

# 单 P 沟道 MOSFET

ELM57113WSA-N

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

## ■概要

ELM57113WSA-N 是 P 沟道低输入电容，低工作电压，低导通电阻的大电流 MOSFET。

## ■特点

- $V_{ds} = -100V$
- $I_d = -9.0A$
- $R_{ds(on)} = 87m\Omega$  ( $V_{gs} = -10V$ )
- $R_{ds(on)} = 95m\Omega$  ( $V_{gs} = -4.5V$ )

## ■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	$V_{ds}$	-100	V
栅极 - 源极电压	$V_{gs}$	$\pm 20$	V
漏极电流 (定常) $T_j = 150^\circ C$	$I_d$	$T_a = 25^\circ C$	-9.0
		$T_a = 70^\circ C$	-6.0
漏极电流 (脉冲)	$I_{dm}$	-15	A
容许功耗	$P_d$	$T_c = 25^\circ C$	28
		$T_c = 70^\circ C$	18
动作结合部温度	$T_j$	150	$^\circ C$
保存温度范围	$T_{stg}$	-55 ~ 150	$^\circ C$

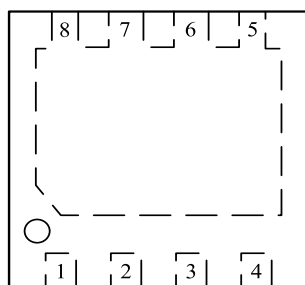
## ■热特性

项目	记号	典型值	最大值	单位
最大结合部 - 环境热阻	$R_{\theta ja}$		40	$^\circ C/W$

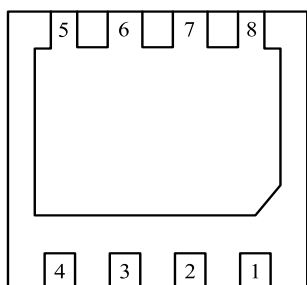
## ■引脚配置图

DFN8-3 × 3

(俯视图)

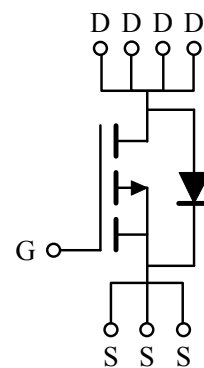


(背面视图)



