

双 N 沟道 MOSFET

ELM51034EA-S

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

■概要

ELM51034EA-S 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。另外，此芯片还内藏 ESD 保护电路。

■特点

- $V_{ds}=30V$
- $I_d=0.7A$
- $R_{ds(on)} = 450m\Omega$ ($V_{gs}=4.5V$)
- $R_{ds(on)} = 600m\Omega$ ($V_{gs}=2.5V$)
- ESD 保护

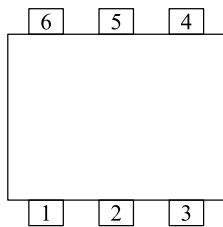
■绝对最大额定值

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}	30	V
栅极 - 源极电压	V_{gs}	± 12	V
漏极电流 ($T_j=150^\circ C$)	Id	$T_a=25^\circ C$	0.7
		$T_a=70^\circ C$	0.4
漏极电流 (脉冲)	I_{dm}	1.0	A
容许功耗	Pd	$T_c=25^\circ C$	0.27
		$T_c=70^\circ C$	0.16
动作结合部温度	T_j	-55 ~ 150	$^\circ C$
保存温度范围	T_{stg}	-55 ~ 150	$^\circ C$

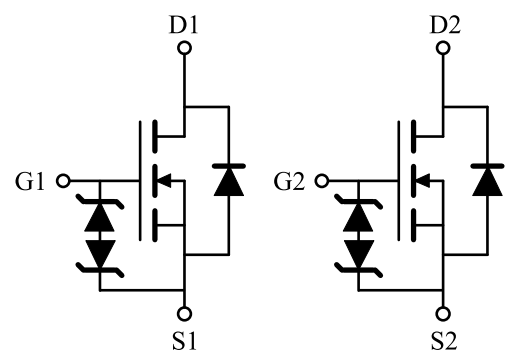
■引脚配置图

SOT-563(俯视图)



