

# 双 N 沟道 MOSFET (共漏极)

ELM53814WA-N

<http://www.elm-tech.com>

## ■概要

ELM53814WA-N 是 N 沟道低输入电容、低工作电压、低导通电阻的大电流 MOSFET，内藏有两个 MOSFET。

## ■特点

- $V_{ds}=20V$
- $I_d=14A$
- $R_{ds(on)} = 14m\Omega$  ( $V_{gs}=4.5V$ )
- $R_{ds(on)} = 18m\Omega$  ( $V_{gs}=2.5V$ )
- $R_{ds(on)} = 30m\Omega$  ( $V_{gs}=1.8V$ )

## ■绝对最大额定值

如没有特别注明时,  $T_a=25^\circ C$

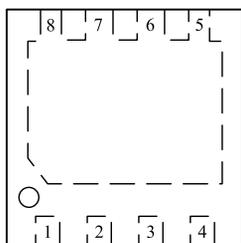
项目	记号	规格范围	单位
漏极 - 源极电压	$V_{ds}$	20	V
栅极 - 源极电压	$V_{gs}$	$\pm 12$	V
漏极电流 ( $T_j=150^\circ C$ )	$I_d$	$T_a=25^\circ C$	14
		$T_a=70^\circ C$	10
漏极电流 (脉冲)	$I_{dm}$	20	A
容许功耗	$P_d$	$T_c=25^\circ C$	2.0
		$T_c=70^\circ C$	1.5
动作结合部温度	$T_j$	150	$^\circ C$
保存温度范围	$T_{stg}$	- 55 ~ 150	$^\circ C$

## ■热特性

项目	记号	典型值	最大值	单位
最大结合部 - 环境热阻	$R_{\theta ja}$		62.5	$^\circ C/W$

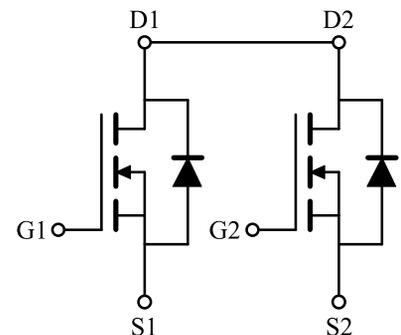
## ■引脚配置图

DFN8-3 × 3 (俯视图)



