

# 单 N 沟道 MOSFET

ELM51480A-S

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## ■概要

ELM51480A-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

- $V_{ds}=100V$
- $I_d=2.3A$
- $R_{ds(on)} = 285m\Omega$  ( $V_{gs}=10V$ )
- $R_{ds(on)} = 295m\Omega$  ( $V_{gs}=4.5V$ )

## ■绝对最大额定值

如没有特别注明时,  $T_a=25^\circ C$

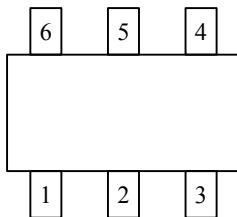
项目	记号	规格范围	单位
漏极 - 源极电压	$V_{ds}$	100	V
栅极 - 源极电压	$V_{gs}$	$\pm 20$	V
漏极电流 ( $T_j=150^\circ C$ )	Id	$T_a=25^\circ C$	2.3
		$T_a=70^\circ C$	1.8
漏极电流 (脉冲)	$I_{dm}$	7	A
容许功耗	Pd	$T_c=25^\circ C$	1.5
		$T_c=70^\circ C$	1.0
动作结合部温度	$T_j$	150	$^\circ C$
保存温度范围	$T_{stg}$	- 55 ~ 150	$^\circ C$

## ■热特性

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

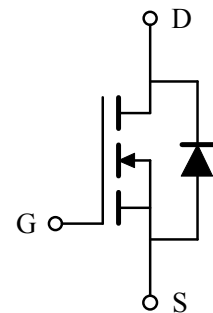
## ■引脚配置图

SC-70-6(俯视图)



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

## ■电路图



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## ■电特性

如没有特别注明时, Ta=25℃

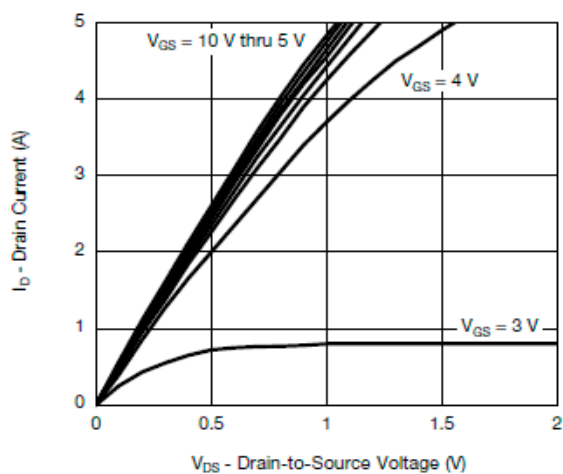
项目	记号	条件	最小值	典型值	最大值	单位
静态特性						
漏极 - 源极击穿电压	BVdss	Id=250μA, Vgs=0V	100			V
栅极接地时漏极电流	Idss	Vds=80V, Vgs=0V			1	μA
		Vds=80V, Vgs=0V, Ta=85℃			10	
栅极漏电电流	Igss	Vds=0V, Vgs=±20V			±100	nA
栅极阈值电压	Vgs(th)	Vds=Vgs, Id=250μA	1.0		2.0	V
导通时漏极电流	Id(on)	Vgs=4.5V, Vds≥5V	5			A
漏极 - 源极导通电阻	Rds(on)	Vgs=10V, Id=2.3A		265	285	mΩ
		Vgs=4.5V, Id=1.8A		275	295	
正向跨导	Gfs	Vds=20V, Id=1.5A		2		S
二极管正向压降	Vsd	Is=1.3A, Vgs=0V		0.85	1.20	V
寄生二极管最大连续电流	Is				1.3	A
动态特性						
输入电容	Ciss	Vgs=0V, Vds=50V, f=1MHz		200		pF
输出电容	Coss			22		pF
反馈电容	Crss			13		pF
开关特性						
总栅极电荷	Qg	Vgs=4.5V, Vds=50V, Id≐1.6A		2.80	5.80	nC
栅极 - 源极电荷	Qgs			0.75		nC
栅极 - 漏极电荷	Qgd			1.40		nC
导通延迟时间	td(on)	Vgs=4.5V, Vds=50V RL=39Ω, Id≐1.3A Rgen=1.0Ω		25	50	ns
导通上升时间	tr			20	50	ns
关闭延迟时间	td(off)			15	30	ns
关闭下降时间	tf			10	25	ns