引脚编号	引脚名称
1	SOURCE
2	SOURCE
3	SOURCE
4	GATE
5	DRAIN
6	DRAIN
7	DRAIN
8	DRAIN

## ■电路图



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## ■电特性

如没有特别注明时, Ta=25℃

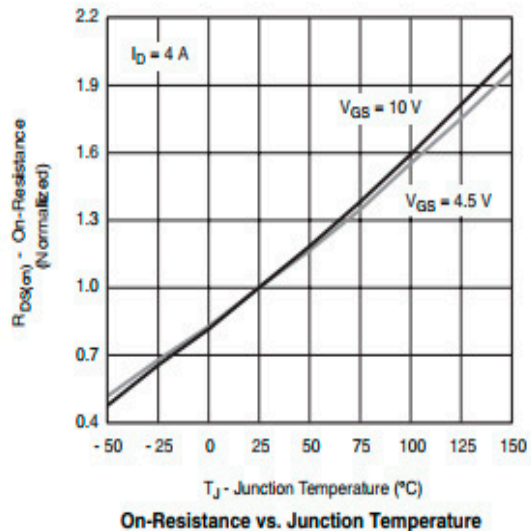
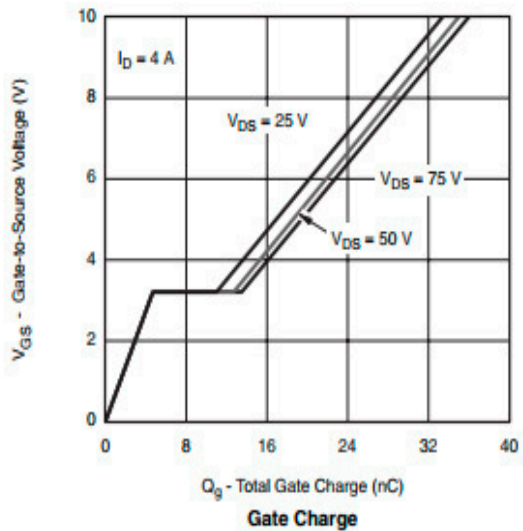
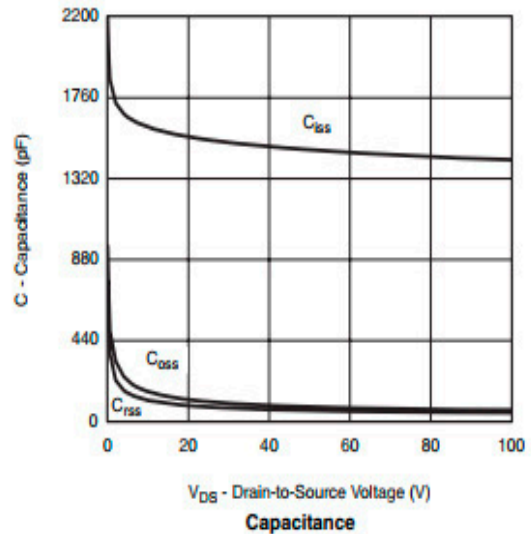
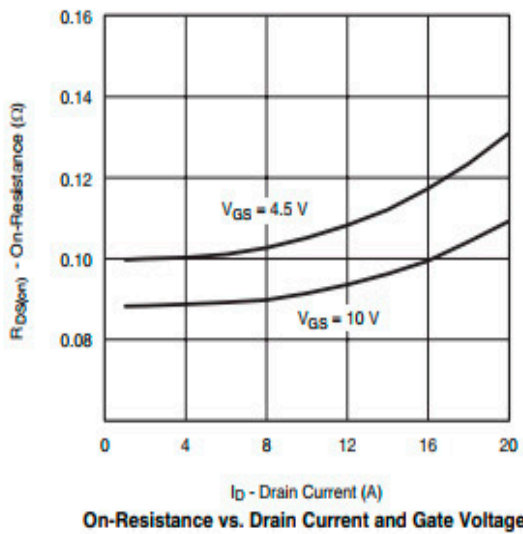
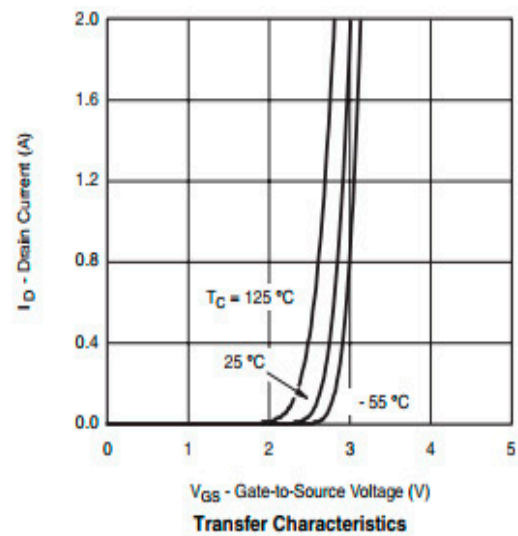
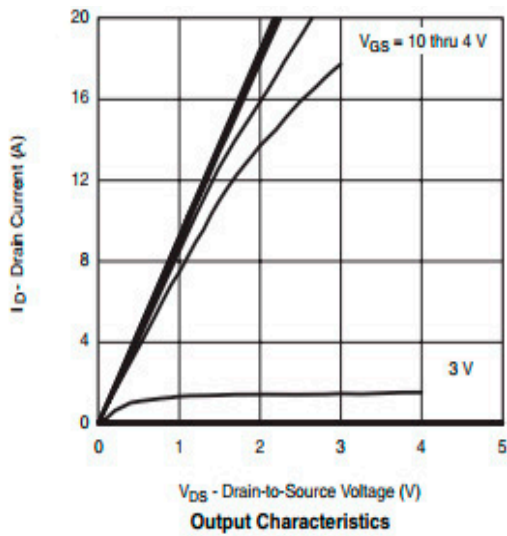
项目	记号	条件	最小值	典型值	最大值	单位
静态特性						
漏极 - 源极击穿电压	BV <sub>dss</sub>	Id=-250μA, V <sub>gs</sub> =0V	-100			V
栅极接地时漏极电流	Id <sub>ss</sub>	V <sub>ds</sub> =-80V V <sub>gs</sub> =0V			-1	μA
		Ta=85℃			-30	
栅极漏电流	I <sub>gss</sub>	V <sub>ds</sub> =0V, V <sub>gs</sub> =±20V			±100	nA
栅极阈值电压	V <sub>gs(th)</sub>	V <sub>ds</sub> =V <sub>gs</sub> , Id=-250μA	-1.0		-2.5	V
导通时漏极电流	Id(on)	V <sub>gs</sub> =-10V, V <sub>ds</sub> ≥-10V	-25			A
漏极 - 源极导通电阻	R <sub>ds(on)</sub>	V <sub>gs</sub> =-10V, Id=-7.0A		77	87	mΩ
		V <sub>gs</sub> =-4.5V, Id=-5.0A		85	95	
正向跨导	G <sub>fs</sub>	V <sub>ds</sub> =-15V, Id=-3.5A		19		S
二极管正向压降	V <sub>sd</sub>	I <sub>s</sub> =-2.0A, 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>				-9.0	A
动态特性						
输入电容	C <sub>iss</sub>	V <sub>gs</sub> =0V, V <sub>ds</sub> =-50V, f=1MHz		1800		pF
输出电容	C <sub>oss</sub>			150		pF
反馈电容	C <sub>rss</sub>			100		pF
开关特性						
总栅极电荷	Q <sub>g</sub>	V <sub>gs</sub> =-4.5V, V <sub>ds</sub> =-50V Id≡-4.0A		20	40	nC
栅极 - 源极电荷	Q <sub>gs</sub>			5		nC
栅极 - 漏极电荷	Q <sub>gd</sub>			10		nC
导通延迟时间	t <sub>d(on)</sub>	V <sub>gs</sub> =-10V, V <sub>ds</sub> =-50V RL=12.5Ω, Id≡-4.0A R <sub>gen</sub> =1.0Ω		15	30	ns
导通上升时间	t <sub>r</sub>			15	30	ns
关闭延迟时间	t <sub>d(off)</sub>			45	90	ns
关闭下降时间	t <sub>f</sub>			15	30	ns

