sup>C</sup>	I <sub>AS</sub>	47	A	
Avalanche energy L=0.1mH <sup>C</sup>	E <sub>AS</sub>	110	mJ	
Maximum Power Dissipation 最大耗散功率	P <sub>D</sub>	TA= 25°C	55	W
		TA= 75°C	38	
Operating Junction and Storage Temperature Range 使用及储存温度	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C	
Junction-to-Ambient Thermal Resistance (PCB mounted) 结环热阻	R <sub>θJA</sub>	50	°C/W	
Junction-to-Case Thermal Resistance 结壳热阻	R <sub>θJC</sub>	2.4		

## YGMOS Technology CO. LTD

ELECTRICAL CHARACTERISTICS 一般电气特性							
Parameter 参数	Symbol 符号	Test Condition 测试条件	Minimum 最小值	Typical 典型值	Maximum 最大值	Unit 单位	
<b>Static 静态参数</b>							
Drain-Source Breakdown Voltage 漏源击穿电压	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	40			V	
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		5	6.5	mΩ	
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 15A$		6	9		
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	2.5	V	
Zero Gate Voltage Drain Current 零栅压漏极电流	$I_{DSS}$	$V_{DS} = 40V, V_{GS} = 0V$			1	μA	
Gate Body Leakage 漏极短路时截止栅电流	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA	
Gate Resistance 栅极电阻	$R_g$	$V_{DS} = 0V, V_{GS} = 1V$ at 1MHz		1.4		Ω	
Forward Transconductance 正向跨导	$g_{fs}$	$V_{DS} = 15V, I_D = 25A$		27		S	
<b>Dynamic 动态参数</b>							
Total Gate Charge 栅极总电荷	$Q_g$	$V_{GS} = 10V, V_{DS} = 15V, I_{ID} = 1.5A$		36		nC	
Gate-Source Charge 栅-源极电荷	$Q_{gs}$			42			
Gate-Drain Charge 栅-漏极电荷	$Q_{gd}$			9.9			
Turn-On Delay Time 导通延迟时间	$t_{d(on)}$	$V_{DS} = 20V, R_L = 10\Omega, V_G = 10V, R_G = 3\Omega$		17.7		ns	
Turn-On Rise Time 导通上升时间	$t_r$			12.6			
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$			61.5			
Turn-Off Fall Time 关断下降时间	$t_f$			10			
Input Capacitance 输入电容	$C_{iss}$	$V_{DS} = 20V, f = 1\text{ MHz}$		3124		pF	
Output Capacitance 输出电容	$C_{oss}$			250			
Reverse Transfer Capacitance 反向传输电容	$C_{rss}$			206			
<b>Source-Drain Diode 源漏二极管参数</b>							
Max. Diode Forward Current 最大正向电流	$I_S$				50	A	
Diode Forward Voltage 正向电压	$V_{SD}$	$I_S = 20A, V_{GS} = 0V$			1	V	

Note: Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$  注意: 脉冲测试: 脉冲宽度  $\leq 300\mu s$  死区  $\leq 2\%$

