

单 P 沟道 MOSFET

ELM53679SA-S

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

■概要

ELM53679SA-S 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

- $V_{ds} = -30V$
- $I_d = -20A$
- $R_{ds(on)} = 10m\Omega$ ($V_{gs} = -10V$)
- $R_{ds(on)} = 15m\Omega$ ($V_{gs} = -4.5V$)

■绝对最大额定值

如没有特别注明时, $T_a = 25^\circ C$

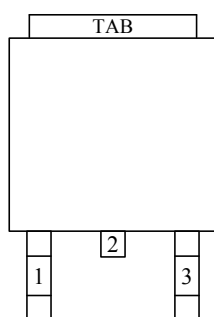
项目	记号	规格范围	单位	
漏极 - 源极电压	V_{ds}	-30	V	
栅极 - 源极电压	V_{gs}	± 20	V	
漏极电流 (定常) $T_j = 150^\circ C$	Id	$T_a = 25^\circ C$	-20.0	A
		$T_a = 70^\circ C$	-15.0	
漏极电流 (脉冲)	I_{dm}	-200	A	
容许功耗	Pd	$T_c = 25^\circ C$	40	W
		$T_c = 70^\circ C$	15	
动作结合部温度	T_j	150	$^\circ C$	
保存温度范围	T_{stg}	-55 ~ 150	$^\circ C$	

■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	$^\circ C/W$

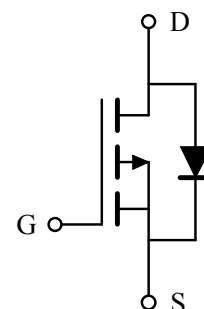
■引脚配置图

TO-252-3(俯视图)



