

双 P 沟道 MOSFET

ELM544953A-N

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

■概要

ELM544953A-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，内藏有两个 MOSFET。

■特点

- $V_{ds} = -30V$
- $I_d = -5.4A$
- $R_{ds(on)} = 50m\Omega$ ($V_{gs} = -10V$)
- $R_{ds(on)} = 75m\Omega$ ($V_{gs} = -4.5V$)

■绝对最大额定值

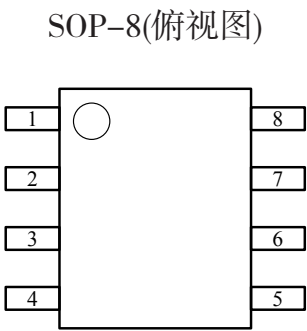
如没有特别注明时, $T_a = 25^\circ C$

项目	记号	规格范围	单位
漏极 - 源极电压	V_{ds}	-30	V
栅极 - 源极电压	V_{gs}	± 20	V
漏极电流 (定常)	I_d	$T_a = 25^\circ C$ -5.4	A
		$T_a = 70^\circ C$ -4.2	
漏极电流 (脉冲)	I_{dm}	-30	A
容许功耗	P_d	$T_c = 25^\circ C$ 2.8	W
		$T_c = 70^\circ C$ 1.8	
结合部温度及保存温度范围	T_j, T_{stg}	- 55 ~ 150	$^\circ C$

■热特性

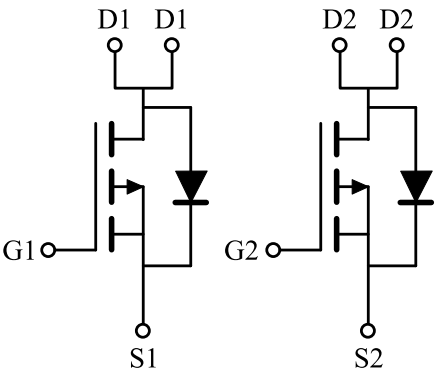
项目	记号	典型值	最大值	单位
最大结合部 - 环境热阻	$R_{\theta ja}$		62.5	$^\circ C/W$

