

单 P 沟道 MOSFET

ELM53439WA-S

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

■概要

ELM53439WA-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

- $V_{ds} = -150V$
- $I_d = -1.4A$
- $R_{ds(on)} = 800m\Omega$ ($V_{gs} = -10V$)
- $R_{ds(on)} = 850m\Omega$ ($V_{gs} = -6V$)

■绝对最大额定值

如没有特别注明时, $T_a = 25^\circ C$

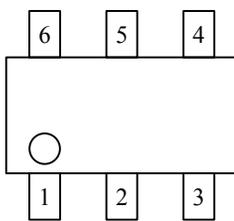
项目	记号	规格范围	单位	
漏极 - 源极电压	V_{ds}	-150	V	
栅极 - 源极电压	V_{gs}	± 20	V	
漏极电流 (定常) $T_j = 150^\circ C$	I_d	$T_a = 25^\circ C$	-1.4	A
		$T_a = 70^\circ C$	-1.0	
漏极电流 (脉冲)	I_{dm}	-5	A	
容许功耗	P_d	$T_c = 25^\circ C$	3.2	W
		$T_c = 70^\circ C$	2.1	
动作结合部温度	T_j	150	$^\circ C$	
保存温度范围	T_{stg}	-55 ~ 150	$^\circ C$	

■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	$^\circ C/W$

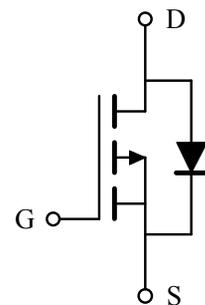
■引脚配置图

SOT-26(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℃

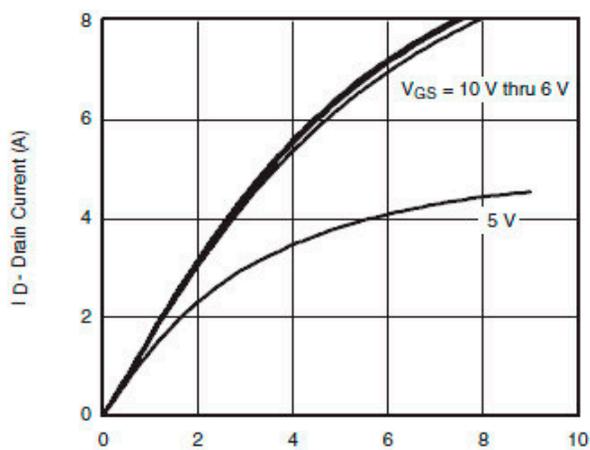
项目	记号	条件	最小值	典型值	最大值	单位
静态特性						
漏极 - 源极击穿电压	BV _{dss}	Id=-250μA, Vgs=0V	-150			V
栅极接地时漏极电流	Id _{ss}	Vds=-120V, Vgs=0V Ta=85℃			-1	μA
					-30	
栅极漏电电流	Ig _{ss}	Vds=0V, Vgs=±20V			±100	nA
栅极阈值电压	Vgs(th)	Vds=Vgs, Id=-250μA	-2.0		-3.0	V
导通时漏极电流	Id(on)	Vgs=-10V, Vds≥-10V	-3			A
漏极 - 源极导通电阻	Rds(on)	Vgs=-10V, Id=-1.4A		700	800	mΩ
		Vgs=-6V, Id=-1.0A		750	850	
正向跨导	Gfs	Vds=-10V, Id=-1.4A		4.5		S
二极管正向压降	Vsd	Is=-1.0A, Vgs=0V		-0.75	-1.20	V
寄生二极管最大连续电流	Is				-1.6	A
动态特性						
输入电容	Ciss	Vgs=0V, Vds=-50V, f=1MHz		520		pF
输出电容	Coss			30		pF
反馈电容	Crss			20		pF
开关特性						
总栅极电荷	Qg	Vgs=-6V, Vds=-75V Id≡-1.0A		10.0	15.0	nC
栅极 - 源极电荷	Qgs			2.5		nC
栅极 - 漏极电荷	Qgd			5.0		nC
导通延迟时间	td(on)	Vgs=-10V, Vds=-75V RL=75Ω, Id≡-1.0A Rgen=1.0Ω		10	20	ns
导通上升时间	tr			12	25	ns
关闭延迟时间	td(off)			30	60	ns
关闭下降时间	tf			12	25	ns

