

# 单 P 沟道 MOSFET

ELM52379ASA-S

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

## ■概要

ELM52379ASA-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

- $V_{ds} = -60V$
- $I_d = -4.2A$
- $R_{ds(on)} = 80m\Omega$  ( $V_{gs} = -10V$ )
- $R_{ds(on)} = 94m\Omega$  ( $V_{gs} = -4.5V$ )

## ■绝对最大额定值

如没有特别注明时,  $T_a = 25^\circ C$

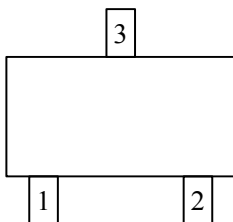
项目	记号	规格范围	单位	
漏极 - 源极电压	$V_{ds}$	-60	V	
栅极 - 源极电压	$V_{gs}$	$\pm 20$	V	
漏极电流 (定常) ( $T_j = 150^\circ C$ )	Id	$T_a = 25^\circ C$	-4.2	A
		$T_a = 70^\circ C$	-3.6	
漏极电流 (脉冲)	$I_{dm}$	-15	A	
寄生二极管最大连续电流	$I_s$	-1.5	A	
容许功耗	Pd	$T_c = 25^\circ C$	1.25	W
		$T_c = 70^\circ C$	0.80	
结合部温度	$T_j$	150	$^\circ C$	
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	$^\circ C/W$

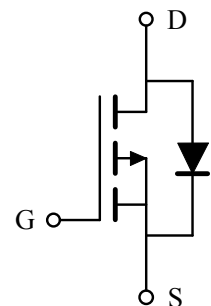
## ■引脚配置图

SOT-23(俯视图)



引脚编号	引脚名称
1	GATE
2	SOURCE
3	DRAIN

## ■电路图



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## ■电特性

如没有特别注明时, Ta=25℃

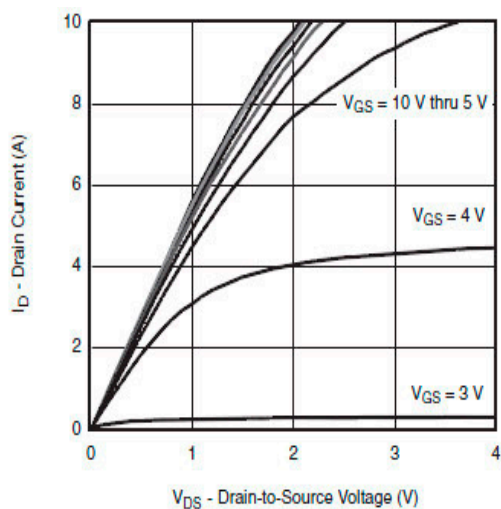
项目	记号	条件	最小值	典型值	最大值	单位
静态特性						
漏极 - 源极击穿电压	BVdss	Vgs=0V, Id=-250μA	-60			V
栅极接地时漏极电流	Idss	Vds=-48V, Vgs=0V			-1	μA
		Vds=-48V, Vgs=0V, Ta=85℃			-30	
栅极漏电流	Igss	Vds=0V, Vgs=±12V			±100	nA
栅极阈值电压	Vgs(th)	Vds=Vgs, Id=-250μA	-1.0		-2.0	V
导通时漏极电流	Id(on)	Vgs=-10V, Vds≤-5V	-6			A
漏极 - 源极导通电阻	Rds(on)	Vgs=-10V, Id=-4.2A		72	80	mΩ
		Vgs=-4.5V, Id=-3.6A		84	94	
正向跨导	Gfs	Vds=-15V, Id=-2.2A		5		S
二极管正向压降	Vsd	Is=-1.5A, Vgs=0V		-0.75	-1.30	V
动态特性						
输入电容	Ciss	Vgs=0V, Vds=-30V, f=1MHz		410		pF
输出电容	Coss			45		pF
反馈电容	Crss			20		pF
开关特性						
总栅极电荷	Qg	Vgs=-4.5V, Vds=-30V Id=-2.2A		5.0	10.0	nC
栅极 - 源极电荷	Qgs			1.5		nC
栅极 - 漏极电荷	Qgd			2.5		nC
导通延迟时间	td(on)	Vgs=-10V, Vds=-30V RL=16.7Ω, Id=-1.8A		5	10	ns
导通上升时间	tr			15	25	ns
关闭延迟时间	td(off)	Rgen=1Ω		20	35	ns
关闭下降时间	tf			10	20	ns