■引脚配置图



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

■电路图



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■电特性

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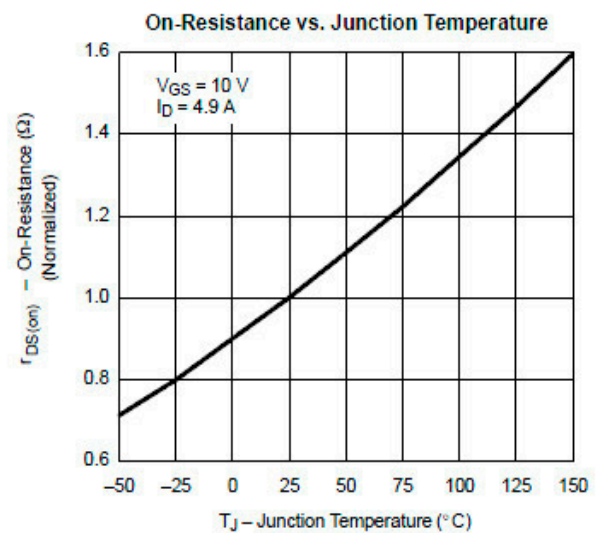
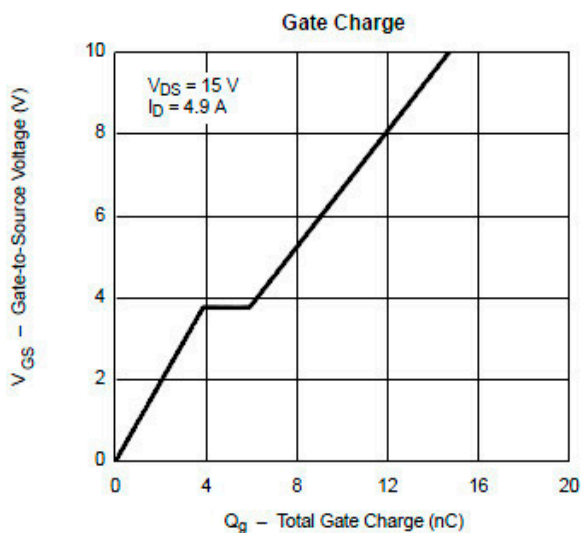
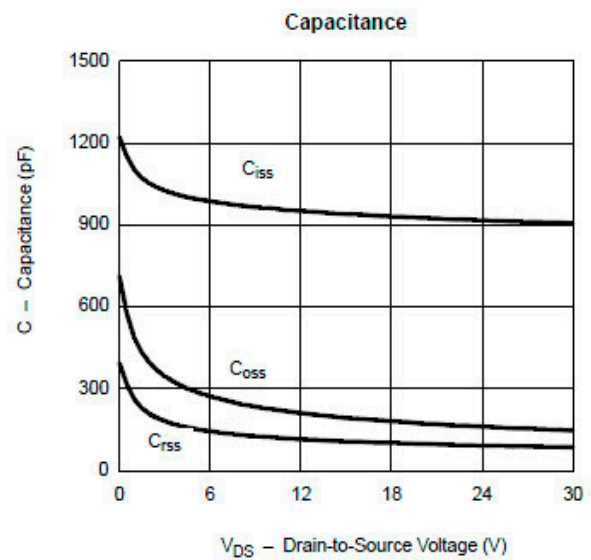
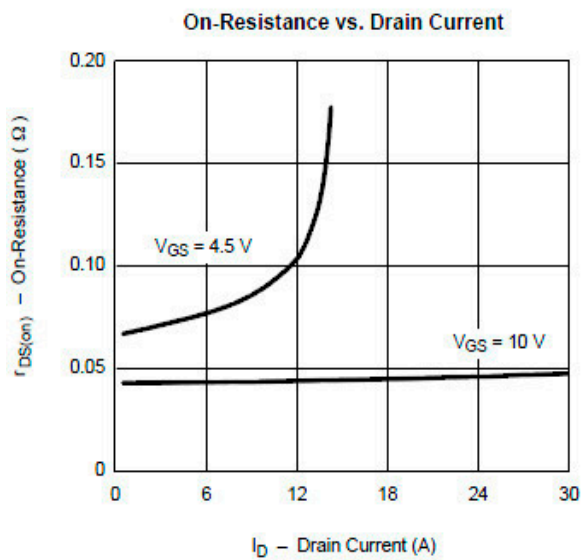
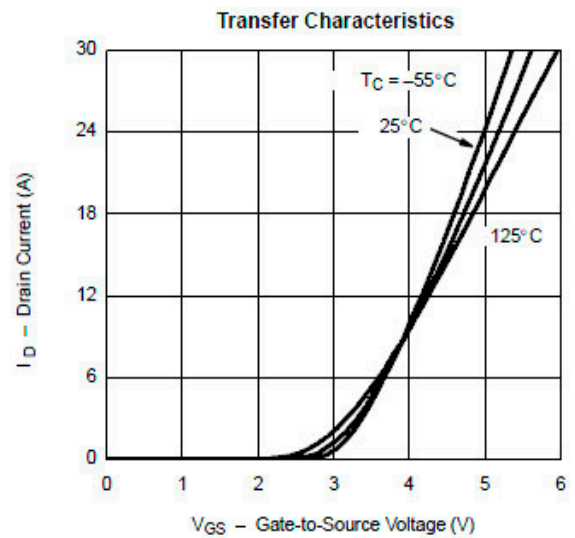
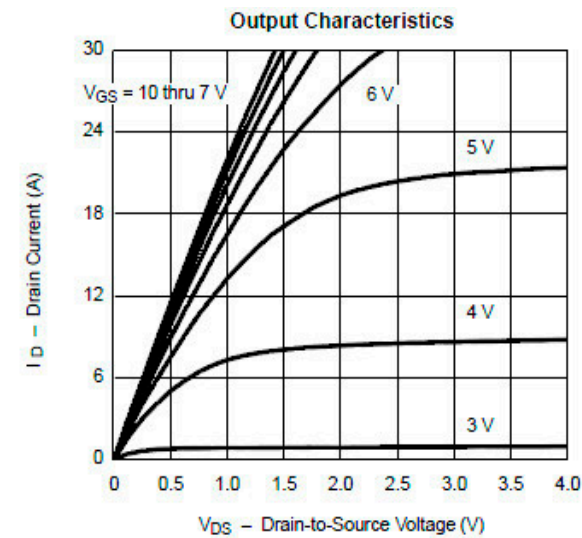
项目	记号	条件	最小值	典型值	最大值	单位	
静态特性							
漏极－源极击穿电压	BV _{dss}	I _d =-250μA, V _{gs} =0V		-30		V	
栅极接地时漏极电流	I _{dss}	V _{ds} =-24V, V _{gs} =0V			-1	μA	
			T _a =85℃				-30
栅极漏电流	I _{gss}	V _{ds} =0V, V _{gs} =±20V			±100	nA	
栅极阈值电压	V _{gs} (th)	V _{ds} =V _{gs} , I _d =-250μA		-1.0	-2.5	V	
