

# 单 N 沟道 MOSFET

ELM52376A-S

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

## ■概要

ELM52376A-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。

## ■特点

- $V_{ds}=60V$
- $I_d=3.6A$  ( $V_{gs}=10V$ )
- $R_{ds(on)} < 70m\Omega$  ( $V_{gs}=10V$ )
- $R_{ds(on)} < 78m\Omega$  ( $V_{gs}=4.5V$ )

## ■绝对最大额定值

如没有特别注明时,  $T_a=25^\circ C$

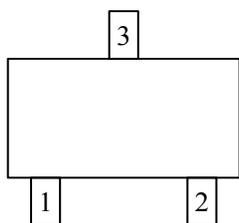
项目	记号	规格范围	单位	
漏极 - 源极电压	$V_{ds}$	60	V	
栅极 - 源极电压	$V_{gs}$	$\pm 20$	V	
漏极电流 ( $T_j=150^\circ C$ )	Id	$T_a=25^\circ C$	3.6	A
		$T_a=70^\circ C$	2.8	
漏极电流 (脉冲)	$I_{dm}$	10	A	
容许功耗	Pd	$T_c=25^\circ C$	1.25	W
		$T_c=70^\circ C$	0.80	
结合部温度及保存温度范围	$T_j, T_{stg}$	- 55 ~ 150	$^\circ C$	

## ■热特性

项目	记号	典型值	最大值	单位
最大结合部 - 环境热阻	$R_{\theta ja}$		120	$^\circ C/W$

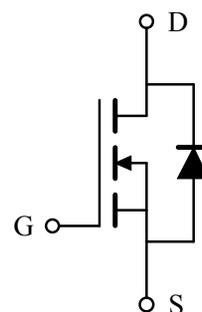
## ■引脚配置图

SOT-23(俯视图)