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

■电路图



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■电特性

如没有特别注明时, Ta=25℃

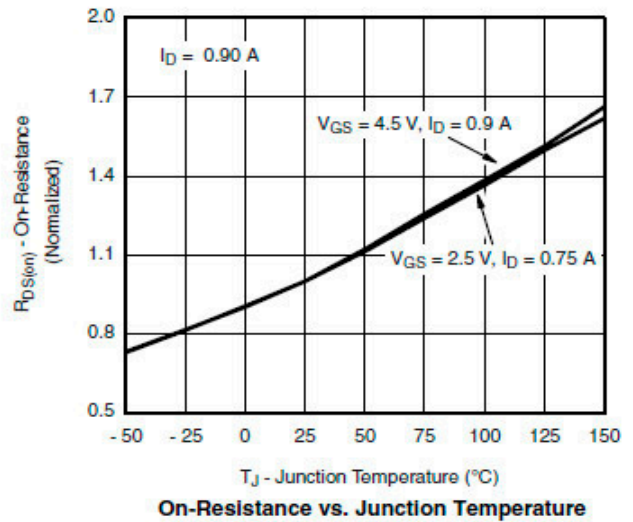
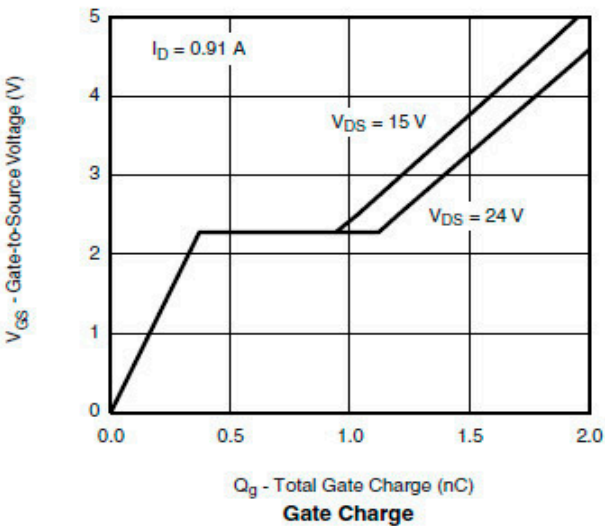
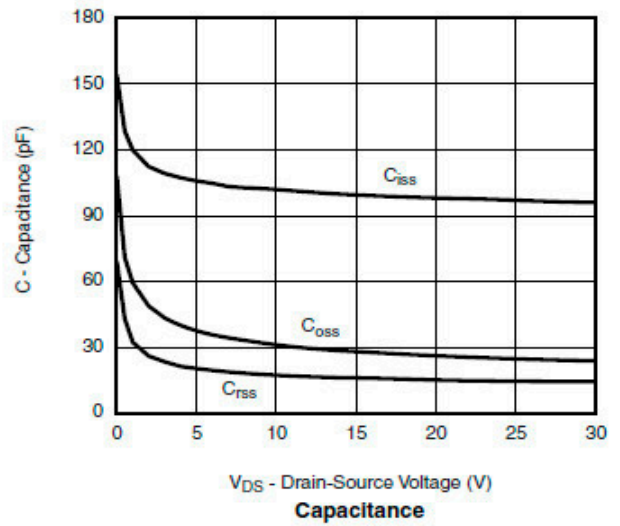
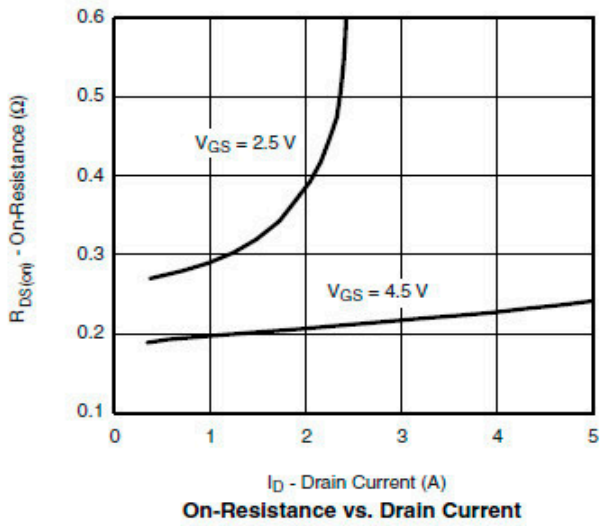
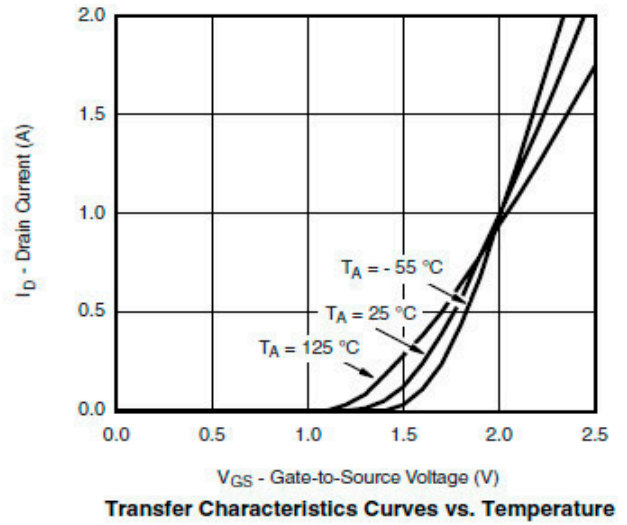
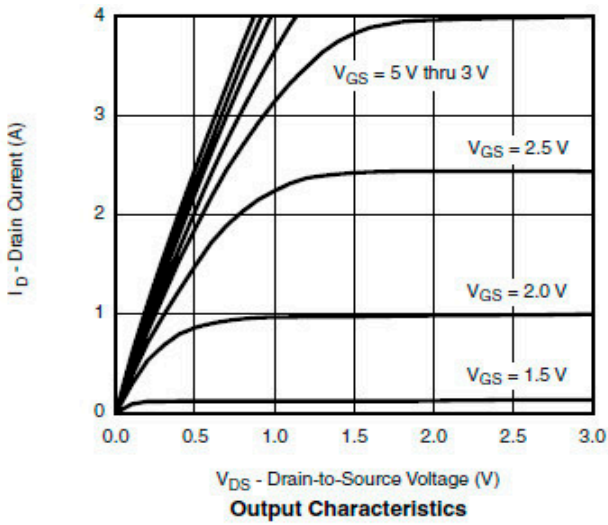
项目	记号	条件	最小值	典型值	最大值	单位
静态特性						
漏极 - 源极击穿电压	BV _{dss}	I _d =250μA, V _{gs} =0V	30			V
栅极接地时漏极电流	I _{dss}	V _{ds} =24V, V _{gs} =0V Ta=85℃			1	μA
					5	
栅极漏电流	I _{gss}	V _{ds} =0V, V _{gs} =±12V			±5	mA
栅极阈值电压	V _{gs(th)}	V _{ds} =V _{gs} , I _d =250μA	0.5		1.5	V
导通时漏极电流	I _{d(on)}	V _{gs} =4.5V, V _{ds} ≥5V	0.7			A
漏极 - 源极导通电阻	R _{dson}	V _{gs} =4.5V, I _d =0.6A		400	450	mΩ
		V _{gs} =2.5V, I _d =0.5A		550	600	
正向跨导	G _{fs}	V _{ds} =10V, I _d =0.4A		1		S
二极管正向压降	V _{sd}	I _s =0.15A, V _{gs} =0V		0.6	1.2	V
寄生二极管最大连续电流	I _s				0.3	A
动态特性						
输入电容	C _{iss}	V _{gs} =0V, V _{ds} =15V, f=1MHz		85		pF
输出电容	C _{oss}			25		pF
反馈电容	C _{rss}			15		pF
开关特性						
总栅极电荷	Q _g	V _{gs} =4.5V, V _{ds} =15V, I _d ≐0.6A		1.4	1.8	nC
栅极 - 源极电荷	Q _{gs}			0.3		nC
栅极 - 漏极电荷	Q _{gd}			0.6		nC
导通延迟时间	t _{d(on)}	V _{gs} =4.5V, V _{ds} =15V R _L =20Ω, I _d ≐0.5A, R _{gen} =1.0Ω		15	25	ns
导通上升时间	t _r			25	45	ns
关闭延迟时间	t _{d(off)}			15	25	ns
关闭下降时间	t _f			10	20	ns