导通时漏极电流	I _d (on)	V _{gs} =-10V, V _{ds} =-5V		-25		A	
漏极－源极导通电阻	R _{ds} (on)	V _{gs} =-10V, I _d =-5.4A			35	50	mΩ
		V _{gs} =-4.5V, I _d =-4.2A			56	75	
正向跨导	G _{fs}	V _{ds} =-10V, I _d =-4.9A			10	S	
二极管正向压降	V _{sd}	I _s =-1.7A, V _{gs} =0V			-0.8	-1.3	V
寄生二极管最大连续电流	I _s					-1.7	A
动态特性							
输入电容	C _{iss}	V _{gs} =0V, V _{ds} =-15V, f=1MHz			500		pF
输出电容	C _{oss}				100		pF
反馈电容	C _{rss}				55		pF
开关特性							
总栅极电荷	Q _g	V _{gs} =-10V, V _{ds} =-15V I _d =-5A			10.0	18.0	nC
栅极－源极电荷	Q _{gs}				1.6		nC
栅极－漏极电荷	Q _{gd}				3.0		nC
导通延迟时间	t _d (on)	V _{gs} =-10V, V _{ds} =-15V R _L =15Ω, I _d =-1.0A R _{gen} =6Ω			8	18	ns
导通上升时间	t _r				8	18	ns
关闭延迟时间	t _d (off)				25	50	ns
关闭下降时间	t _f				25	35	ns