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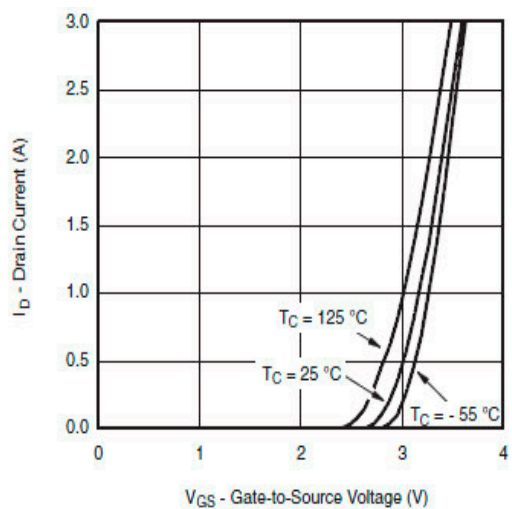
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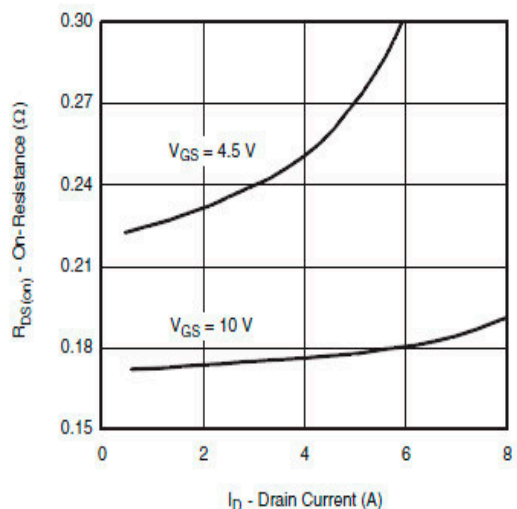
## 标准特性和热特性曲线



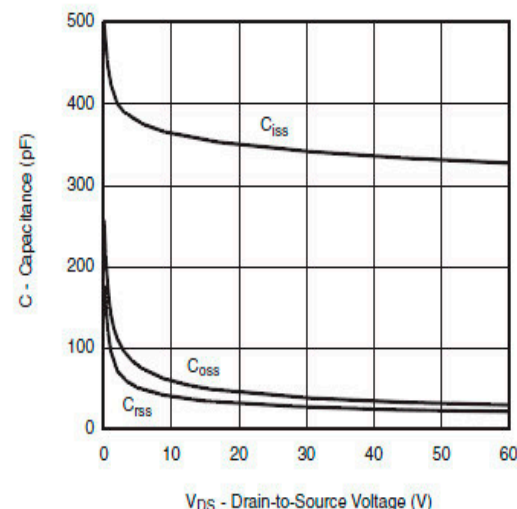
Output Characteristics



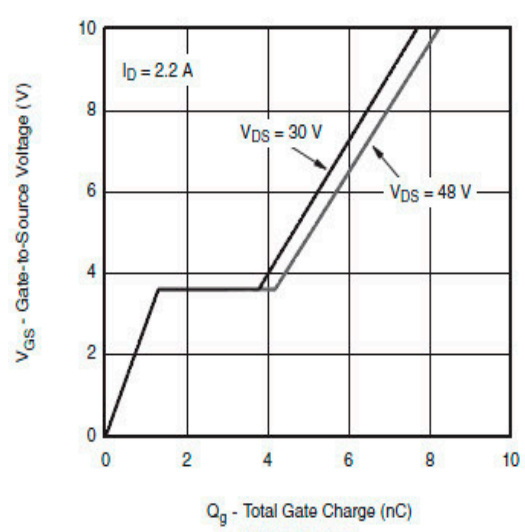
Transfer Characteristics



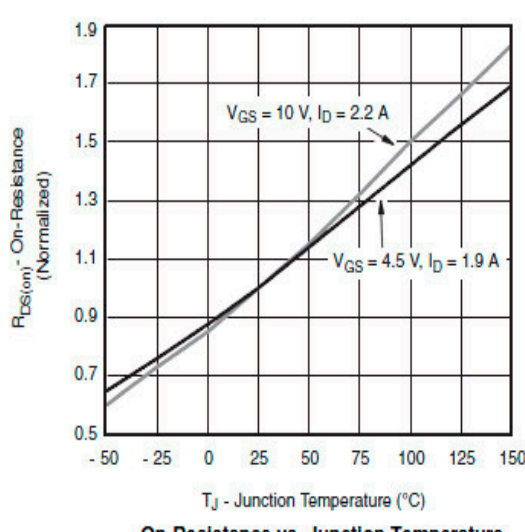
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