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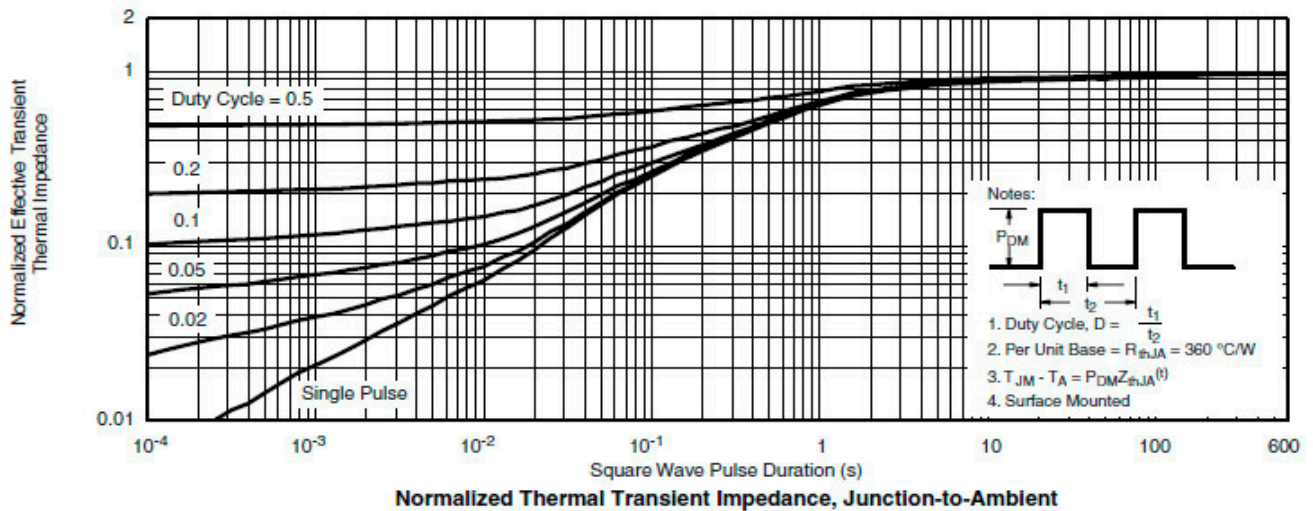
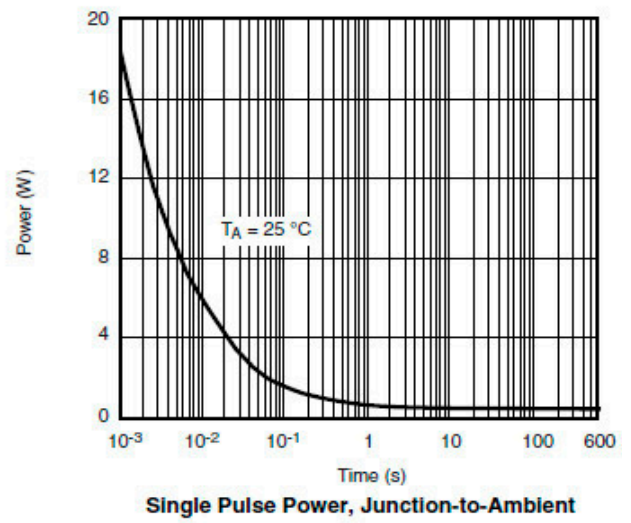
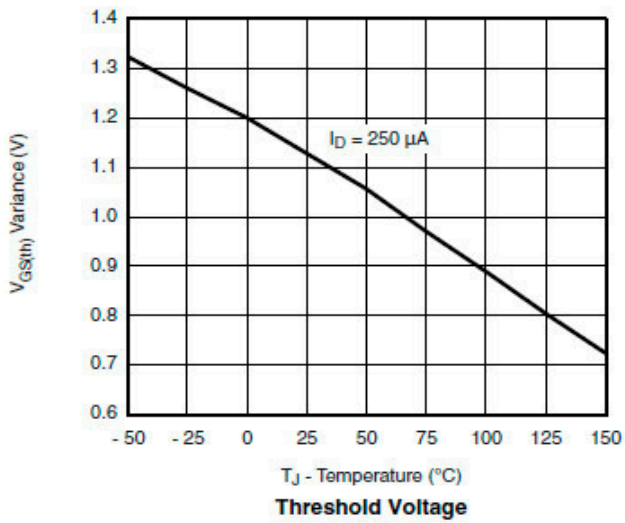
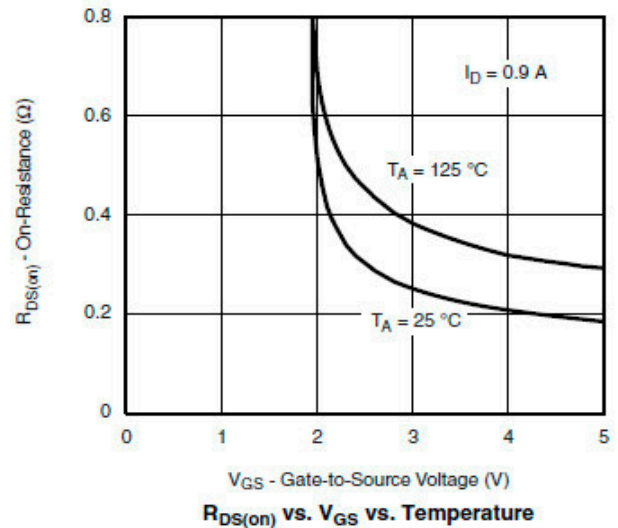
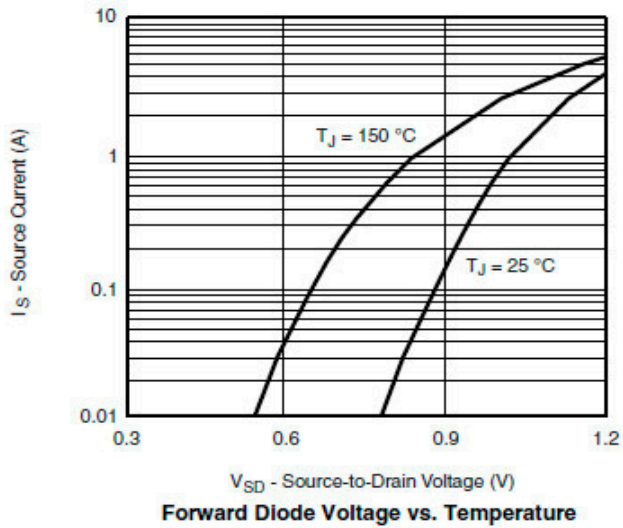
■ 标准特性和热特性曲线