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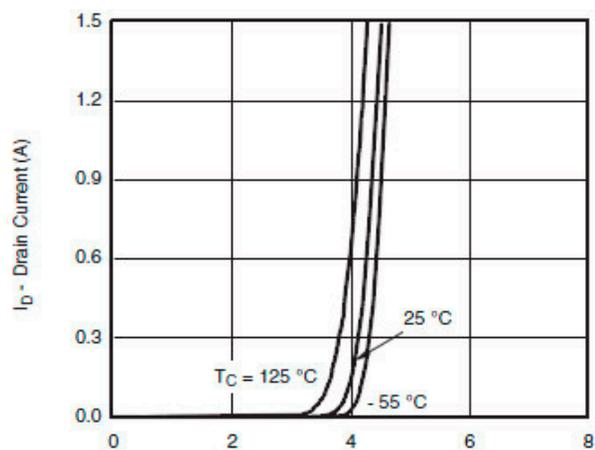
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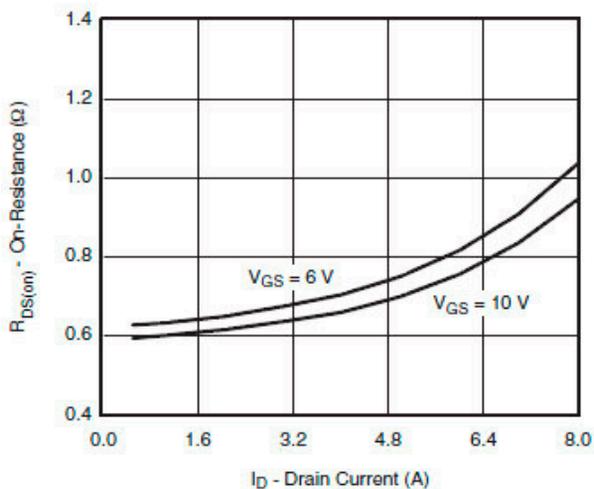
标准特性和热特性曲线



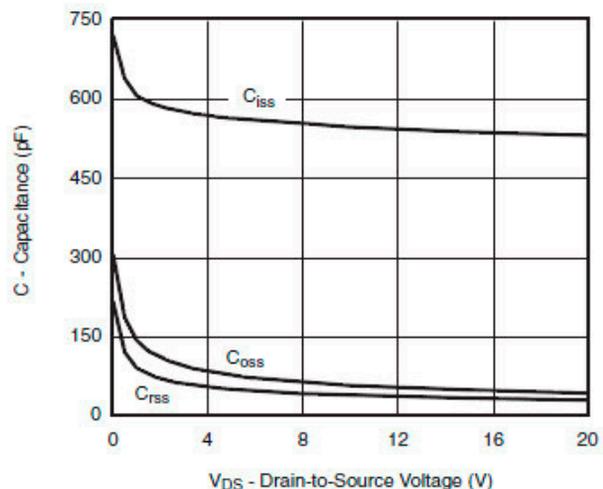
Output Characteristics



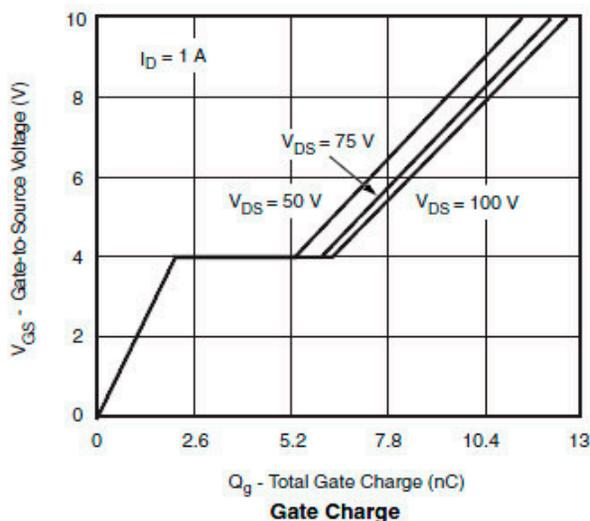
Transfer Characteristics



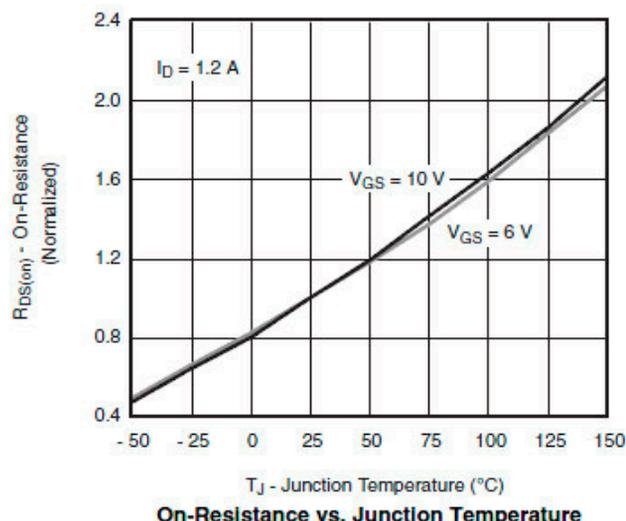
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