Gate Charge



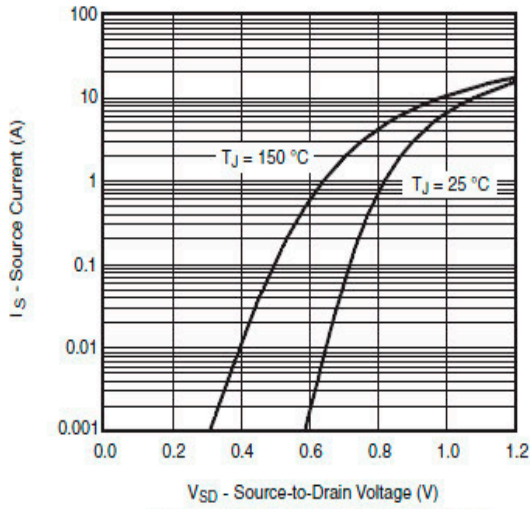
On-Resistance vs. Junction Temperature



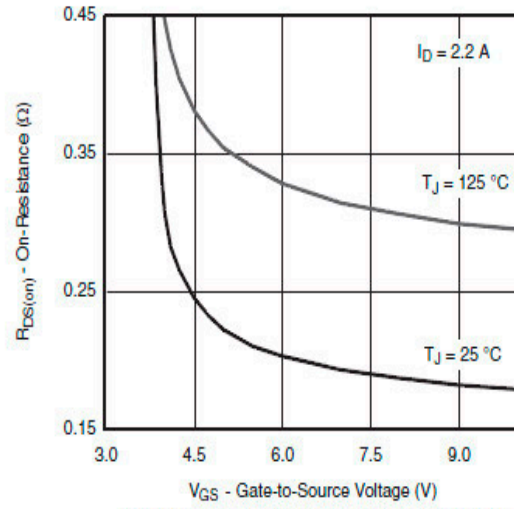
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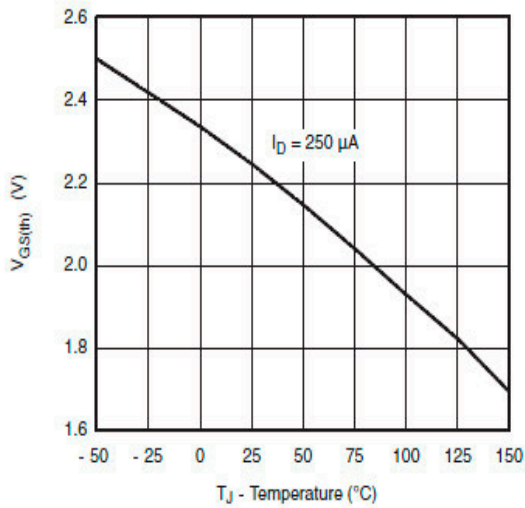
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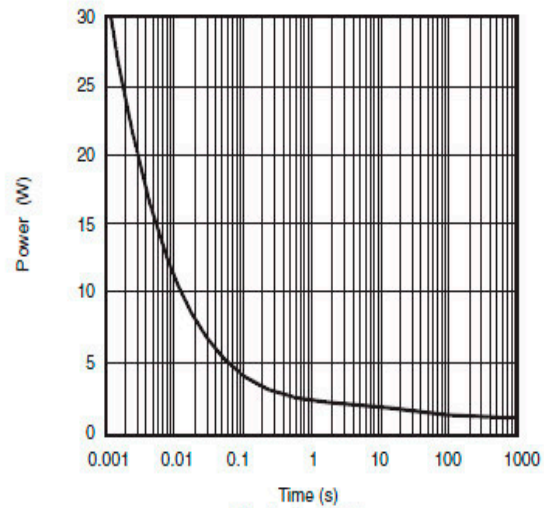
Source-Drain Diode Forward Voltage