引脚编号	引脚名称
1	GATE
2	DRAIN
3	SOURCE

■电路图



单 P 沟道 MOSFET

ELM53679SA-S

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

■电特性

如没有特别注明时, Ta=25℃

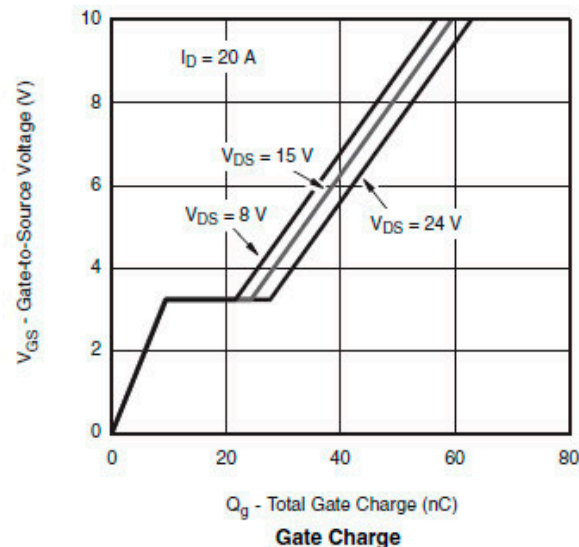
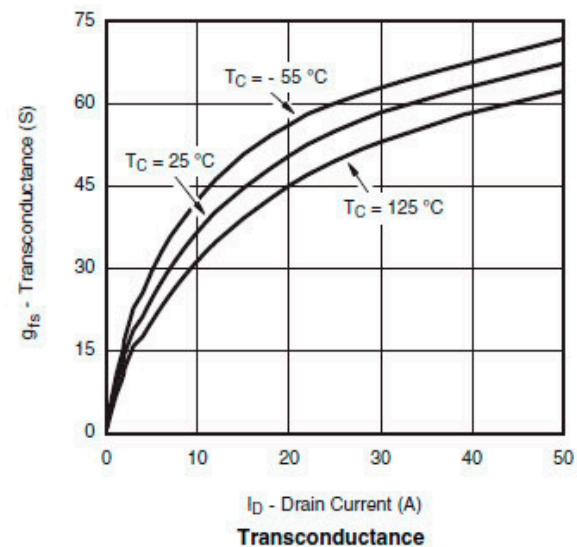
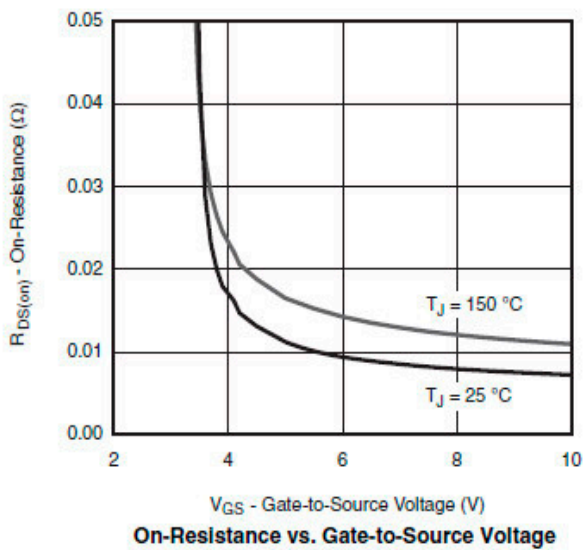
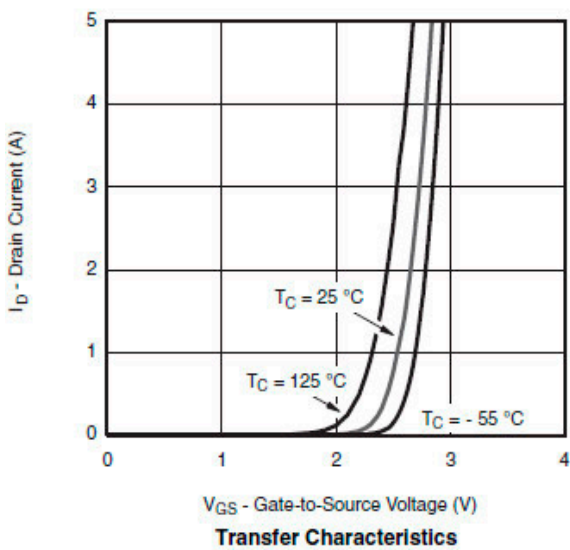
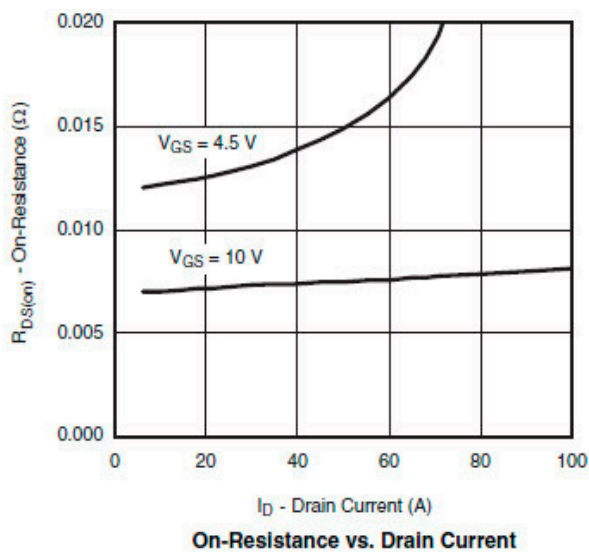
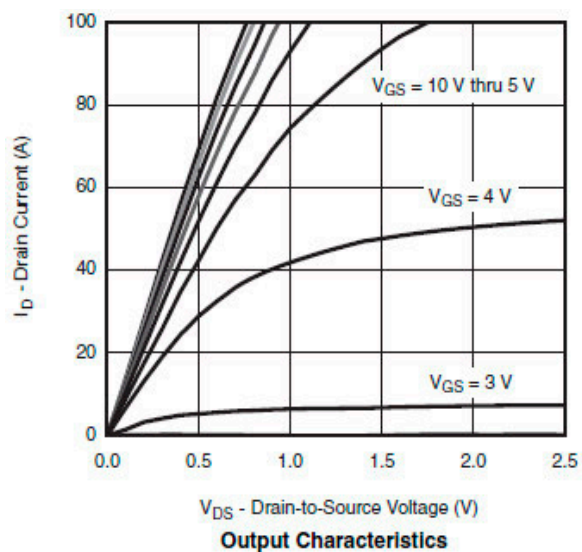
项目	记号	条件	最小值	典型值	最大值	单位
静态特性						
漏极 - 源极击穿电压	BV _{dss}	Id=-250μA, V _{gs} =0V	-30			V
栅极接地时漏极电流	Id _{ss}	V _{ds} =-24V			-1	μA
		V _{gs} =0V		Ta=85℃	-30	
栅极漏电流	I _{gss}	V _{ds} =0V, V _{gs} =±20V			±100	nA
栅极阈值电压	V _{gs(th)}	V _{ds} =V _{gs} , Id=-250μA	-1.0		-3.0	V