Gate Charge

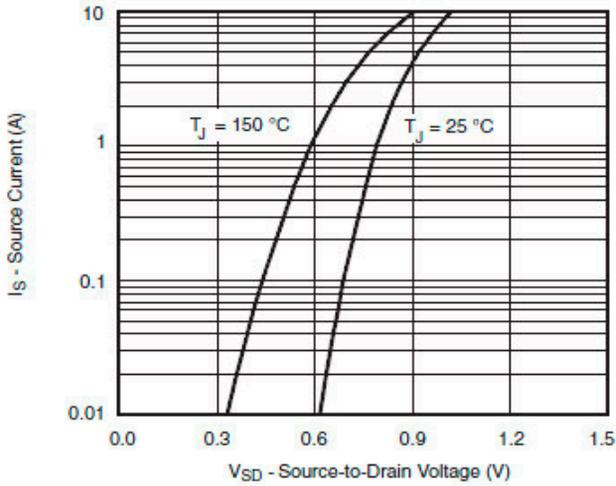


On-Resistance vs. Junction Temperature

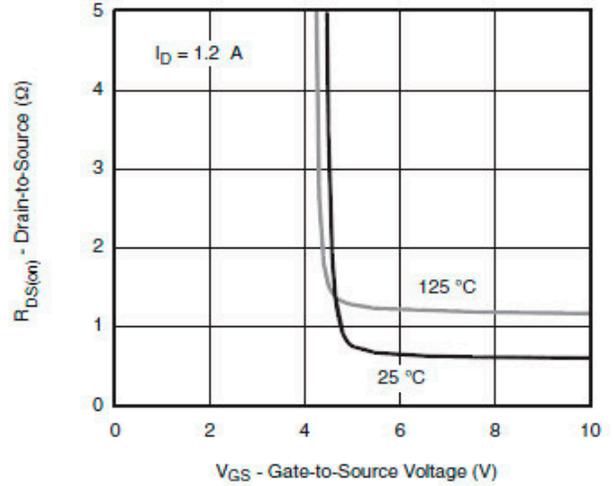
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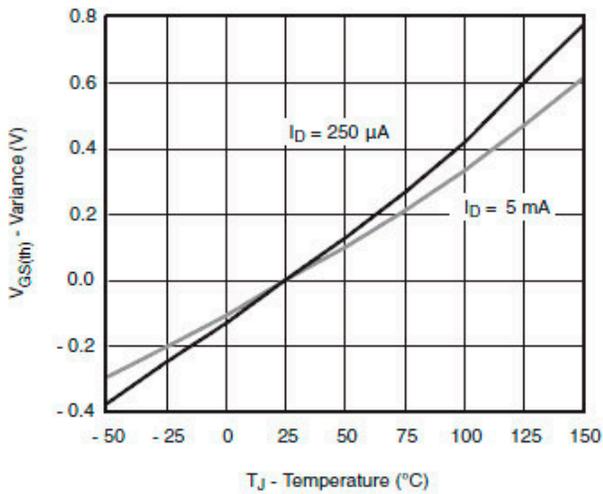
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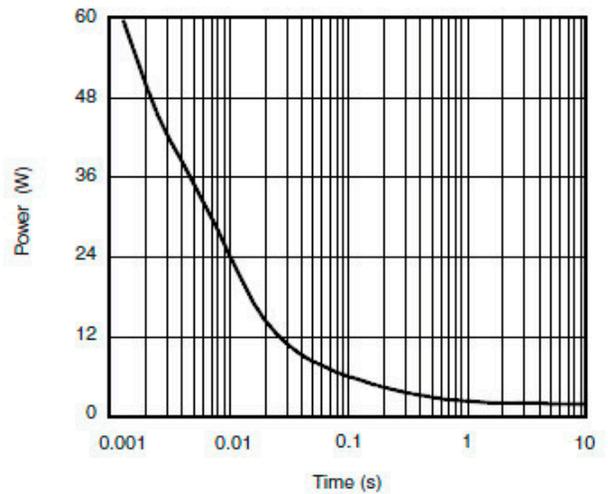
Source-Drain Diode Forward Voltage



