

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

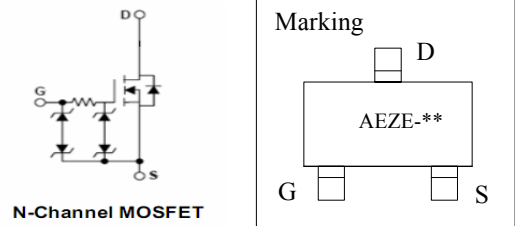
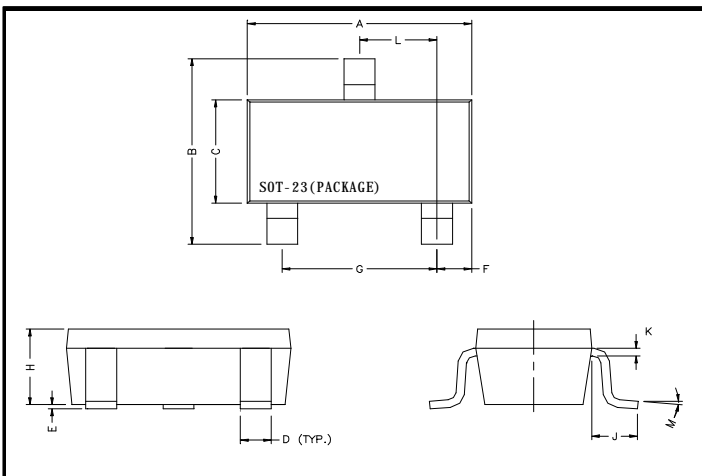
$V_{DS} = 20$ **$I_D = 4.2$ A** **ESD Protected: 2000V**
 $R_{DS(ON)}, V_{GS} @ 1.8V, I_{ds} @ 3A = 36m\Omega$
 $R_{DS(ON)}, V_{GS} @ 2.5V, I_{ds} @ 3.8A = 28m\Omega$
 $R_{DS(ON)}, V_{GS} @ 4.5V, I_{ds} @ 4.2A = 24m\Omega$

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

Package Dimensions 封装尺寸及外形图



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	1.90	REF.
B	2.40	2.80	H	1.00	1.30
C	1.40	1.60	K	0.10	0.20
D	0.35	0.50	J	0.40	-
E	0	0.10	L	0.85	1.15
F	0.45	0.55	M	0°	10°

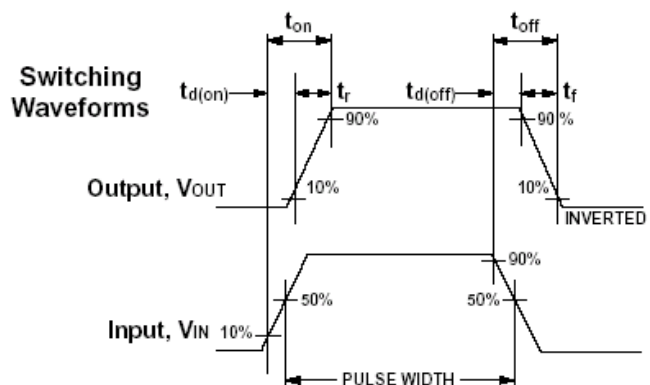
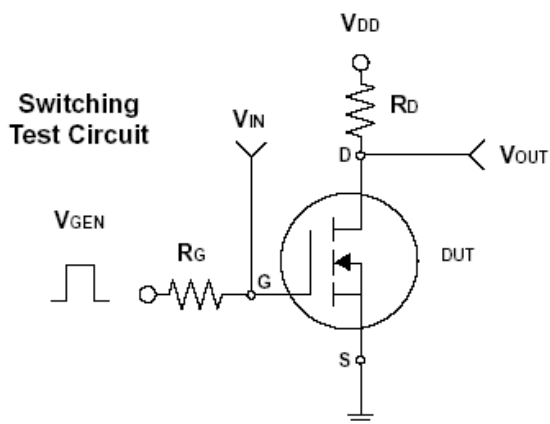
Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted) 25°C 极限参数和热特性

Parameter 极限参数	Symbol 符号	Limit 范围	Unit 单位	
Drain-Source Voltage 漏源电压	V_{DS}	20	V	
Gate-Source Voltage 栅源电压	V_{GS}	± 12		
Continuous Drain Current 连续漏极电流	I_D	4.2	A	
Pulsed Drain Current 脉冲漏极电流	I_{DM}	20		
Maximum Power Dissipation 最大耗散功率	P_D	TA = 25°C	1.4	W
		TA = 75°C	0.9	
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	$R_{\theta JA}$	140	°C/W	

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}	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 1.8V, I_D = 3.0A$		28.0	36.0	m Ω
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 2.5V, I_D = 3.8A$		23.0	28.0	
Drain-Source On-State Resistance 漏源导通电阻	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 4.2A$		20.0	24.0	
Gate Threshold Voltage 开启电压	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4		1.0	V
Zero Gate Voltage Drain Current 零栅压漏极电流	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
Gate Body Leakage 漏极短路时截止栅电流	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 10	μA
Gate Resistance G 极电阻	R_g	$V_{DS} = 10V, f = 1.0MHz$		1.5		Ω
Dynamic 动态参数						
Total Gate Charge 栅极总电荷	Q_g	$V_{DS} = 10V, I_D = 4.2A$ $V_{GS} = 4.5V$		13		nC
Gate-Source Charge 栅-源极电荷	Q_{gs}			0.7		
Gate-Drain Charge 栅-漏极电荷	Q_{gd}			3.8		
Turn-On Delay Time 导通延迟时间	$t_{d(on)}$	$V_{DD} = 10V, R_L = 1.5\Omega$ $I_D = 1A, V_{GEN} = 5V$ $R_G = 3\Omega$		11.4		ns
Turn-On Rise Time 导通上升时间	t_r			12.4		
Turn-Off Delay Time 关断延迟时间	$t_{d(off)}$			50.5		
Turn-Off Fall Time 关断下降时间	t_f			19.2		
Input Capacitance 输入电容	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V$ $f = 1.0MHz$		778		pF
Output Capacitance 输出电容	C_{oss}			135		
Reverse Transfer Capacitance 反向传输电容	C_{rss}			111		
Source-Drain Diode 源漏二极管参数						
Max. Diode Forward Current 最大正向电流	I_S				1	A
Diode Forward Voltage 正向电压	V_{SD}	$I_S = 1.0A, V_{GS} = 0V$		0.7	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 $\leq 2\%$



Typical Characteristics (T_J = 25°C Noted)