导通时漏极电流	Id(on)	V _{gs} =-10V, V _{ds} ≥-5V	-50			A
漏极 - 源极导通电阻	R _{ds(on)}	V _{gs} =-10V, Id=-20A		8.5	10.0	mΩ
		V _{gs} =-4.5V, Id=-15A		12.5	15.0	
正向跨导	G _{fs}	V _{ds} =-15V, Id=-20.0A		45		S
二极管正向压降	V _{sd}	I _s =-1.0A, V _{gs} =0V		-0.7	-1.3	V
寄生二极管最大连续电流	I _s				-9.0	A
动态特性						
输入电容	C _{iss}	V _{gs} =0V, V _{ds} =-15V, f=1MHz		2450		pF
输出电容	C _{oss}			495		pF
反馈电容	C _{rss}			415		pF
开关特性						
总栅极电荷	Q _g	V _{gs} =-10V, V _{ds} =-15V Id≡-20A		55	85	nC
栅极 - 源极电荷	Q _{gs}			9		nC
栅极 - 漏极电荷	Q _{gd}			12		nC
导通延迟时间	t _{d(on)}	V _{gs} =-10V, V _{ds} =-15V RL=1.5Ω, Id≡-10.0A R _{gen} =1.0Ω		10	20	ns
导通上升时间	t _r			10	20	ns
关闭延迟时间	t _{d(off)}			30	50	ns
关闭下降时间	t _f			10	20	ns