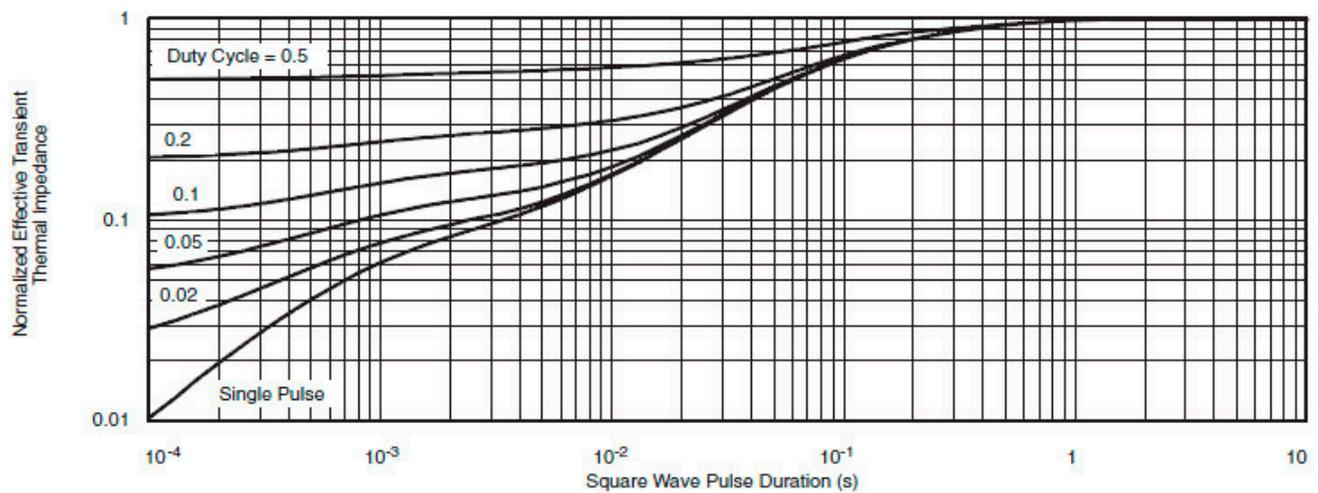
On-Resistance vs. Gate-to-Source Temperature



Threshold Voltage



Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot

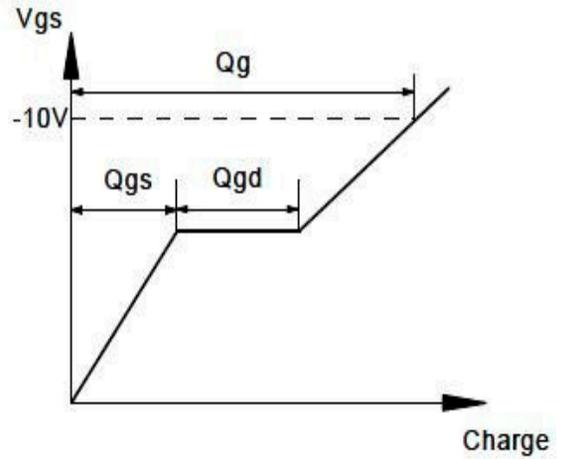
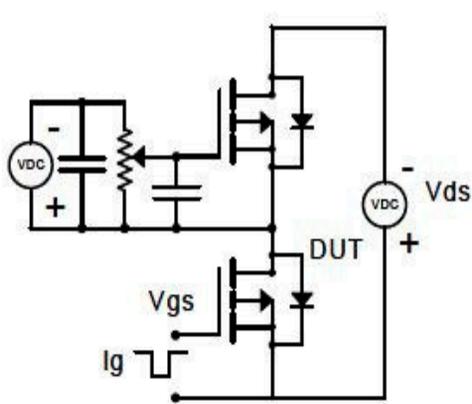
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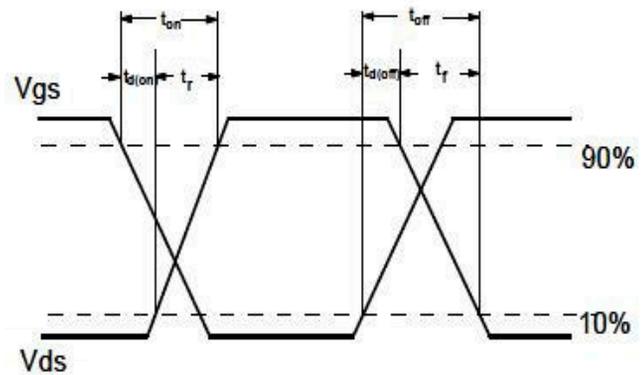
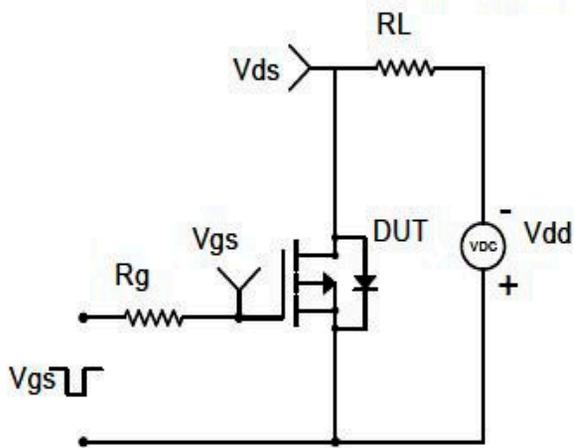
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测试电路和波形

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms