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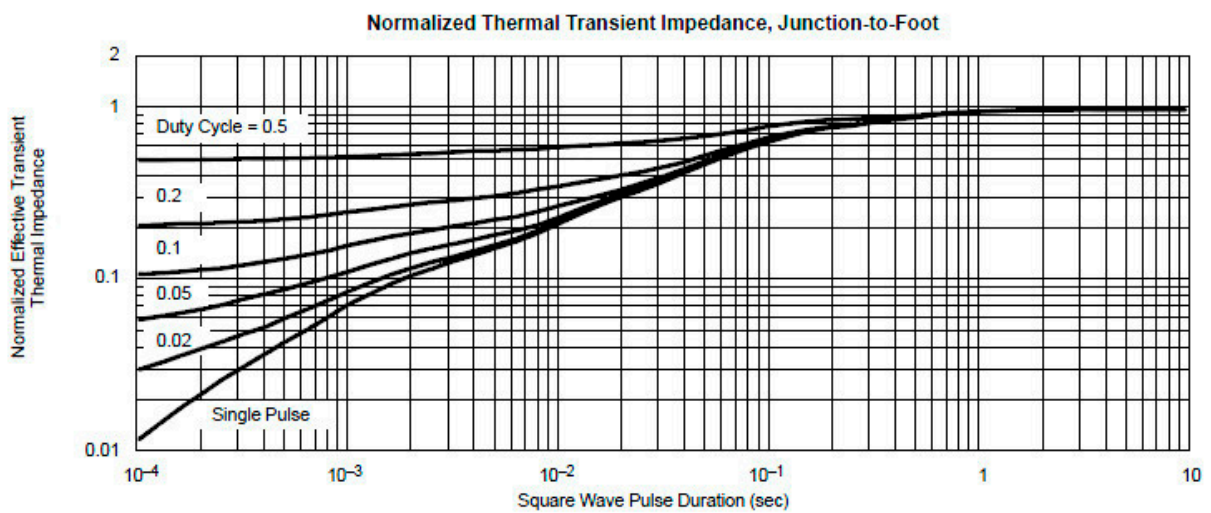
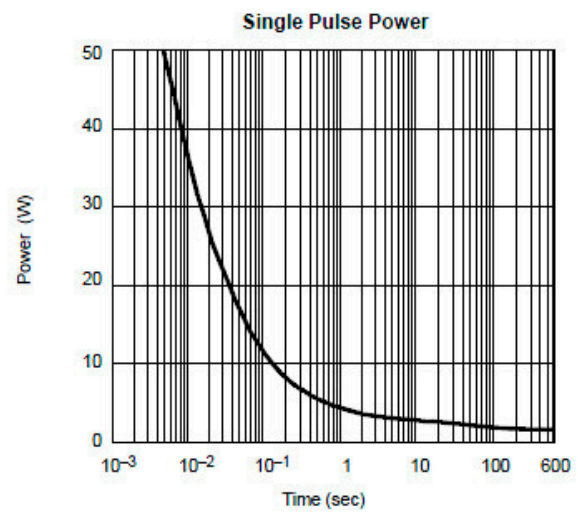
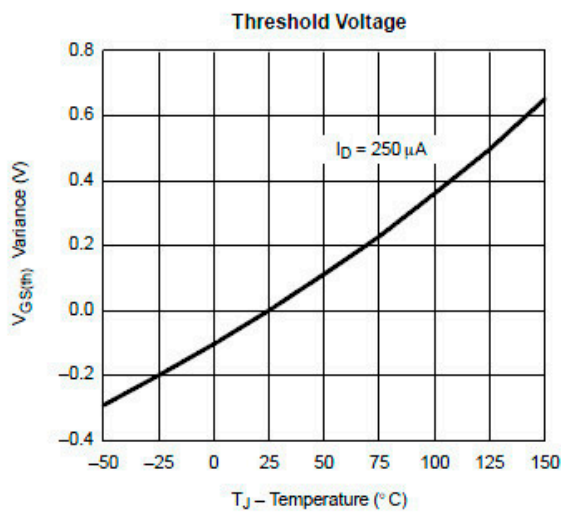
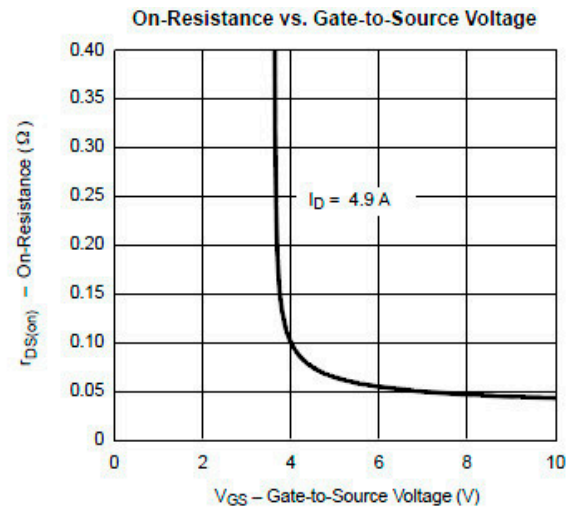
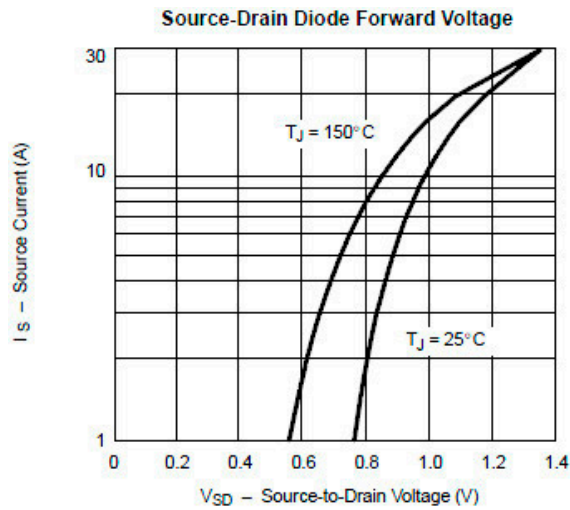
■ 标准特性和热特性曲线



