

YGMOS Technology CO. LTD

-20V P-Channel Enhancement-Mode MOSFET -20V P 沟道增强型 MOS 管

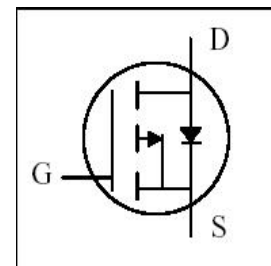
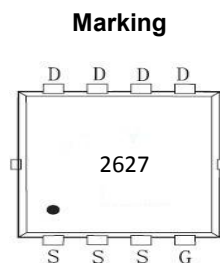
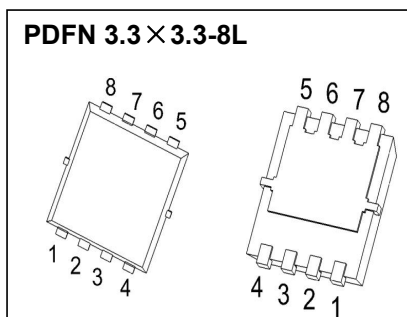
 $V_{DS} \leq -20V$
 $R_{DS(ON)}, V_{GS}@-4.5V, I_{DS}@-10A \leq 9m\Omega$
 $R_{DS(ON)}, V_{GS}@-2.5V, I_{DS}@-8A \leq 11.5m\Omega$
 $R_{DS(ON)}, V_{GS}@-1.8V, I_{DS}@-5A \leq 15m\Omega$
Features 特性

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

High Power and Current handling capability 大功率高电流

Package Dimensions 封装尺寸及外形图


Maximum Ratings and Thermal Characteristics ($T_A = 25^\circ C$ unless otherwise noted) $25^\circ C$ 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}	-20	V	
Gate-Source Voltage 栅源电压	V_{GS}	± 12		
Continuous Drain Current 连续漏极电流	I_D	-30	A	
Pulsed Drain Current 脉冲漏极电流	I_{DM}	-80		
Maximum Power Dissipation 最大耗散功率	P_D	$T_A = 25^\circ C$	25	W
		$T_A = 75^\circ C$	18	
Operating Junction and Storage Temperature Range 使用及储存温度	T_J, T_{stg}	-55 to 150	$^\circ C$	
Junction-to-Ambient Thermal Resistance (PCB mounted) 结环热阻	$R_{\theta JA}$	75	$^\circ C/W$	
Junction-to-Case Thermal Resistance 结壳热阻	$R_{\theta JC}$	4.2		

 Device mounted on an FR4 PCB, single-sided copper, tin-plated and mounting pad for drain 6 cm^2 , $t \leq 5\text{ s}$.

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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
Static 静态参数						
Drain-Source Breakdown Voltage 漏源击穿电压	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	-20			V
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -10A$		7.8	9	mΩ
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = -2.5V, I_D = -8A$		10.3	11.5	
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = -1.8V, I_D = -6A$		13.4	15	
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	-0.35	-0.48	-1	V
Zero Gate Voltage Drain Current 零栅压漏极电流	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V, T_J = 25^\circ C$			-1	μA
Gate Body Leakage 漏极短路时截止栅电流	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			±100	nA
Forward Transconductance 正向跨导	g_{fs}	$V_{DS} = -5V, I_D = -10A$		43		S
Dynamic 动态参数						
Total Gate Charge 栅极总电荷	Q_g	$V_{DS} = -15V, I_D = -10A$ $V_{GS} = -4.5V$		63		nC
Gate-Source Charge 栅-源极电荷	Q_{gs}			9.1		
Gate-Drain Charge 栅-漏极电荷	Q_{gd}			13		
Turn-On Delay Time 导通延迟时间	$t_{d(on)}$	$V_{DD} = -10V, V_{GS} = -4.5V$ $R_G = 3.3\Omega, I_D = -10A$		16		ns
Turn-On Rise Time 导通上升时间	t_r			78		
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$			193		
Turn-Off Fall Time 关断下降时间	t_f			185		
Input Capacitance 输入电容	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V$ $f = 1MHz$		5783		pF
Output Capacitance 输出电容	C_{oss}			509		
Reverse Transfer Capacitance 反向传输电容	C_{rss}			431		
Source-Drain Diode 源漏二极管参数						
Max. Diode Forward Current 最大正向电流	I_S				-10	A
Diode Forward Voltage 正向电压	V_{SD}	$I_S = 10A, V_{GS} = 0V$			-1.2	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 $\leq 2\%$