引脚编号	引脚名称
1	GATE
2	SOURCE
3	DRAIN

## ■电路图



# 单 N 沟道 MOSFET

ELM52376A-S

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

## ■电特性

如没有特别注明时, Ta=25℃

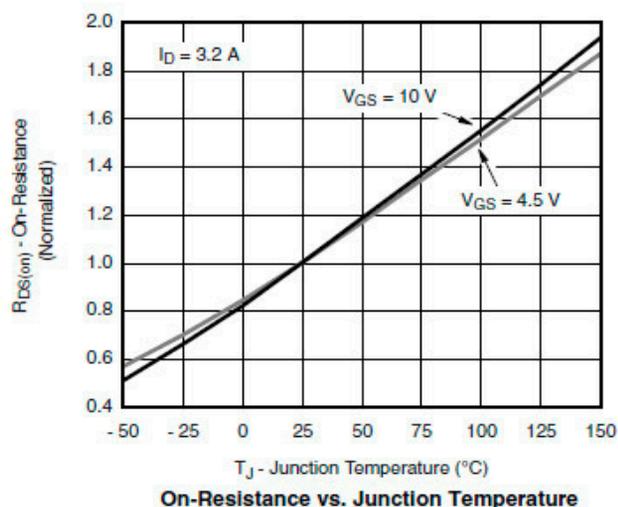
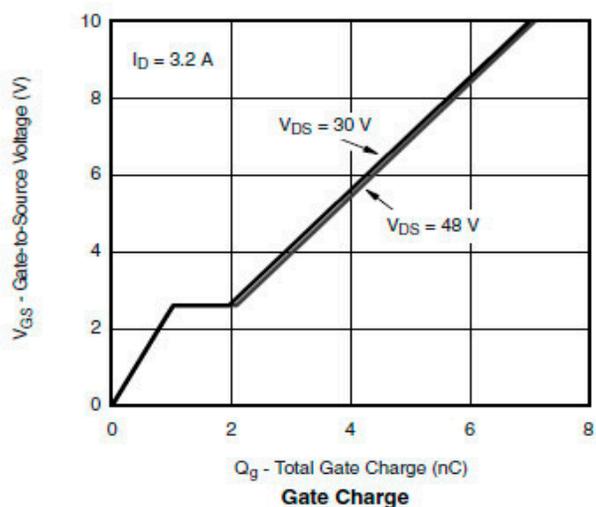
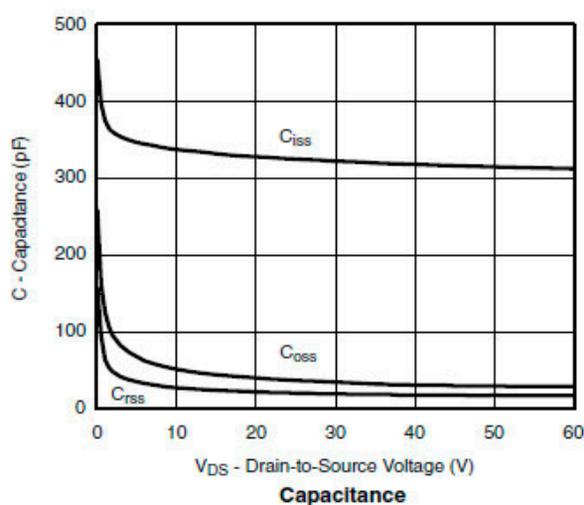
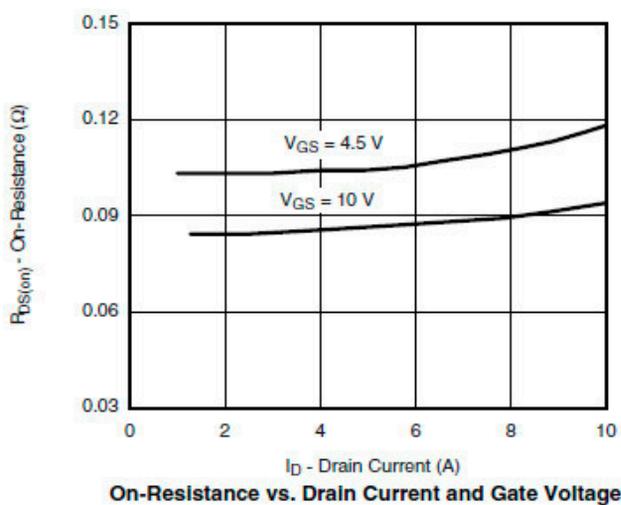
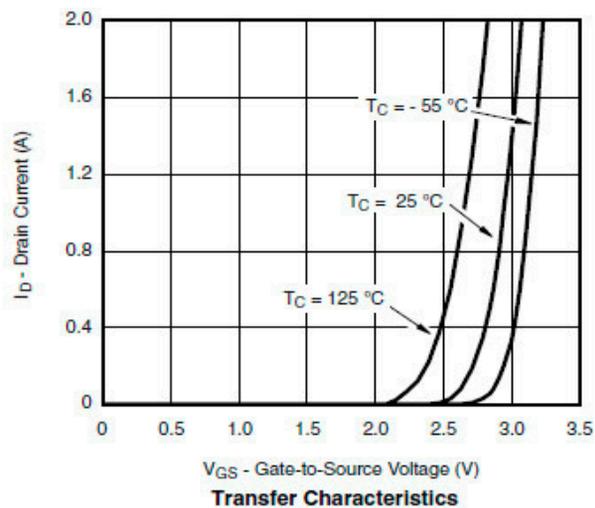
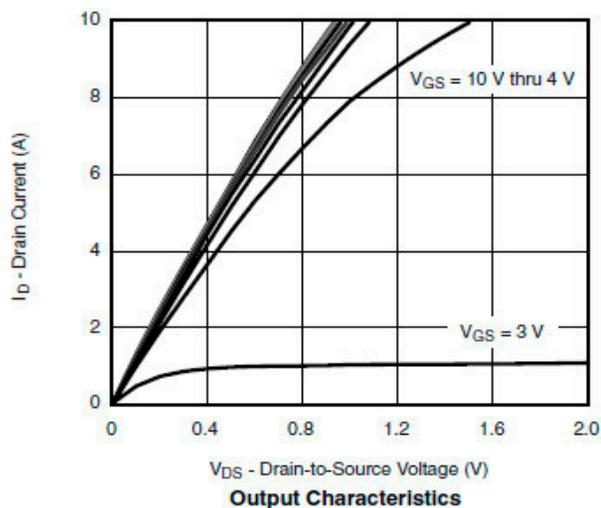
项目	记号	条件	最小值	典型值	最大值	单位
静态特性						
漏极 - 源极击穿电压	BV <sub>dss</sub>	I <sub>d</sub> =250μA, V <sub>gs</sub> =0V	60			V
栅极接地时漏极电流	I <sub>dss</sub>	V <sub>ds</sub> =48V, V <sub>gs</sub> =0V			1	μA
		V <sub>ds</sub> =48V, V <sub>gs</sub> =0V, Ta=85℃			10	
栅极漏电电流	I <sub>gss</sub>	V <sub>ds</sub> =0V, V <sub>gs</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> =250μA	1.0		2.0	V
导通时漏极电流	I <sub>d(on)</sub>	V <sub>gs</sub> =10V, V <sub>ds</sub> =5V	6			A
漏极 - 源极导通电阻	R <sub>ds(on)</sub>	V <sub>gs</sub> =10V, I <sub>d</sub> =3.6A		55	70	mΩ
		V <sub>gs</sub> =4.5V, I <sub>d</sub> =2.8A		60	78	
正向跨导	G <sub>fs</sub>	V <sub>ds</sub> =15V, I <sub>d</sub> =3.2A		15		S
二极管正向压降	V <sub>sd</sub>	I <sub>s</sub> =2.5A, V <sub>gs</sub> =0V		0.85	1.20	V
寄生二极管最大连续电流	I <sub>s</sub>				1.6	A
动态特性						
输入电容	C <sub>iss</sub>	V <sub>gs</sub> =0V, V <sub>ds</sub> =30V, f=1MHz		400		pF
输出电容	C <sub>oss</sub>			40		pF
反馈电容	C <sub>rss</sub>			20		pF
开关特性						
总栅极电荷	Q <sub>g</sub>	V <sub>gs</sub> =4.5V, V <sub>ds</sub> =30V, I <sub>d</sub> =3.2A		6.0	12.0	nC
栅极 - 源极电荷	Q <sub>gs</sub>			1.5		nC
栅极 - 漏极电荷	Q <sub>gd</sub>			1.2		nC
导通延迟时间	t <sub>d(on)</sub>	V <sub>gs</sub> =10V, V <sub>ds</sub> =30V R <sub>L</sub> =12Ω, I <sub>d</sub> =2.5A R <sub>gen</sub> =1Ω		8	15	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

# 单 N 沟道 MOSFET

ELM52376A-S

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

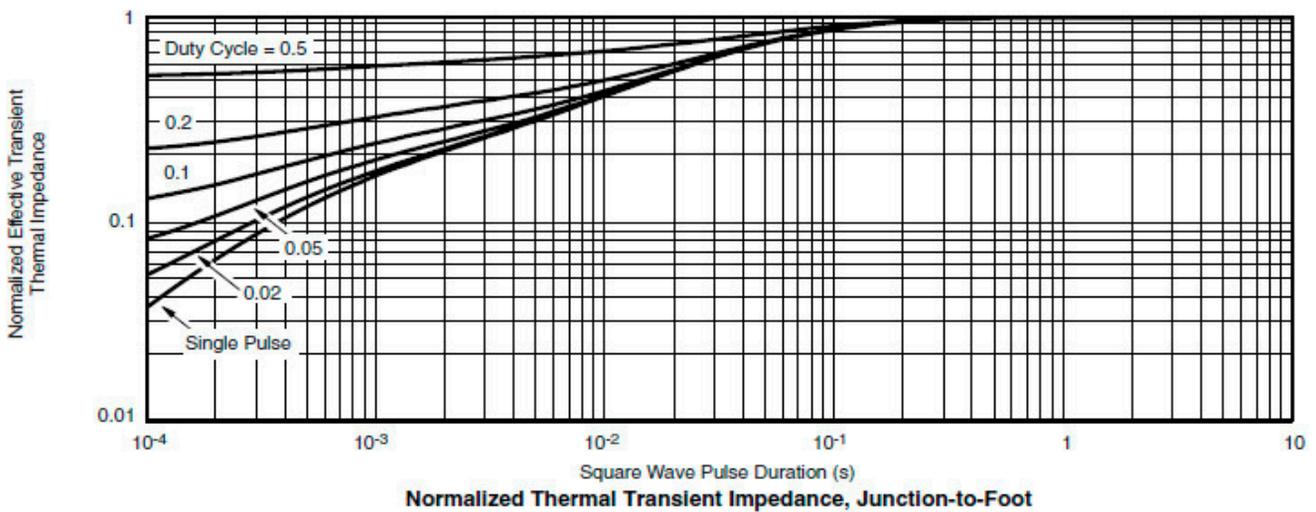
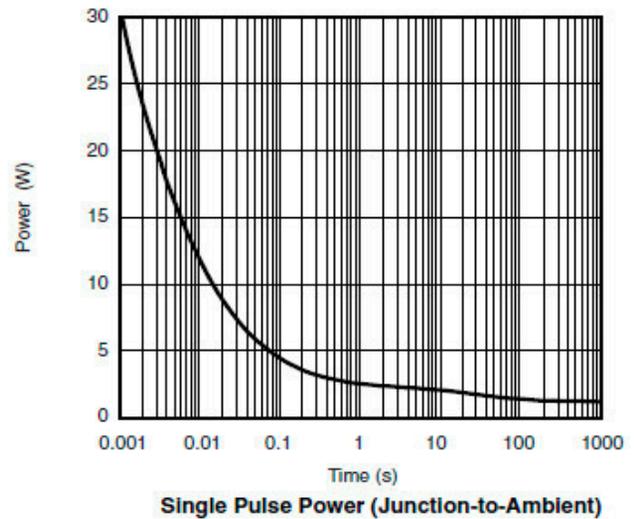
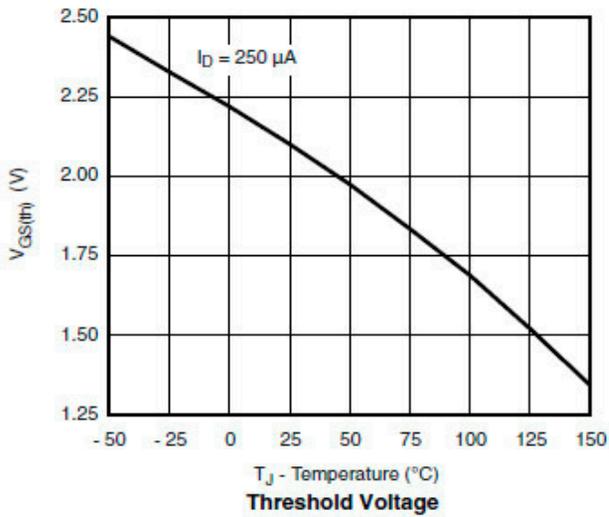
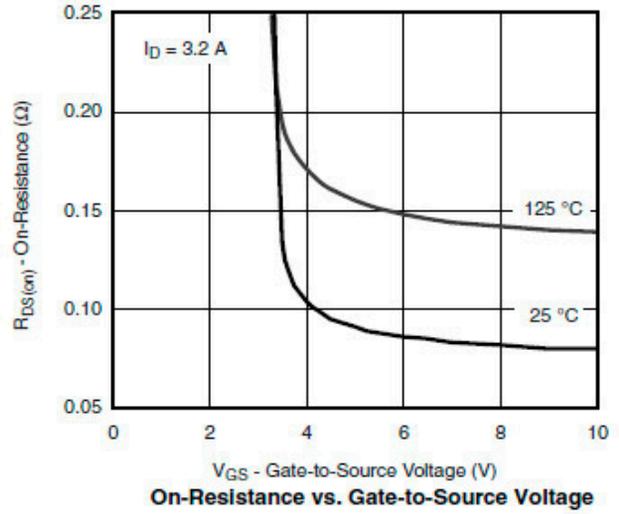
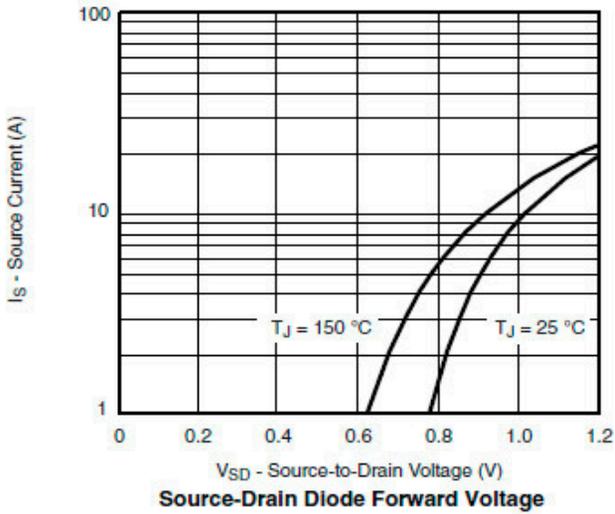
## ■ 标准特性和热特性曲线