单 P 沟道 MOSFET

ELM53679SA-S

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

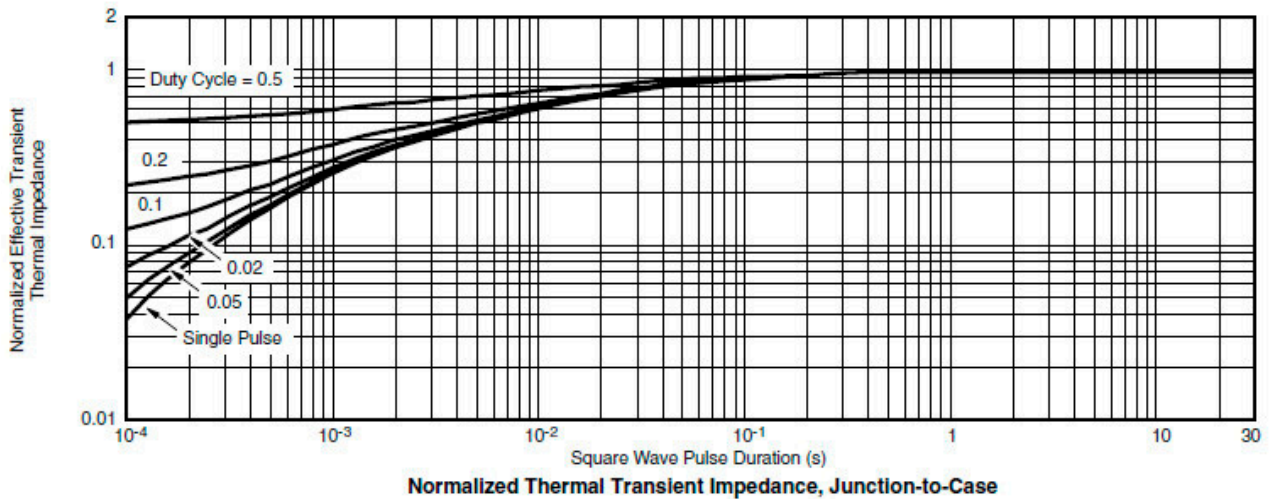
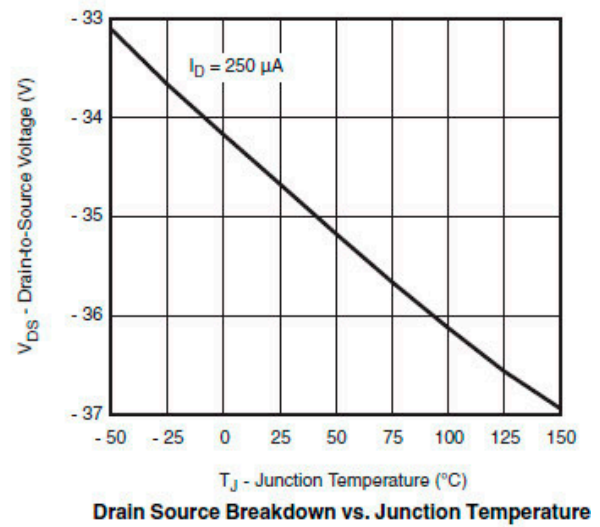
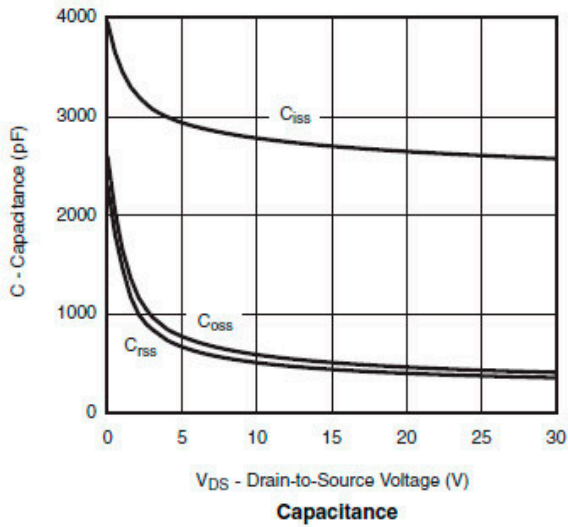
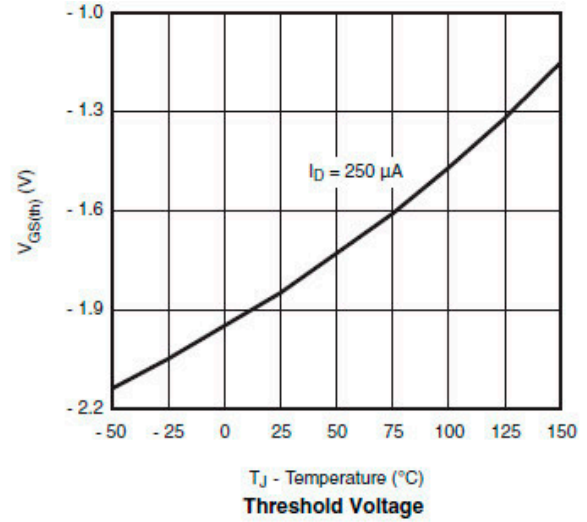
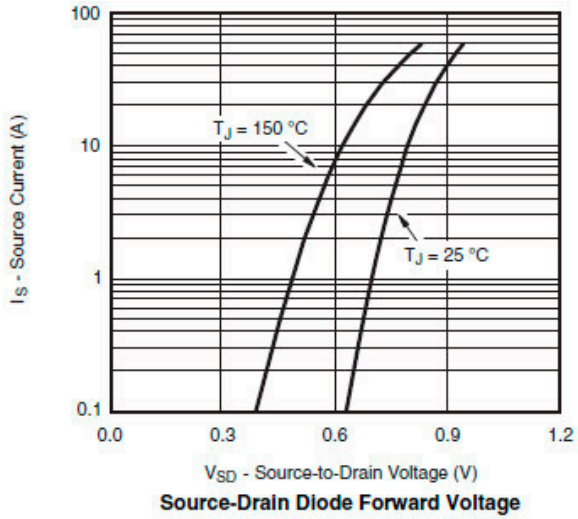
■ 标准特性和热特性曲线



