

YGMOS Technology CO. LTD

40V N-Channel Enhancement-Mode MOSFET

40V N 沟道增强型 MOS 管

 $V_{DS} \leq 40V$
 $R_{DS(ON)}, V_{GS}@10V, I_{DS}@15A \leq 13m\Omega$
 $R_{DS(ON)}, V_{GS}@4.5V, I_{DS}@10A \leq 17m\Omega$
Features 特性

Advanced trench process technology 高级的加工技术

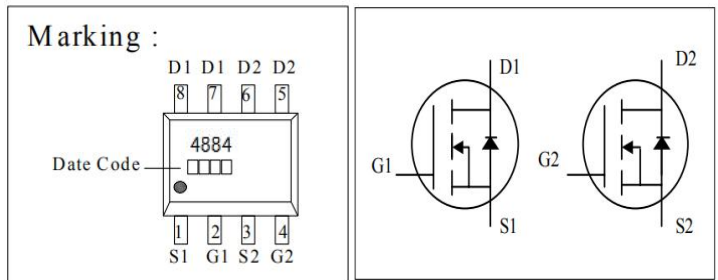
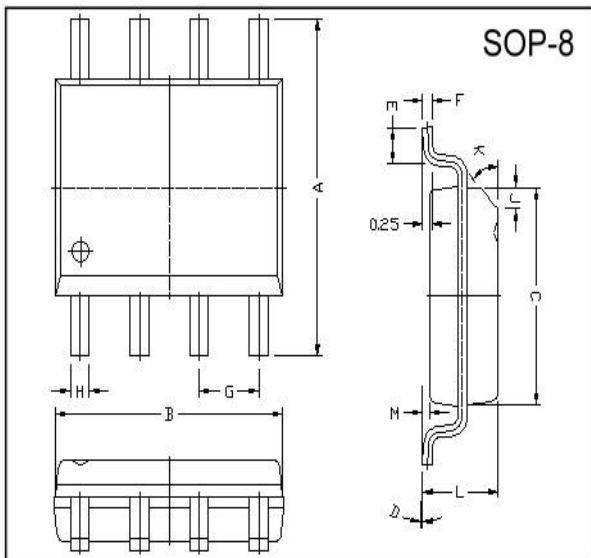
High Density Cell Design For Ultra Low On-Resistance 极低的导通电阻高密度的单元设计

Fully Characterized Avalanche Voltage and Current 极好的雪崩性能

Improved Shoot-Through FOM 改进的成型工艺

Package Dimensions

封装尺寸及外形图



REF	Millimeter		REF.	Millimeter	
	Min	Max		Min	Max
A	5.8	6.2	M	0.1	0.25
B	4.8	5	H	0.35	0.49
C	3.8	4	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.4	0.9	K	45°	
F	0.19	0.25	G	1.27 TYP.	

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_{DS}	40	V
Gate-Source Voltage 栅源电压	V_{GS}	± 20	V
Continuous Drain Current 连续漏极电流	I_D	10	A
Pulsed Drain Current 脉冲漏极电流	I_{DM}	30	A
Maximum Power Dissipation 最大耗散功率	P_D	TA = 25°C	2.1
		TA = 75°C	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

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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}	$V_{GS} = 0V, I_D = 250\mu A$	40			V
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 15A$		12.2	13	mΩ
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 10A$		14.7	17	
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3	V
Zero Gate Voltage Drain Current 零栅压漏极电流	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
Gate Body Leakage 漏极短路时截止栅电流	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			±100	nA
Dynamic 动态参数						
Total Gate Charge 栅极总电荷	Q_g	$V_{DS} = 20V, I_D = 15A$ $V_{GS} = 10V$		20		nC
Gate-Source Charge 栅-源极电荷	Q_{gs}			3.3		
Gate-Drain Charge 栅-漏极电荷	Q_{gd}			4.3		
Turn-On Delay Time 导通延迟时间	$t_{d(on)}$	$V_{DD} = 20V, R_G = 3\Omega$ $V_{GS} = 10V, R_L = 10\Omega$		8.8		ns
Turn-On Rise Time 导通上升时间	t_r			6		
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$			32.8		
Turn-Off Fall Time 关断下降时间	t_f			4		
Input Capacitance 输入电容	C_{iss}	$V_{DS} = 20V, V_{GS} = 0V$ $f = 1MHz$		1314		pF
Output Capacitance 输出电容	C_{oss}			120		
Reverse Transfer Capacitance 反向传输电容	C_{rss}			88		
Source-Drain Diode 源漏二极管参数						
Max. Diode Forward Current 最大正向电流	I_S				6	A
Diode Forward Voltage 正向电压	V_{SD}	$I_S = 2.5A, V_{GS} = 0V$			1.2	V

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