引脚编号	引脚名称
1	SOURCE1
2	GATE1
3	SOURCE2
4	GATE2
5	DRAIN1 / DRAIN2
6	DRAIN1 / DRAIN2
7	DRAIN1 / DRAIN2
8	DRAIN1 / DRAIN2

## ■电路图



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## ■电特性

如没有特别注明时, Ta=25°C

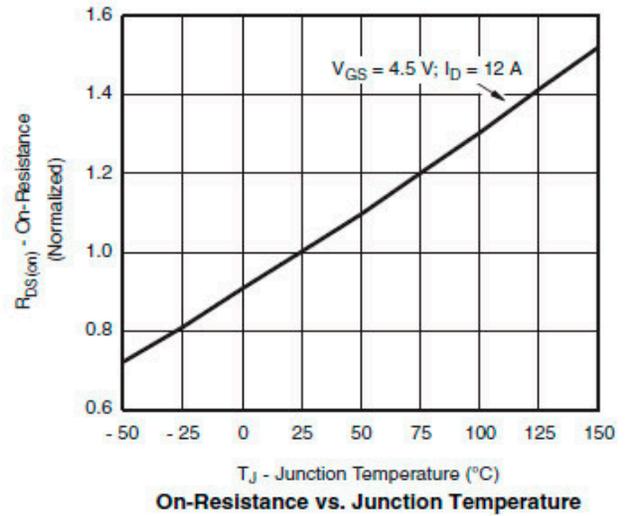
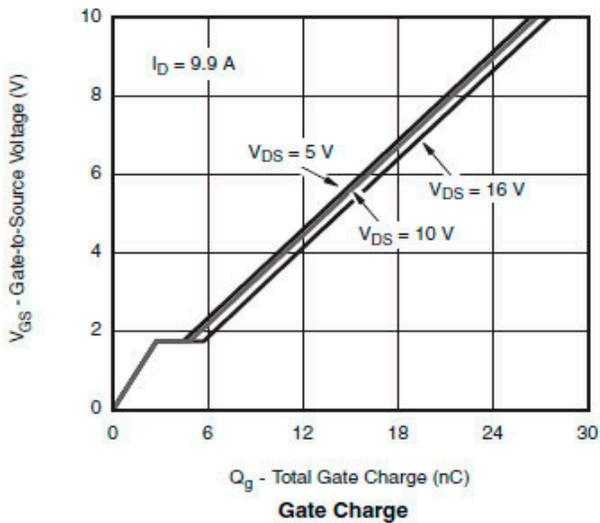
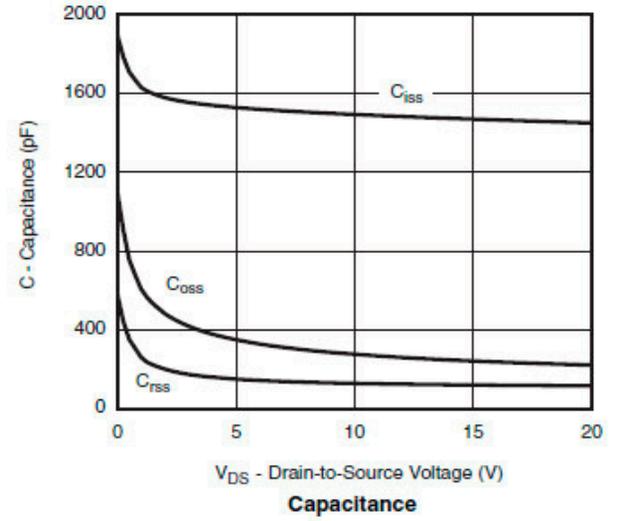
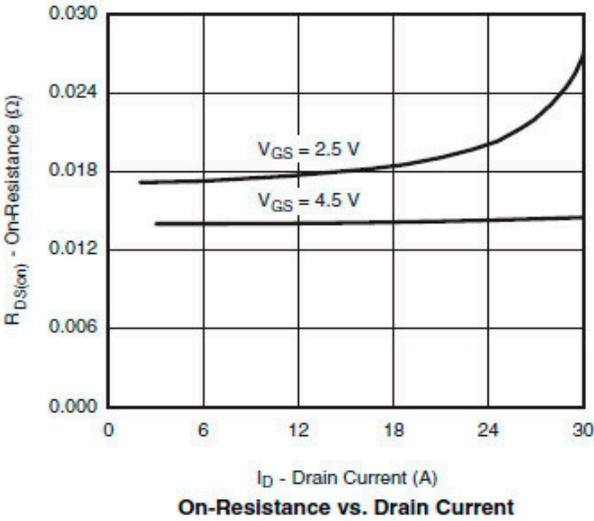
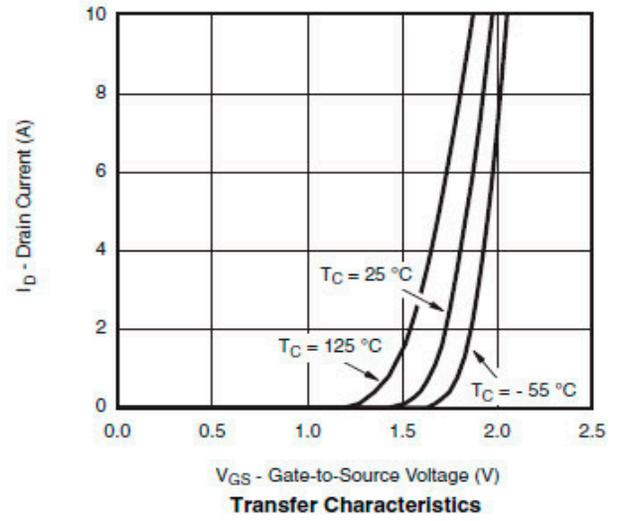
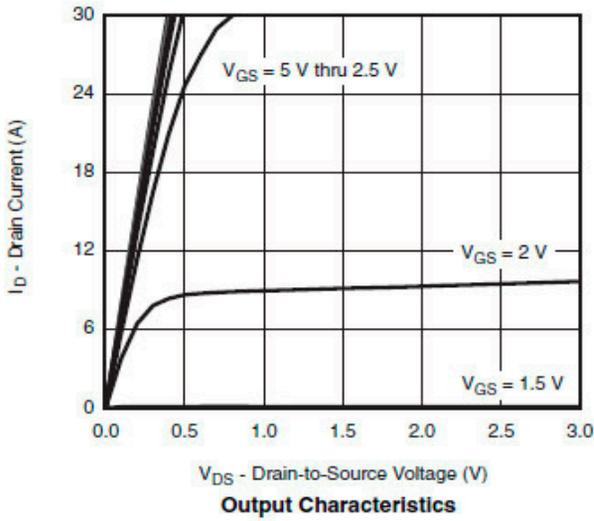
项目	记号	条件	最小值	典型值	最大值	单位
静态特性						
漏极 - 源极击穿电压	BV <sub>dss</sub>	I <sub>d</sub> =250μA, V <sub>gs</sub> =0V	20			V
栅极接地时漏极电流	I <sub>dss</sub>	V <sub>ds</sub> =20V, V <sub>gs</sub> =0V Ta=85°C			1	μA
					10	
栅极漏电流	I <sub>gss</sub>	V <sub>ds</sub> =0V, V <sub>gs</sub> = ± 12V			± 100	nA
栅极阈值电压	V <sub>gs(th)</sub>	V <sub>ds</sub> =V <sub>gs</sub> , I <sub>d</sub> =250 μA	0.4		1.0	V
导通时漏极电流	I <sub>d(on)</sub>	V <sub>gs</sub> =4.5V, V <sub>ds</sub> ≥ 5V	30			A
漏极 - 源极导通电阻	R <sub>ds(on)</sub>	V <sub>gs</sub> =4.5V, I <sub>d</sub> =14A		10	14	mΩ
		V <sub>gs</sub> =2.5V, I <sub>d</sub> =12A		14	18	
		V <sub>gs</sub> =1.8V, I <sub>d</sub> =10A		23	30	
正向跨导	G <sub>fs</sub>	V <sub>ds</sub> =10V, I <sub>d</sub> =7.0A		40		S
二极管正向压降	V <sub>sd</sub>	I <sub>s</sub> =1.6A, V <sub>gs</sub> =0V		0.8	1.3	V
寄生二极管最大连续电流	I <sub>s</sub>				1.5	A
动态特性						
输入电容	C <sub>iss</sub>	V <sub>gs</sub> =0V, V <sub>ds</sub> =10V, f=1MHz		1450		pF
输出电容	C <sub>oss</sub>			285		pF
反馈电容	C <sub>rss</sub>			145		pF
开关特性						
总栅极电荷	Q <sub>g</sub>	V <sub>gs</sub> =4.5V, V <sub>ds</sub> =10V, I <sub>d</sub> ≡ 6.0A		13.0	19.0	nC
栅极 - 源极电荷	Q <sub>gs</sub>			2.8		nC
栅极 - 漏极电荷	Q <sub>gd</sub>			2.0		nC
导通延迟时间	t <sub>d(on)</sub>	V <sub>gs</sub> =10V, V <sub>ds</sub> =10V R <sub>L</sub> =1.3Ω, I <sub>d</sub> ≡ 6.0A R <sub>gen</sub> =1.0Ω		10	20	ns
导通上升时间	t <sub>r</sub>			10	20	ns
关闭延迟时间	t <sub>d(off)</sub>			25	40	ns
关闭下降时间	t <sub>f</sub>			10	20	ns