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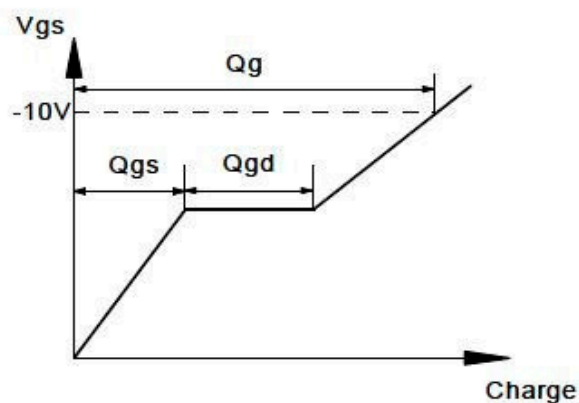
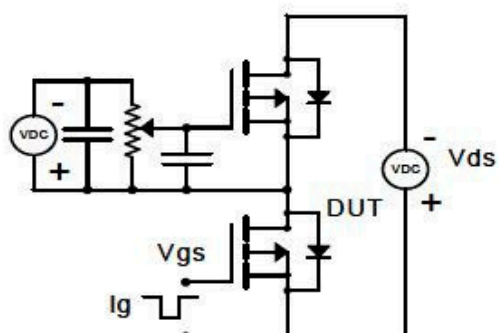
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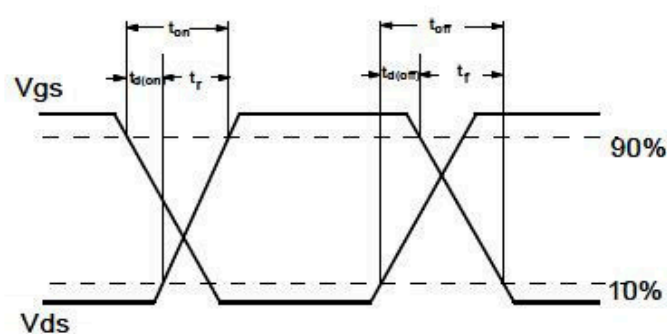
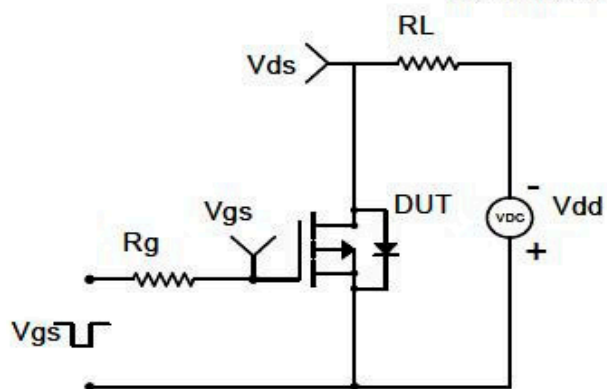
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■测试电路和波形

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms