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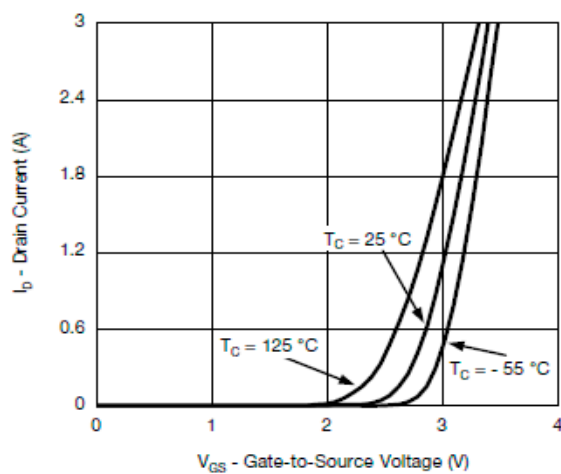
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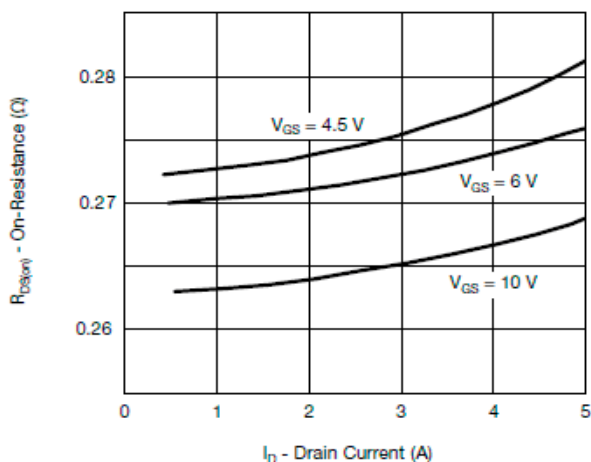
## ■ 标准特性和热特性曲线



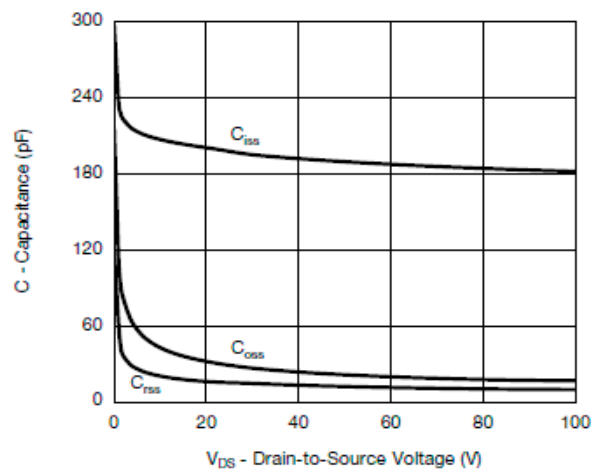
Output Characteristics



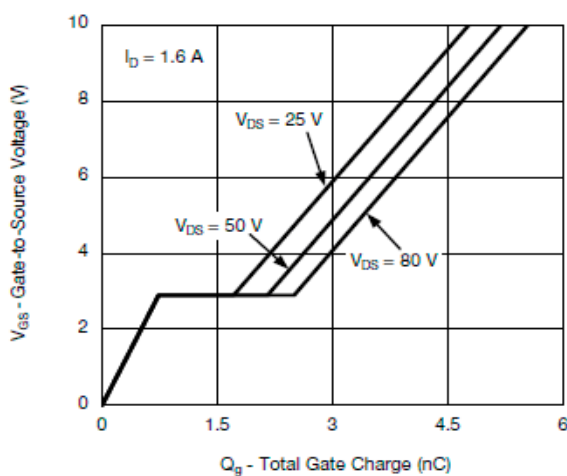
Transfer Characteristics



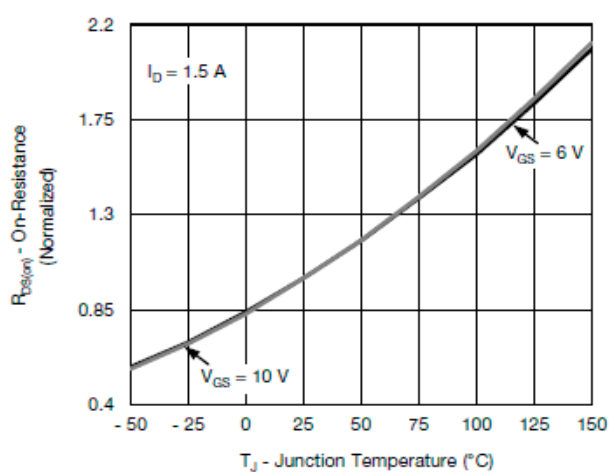
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



Gate Charge

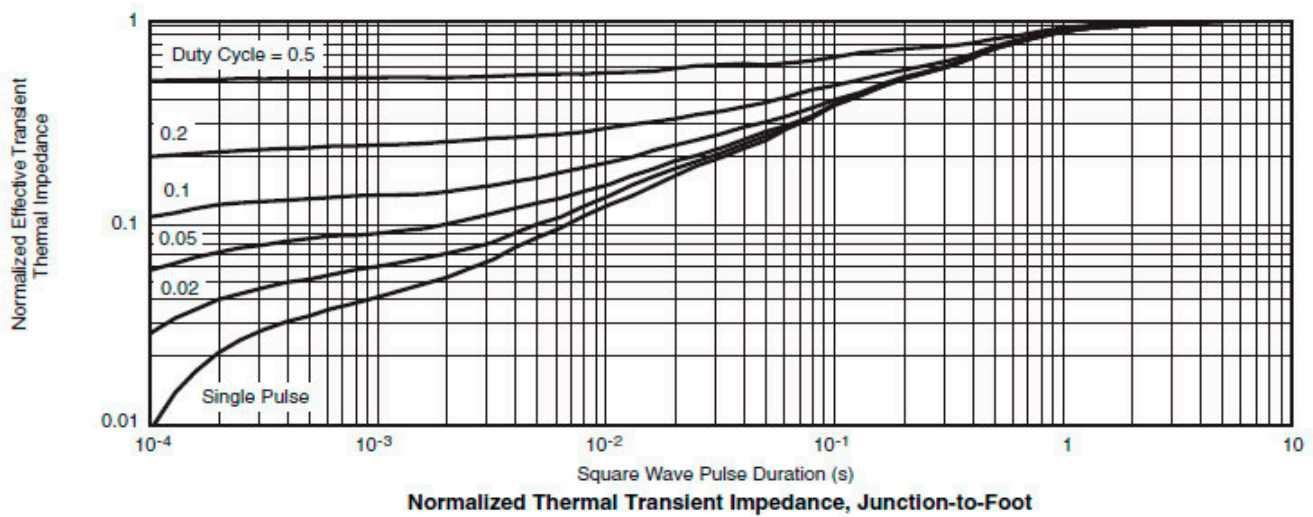
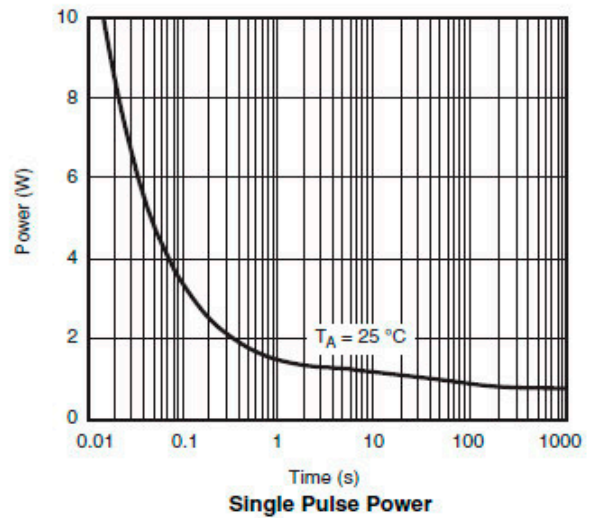
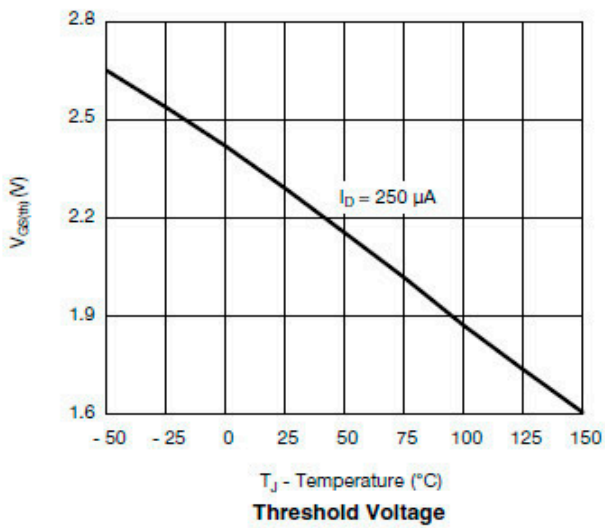
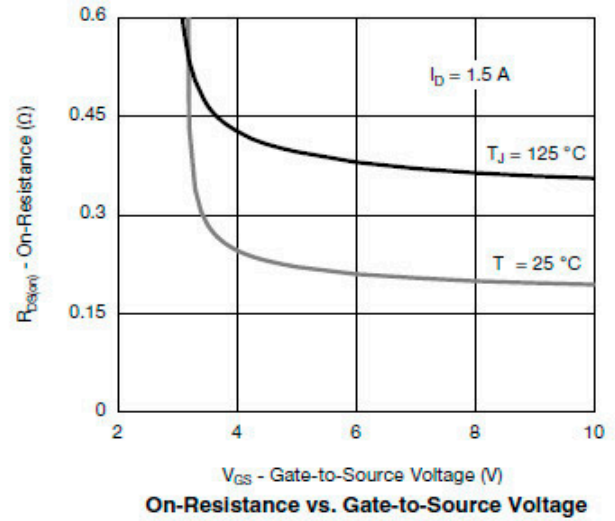
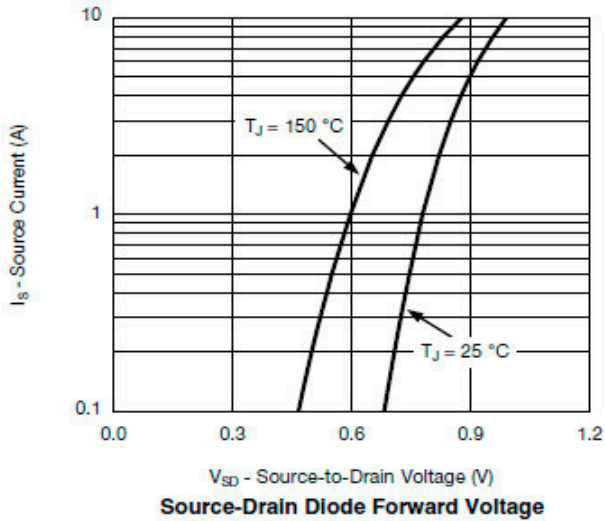


On-Resistance vs. Junction Temperature

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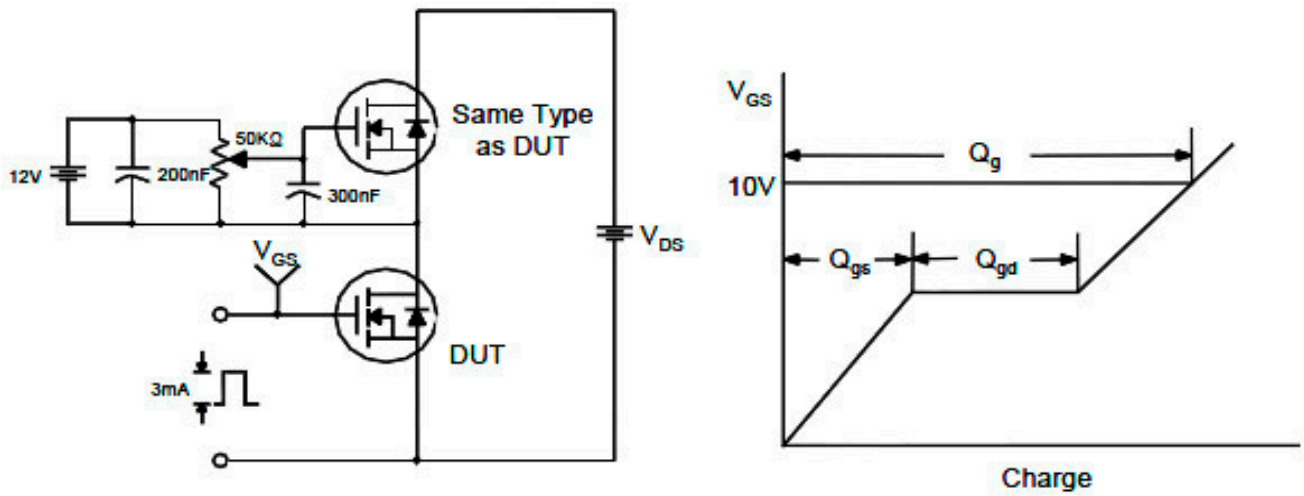
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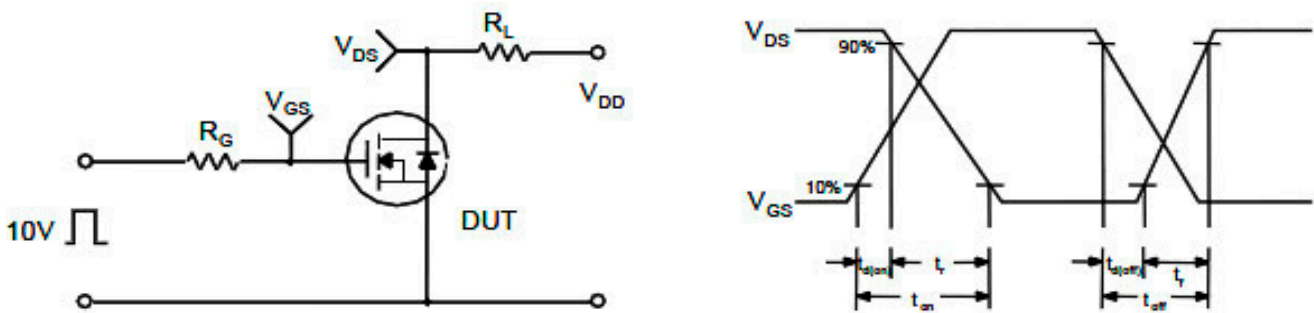
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## 测试电路和波形

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms