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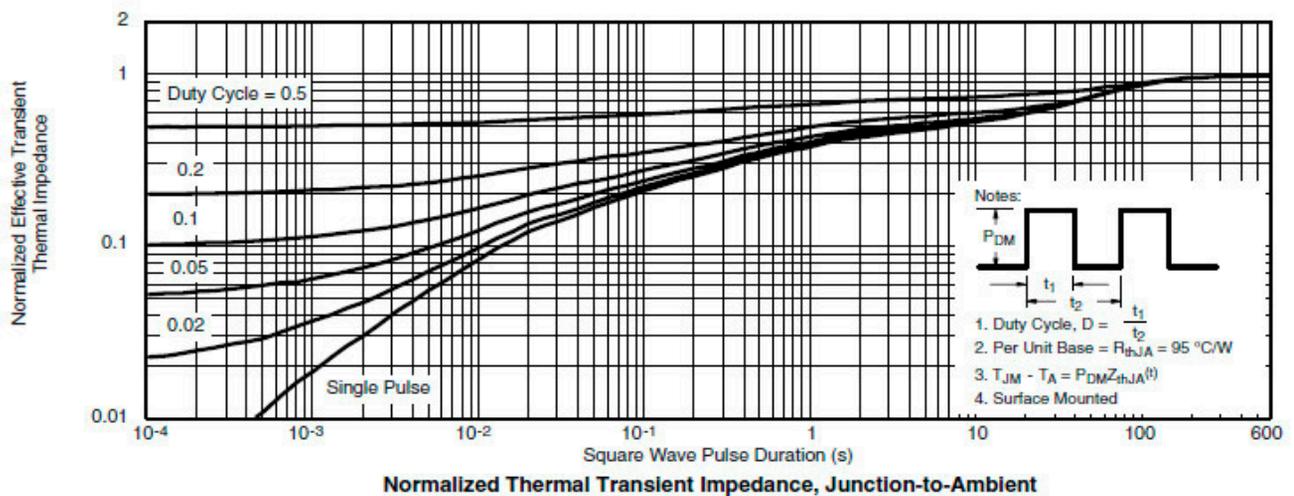
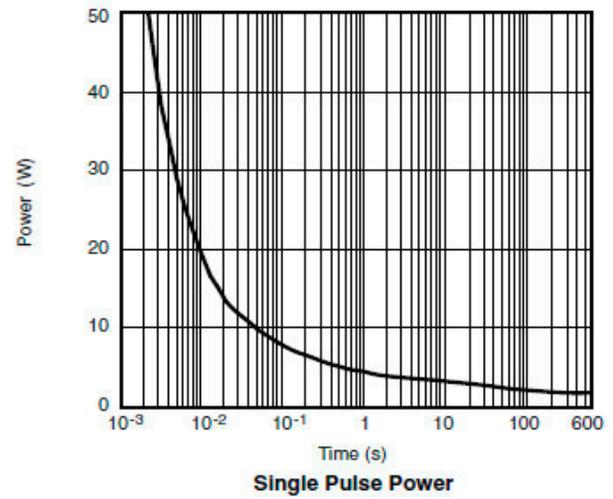
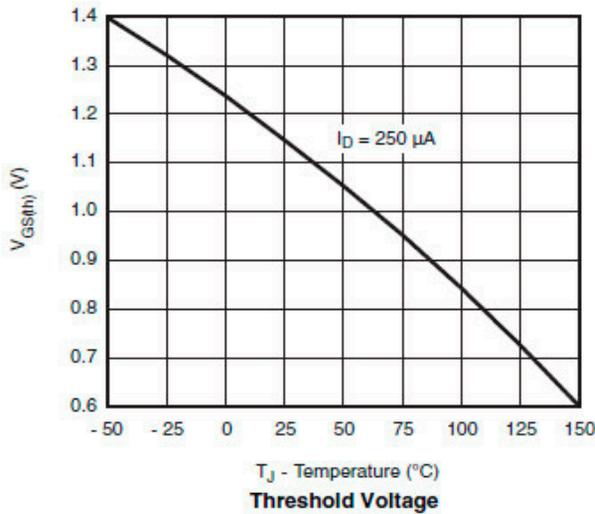
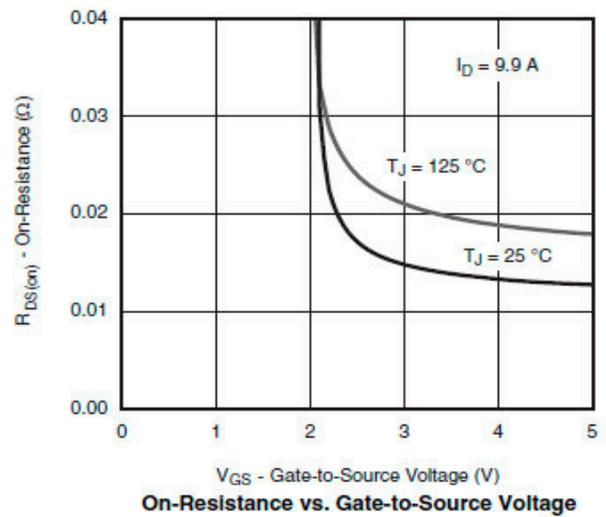
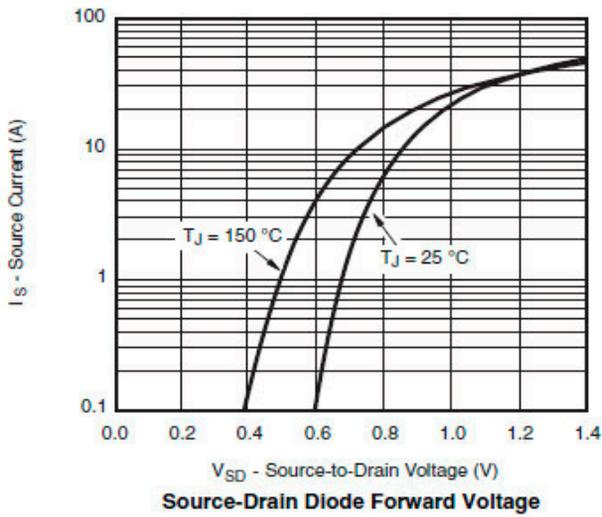
## ■ 标准特性和热特性曲线



