

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

**$V_{DS} = 30V$**

**$R_{DS(ON)}, V_{GS}@10V, I_{ds}@12A = 9.0m\Omega$**

**$R_{DS(ON)}, V_{GS}@4.5V, I_{ds}@10A = 12m\Omega$**

## Features 特性

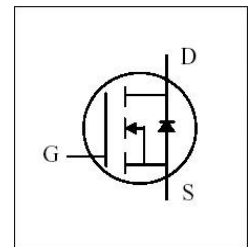
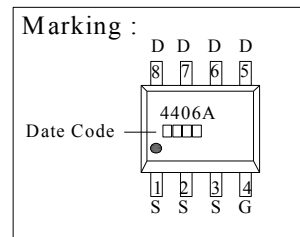
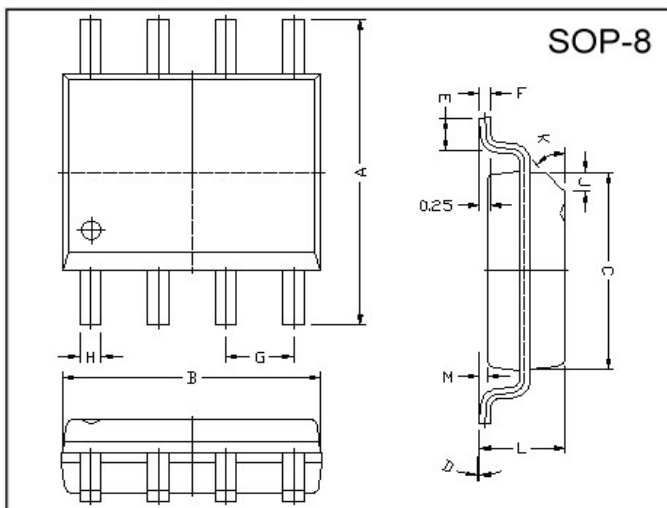
Advanced trench process technology 高级的加工技术

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	5.80	6.20	M	0.10	0.25
B	4.80	5.00	H	0.35	0.49
C	3.80	4.00	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.40	0.90	K	45°	
F	0.19	0.25	G	1.27 TYP.	

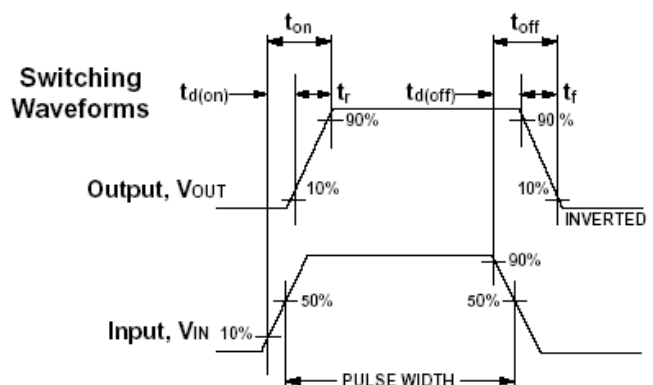
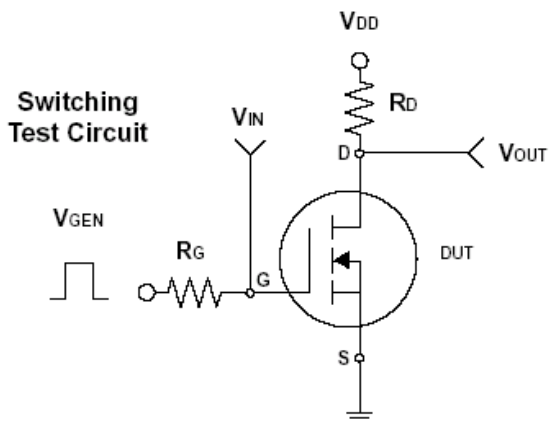
## Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted) 25°C 极限参数和热特性

Parameter 极限参数	Symbol 符号	Limit 范围	Unit 单位	
Drain-Source Voltage 漏源电压	$V_{DS}$	30	V	
Gate-Source Voltage 栅源电压	$V_{GS}$	$\pm 20$		
Continuous Drain Current 连续漏极电流	$I_D$	12	A	
Pulsed Drain Current 脉冲漏极电流	$I_{DM}$	48		
Maximum Power Dissipation 最大耗散功率	$P_D$	TA = 25°C	2.5	W
		TA = 75°C	1.2	
Operating Junction and Storage Temperature Range 使用及储存温度	$T_J, T_{stg}$	-55 to 150	°C	
Avalanche Energy with Single Pulse 雪崩能量	EAS	55	mJ	
Junction-to-Case Thermal Resistance 结壳热阻	$R_{\theta JC}$	25	°C/W	
Junction-to-Ambient Thermal Resistance (PCB mounted) 结环热阻	$R_{\theta JA}$	50		

## 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
<b>Static 静态参数</b>						
Drain-Source Breakdown Voltage 漏源击穿电压	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 12A$		7.0	9.0	m $\Omega$
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 10A$		9.5	12	
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	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	$\mu A$
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
Forward Transconductance 正向跨导	$g_{fs}$	$V_{DS} = 15V, I_D = 12A$		60		S
<b>Dynamic 动态参数</b>						
Total Gate Charge 栅极总电荷	$Q_g$	$V_{DS} = 15V, I_D = 12A$ $V_{GS} = 10V$		18.8		nC
Gate-Source Charge 栅-源极电荷	$Q_{gs}$			1.9		
Gate-Drain Charge 栅-漏极电荷	$Q_{gd}$			4.5		
Turn-On Delay Time 导通延迟时间	$t_{d(on)}$	$V_{DD} = 15V, R_G = 6\Omega$ $V_{GS} = 10V$		12.5		ns
Turn-On Rise Time 导通上升时间	$t_r$			12.3		
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$			44		
Turn-Off Fall Time 关断下降时间	$t_f$			10.1		
Input Capacitance 输入电容	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$		1066		pF
Output Capacitance 输出电容	$C_{oss}$			164		
Reverse Transfer Capacitance 反向传输电容	$C_{rss}$			119		
<b>Source-Drain Diode 源漏二极管参数</b>						
Max. Diode Forward Current 最大正向电流	$I_S$				2.0	A
Diode Forward Voltage 正向电压	$V_{SD}$	$I_S = 2A, V_{GS} = 0V$			1.5	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  $\leq 2\%$



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

**Typical Characteristics (T<sub>J</sub> =25°C Noted)**