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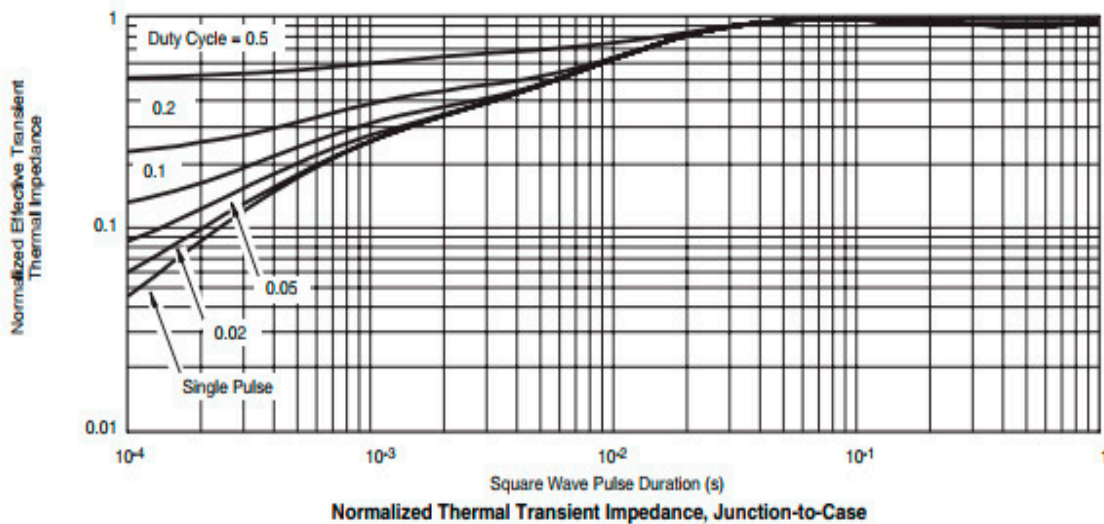
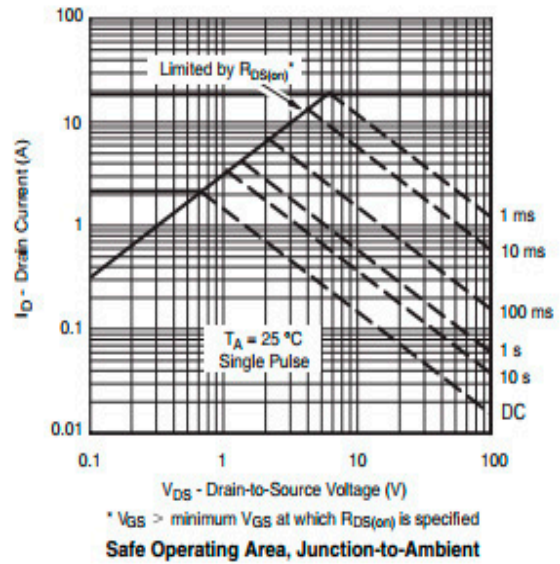
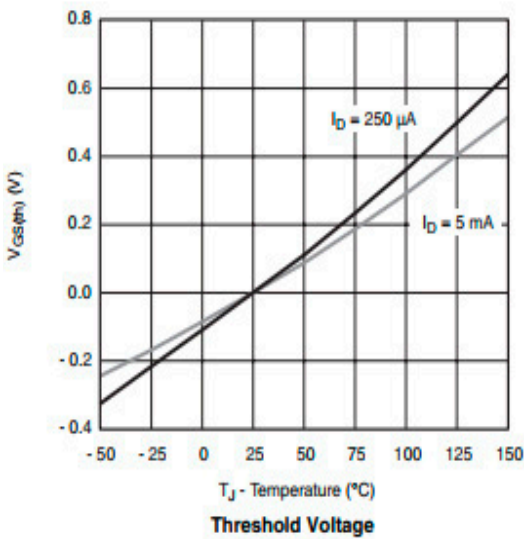
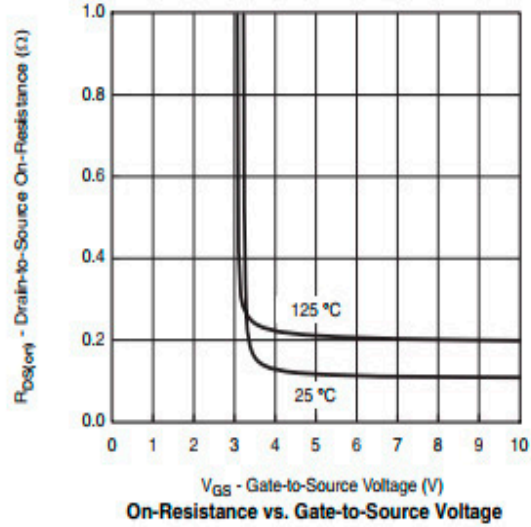
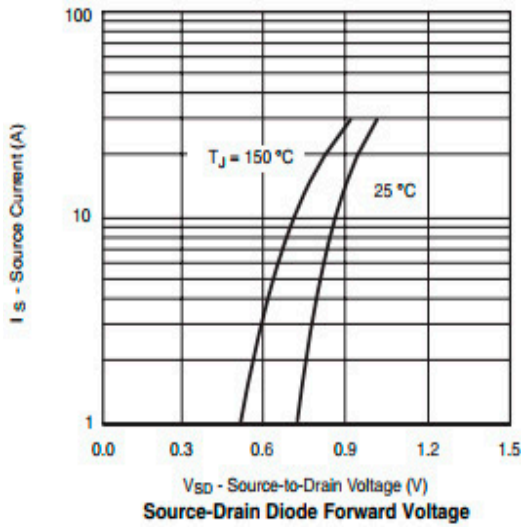
## 标准特性和热特性曲线