单 P 沟道 MOSFET

ELM53679SA-S

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



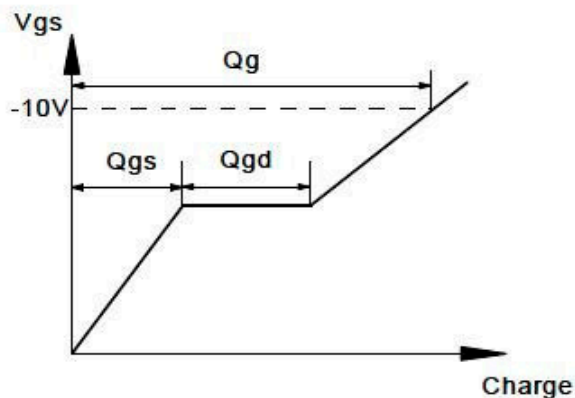
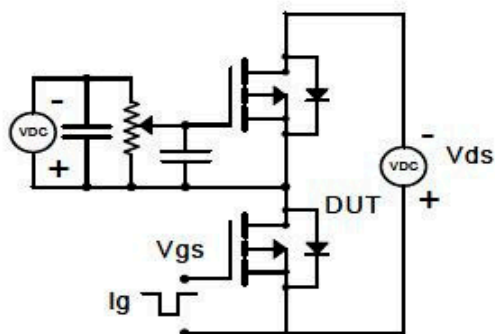
单 P 沟道 MOSFET

ELM53679SA-S

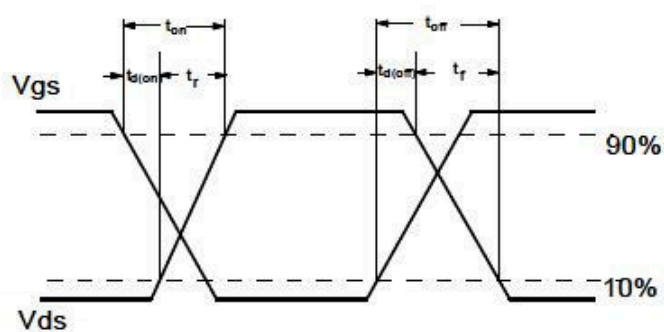
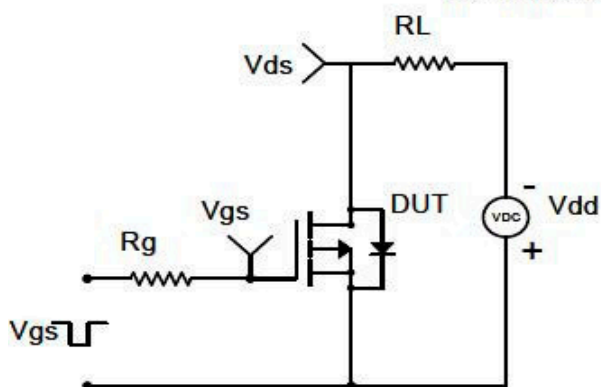
<http://www.elm-tech.com>

■测试电路和波形

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms