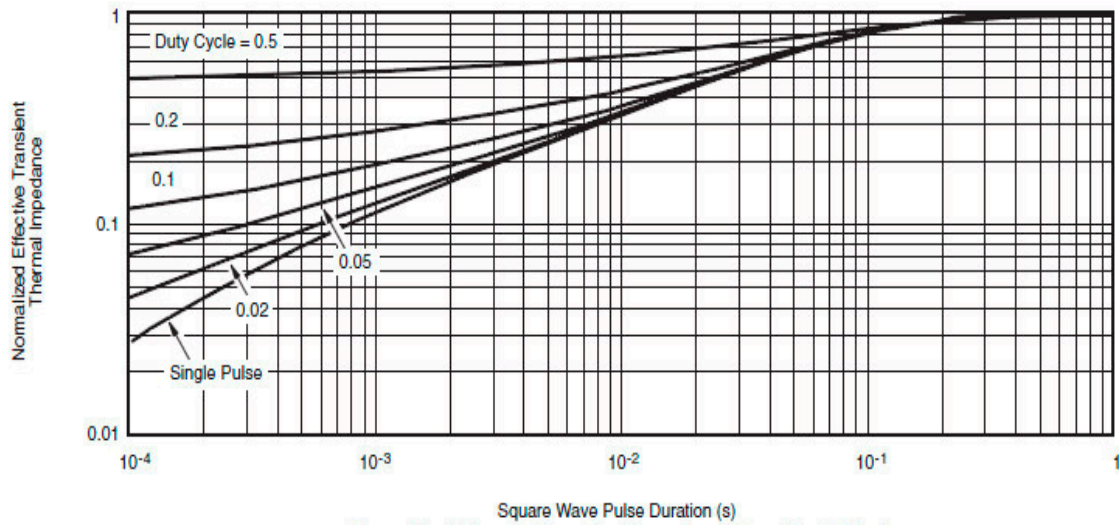
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Foot

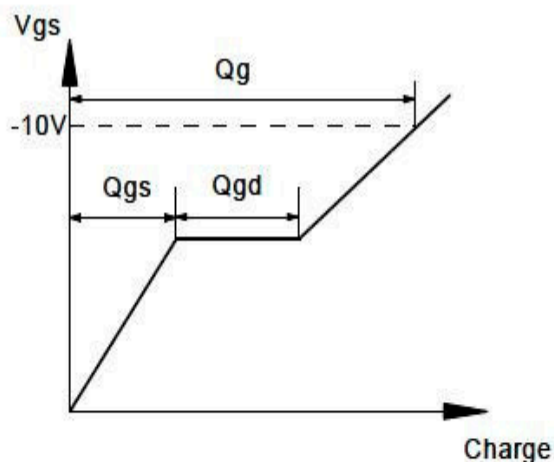
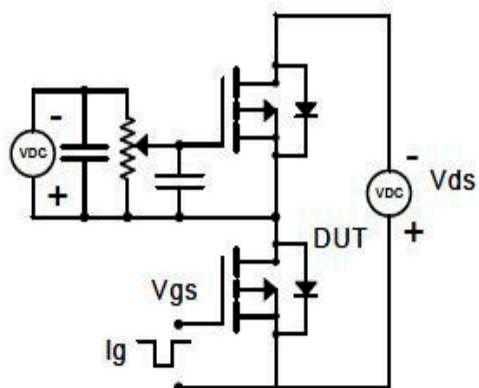
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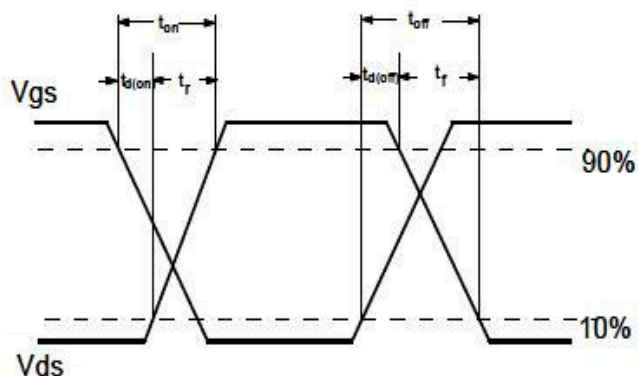
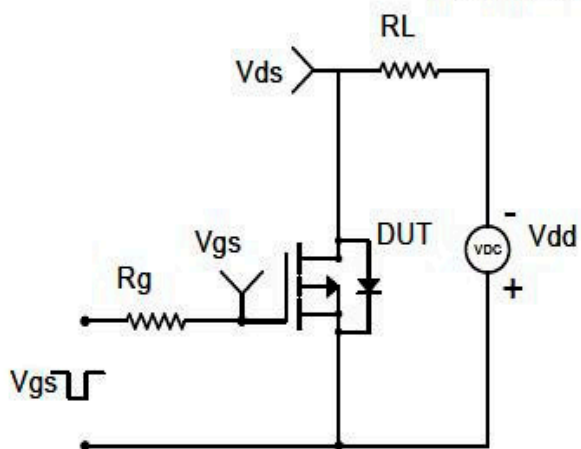
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## 测试电路和波形

### Gate Charge Test Circuit & Waveform



### Resistive Switching Test Circuit & Waveforms



### Diode Recovery Test Circuit & Waveforms