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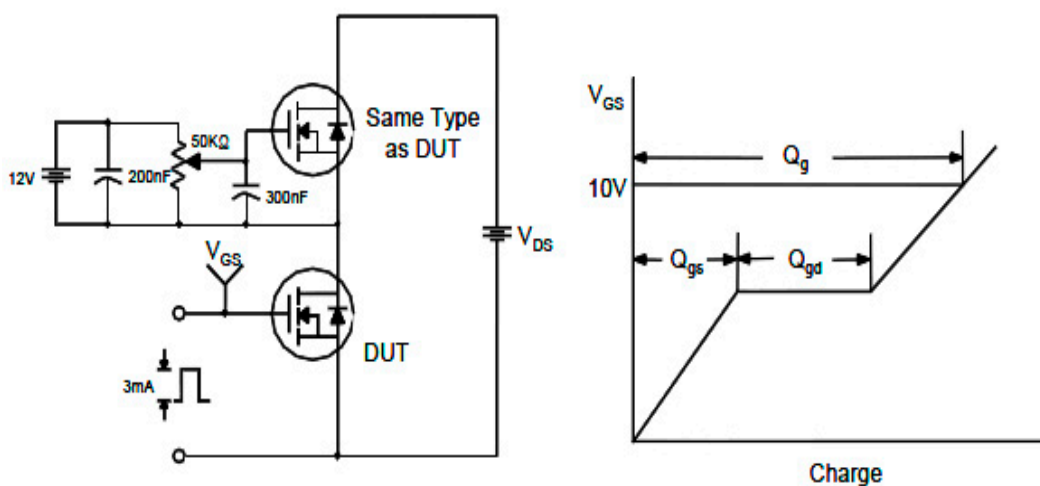
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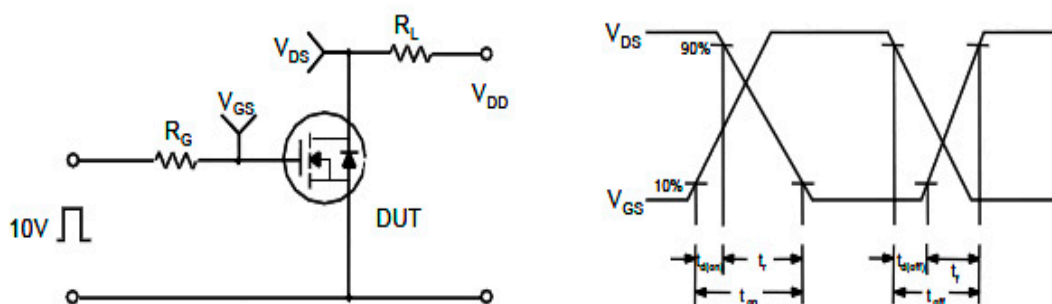
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## 测试电路和波形

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