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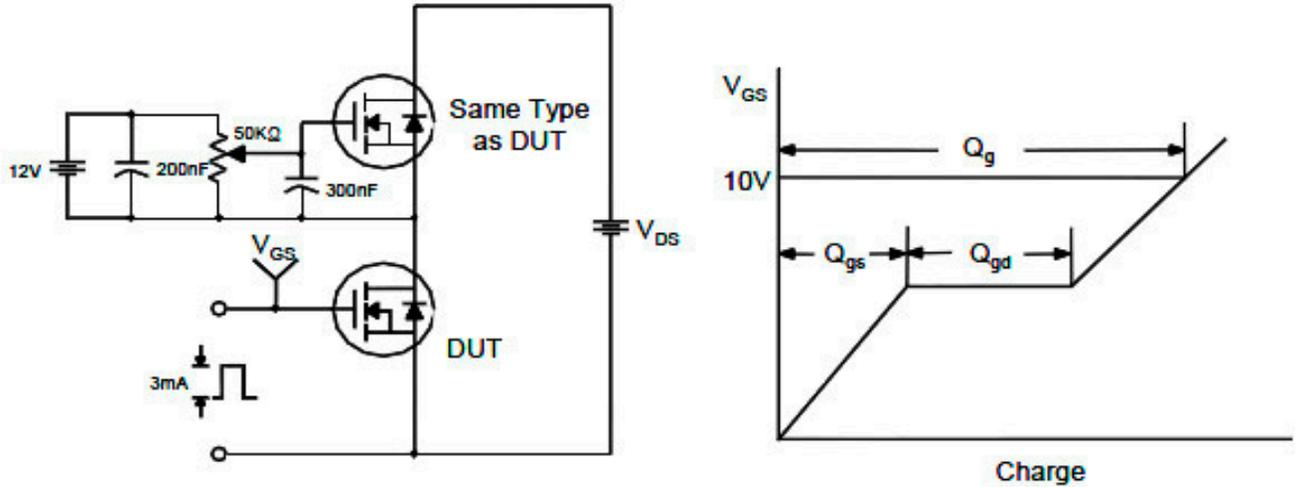
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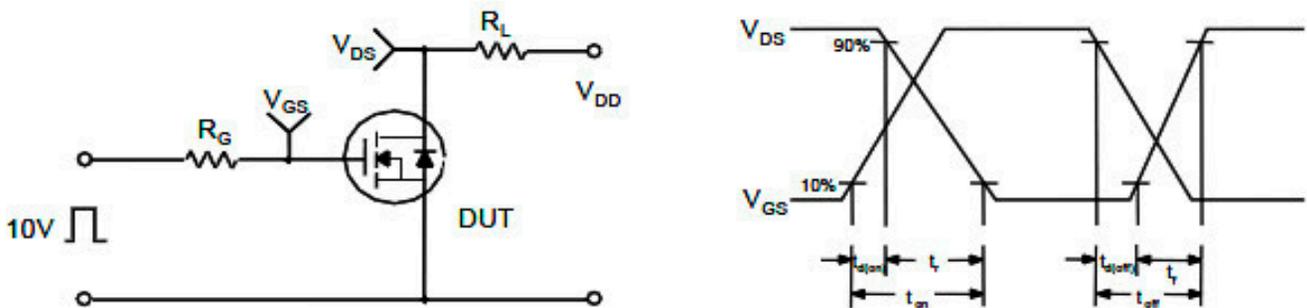
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