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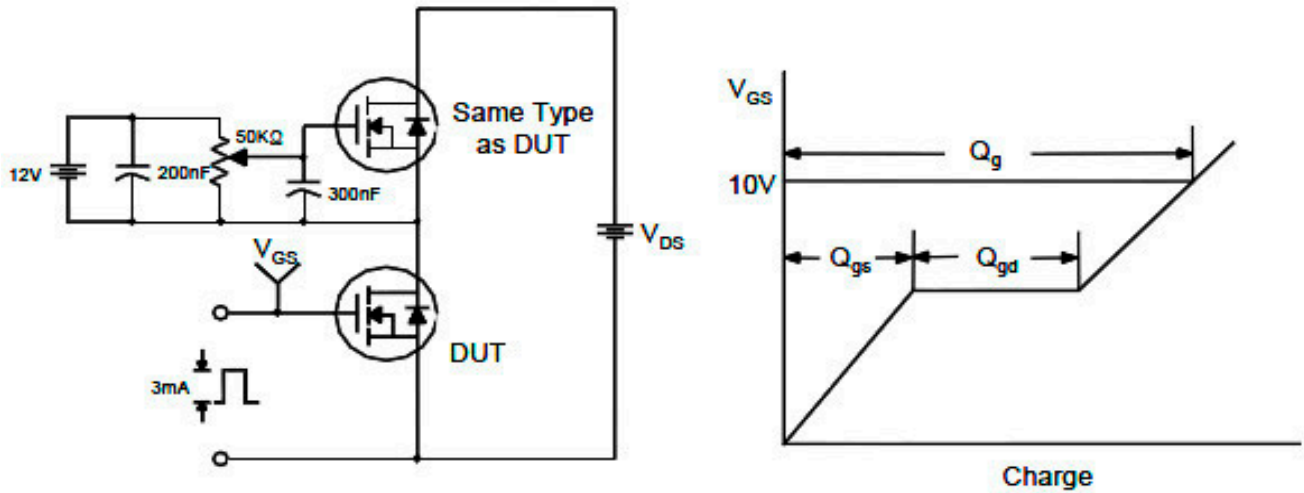
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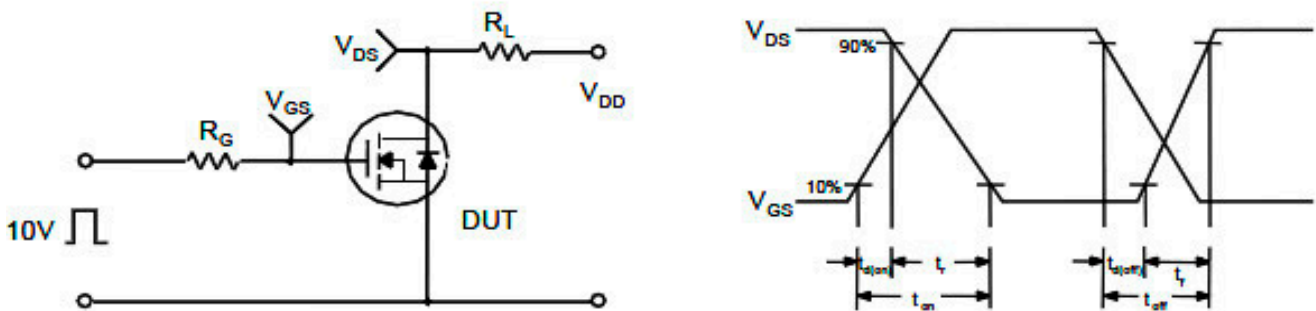
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■ 测试电路和波形

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