# 单 N 沟道 MOSFET

ELM52376A-S

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



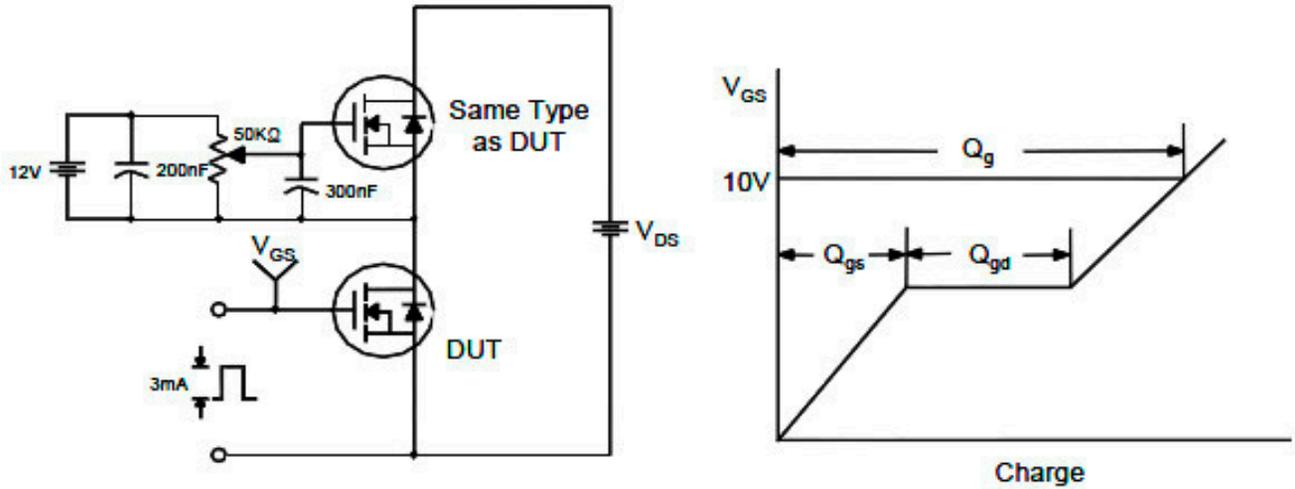
# 单 N 沟道 MOSFET

ELM52376A-S

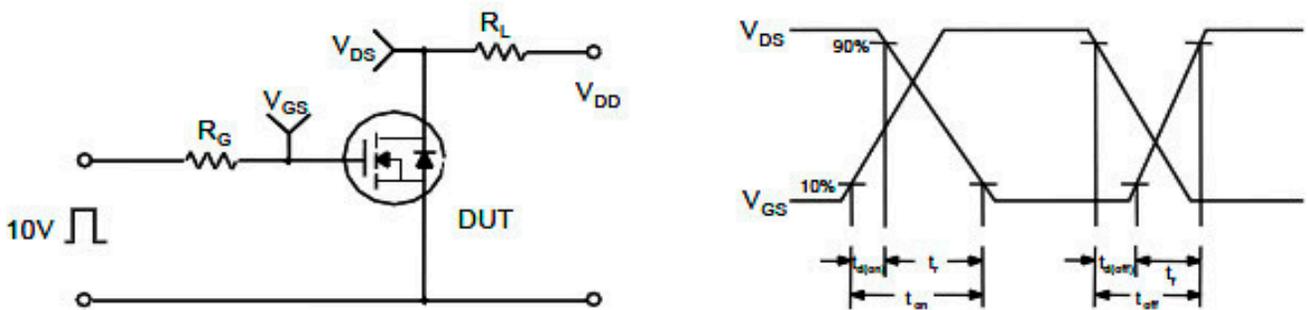
<http://www.elm-tech.com>

## 测试电路和波形

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms

