单 P 沟道 MOSFET

ELM53435WA-S

■概要

ELM53435WA-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。另外、此芯片还内藏 ESD 保护电路。

■特点

- Vds=-200V
- Id=-1.0A
- Rds(on) = 2400mΩ (Vgs=-10V)
- Rds(on) = 2600mΩ (Vgs=-4.5V)
- 内藏 ESD 保护电路

■绝对最大额定值

如没有特别注明时, Ta=25℃

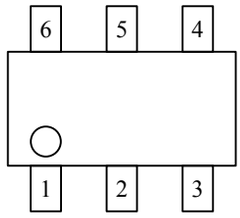
项目		记号	规格范围	单位
漏极 – 源极电压		Vds	-200	V
栅极 – 源极电压		Vgs	± 20	V
漏极电流（定常）Tj=150℃	Ta=25℃	Id	-1.0	A
	Ta=70℃		-0.6	
漏极电流（脉冲）		Idm	-1.6	A
容许功耗	Tc=25℃	Pd	3.2	W
	Tc=70℃		2.1	
动作结合部温度		Tj	150	℃
保存温度范围		Tstg	-55 ~ 150	℃

■热特性

项目	记号	典型值	最大值	单位
最大结合部 – 环境热阻	Rθja		120	℃/W

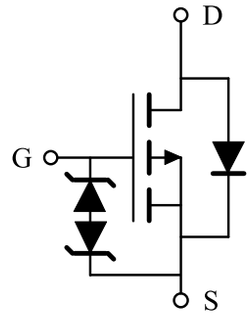
■引脚配置图

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

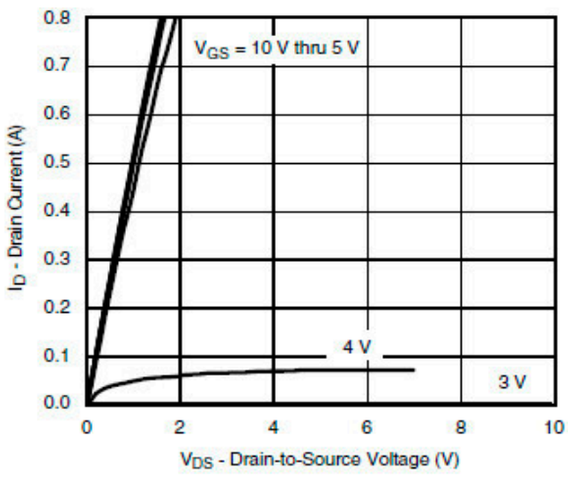


■电特性

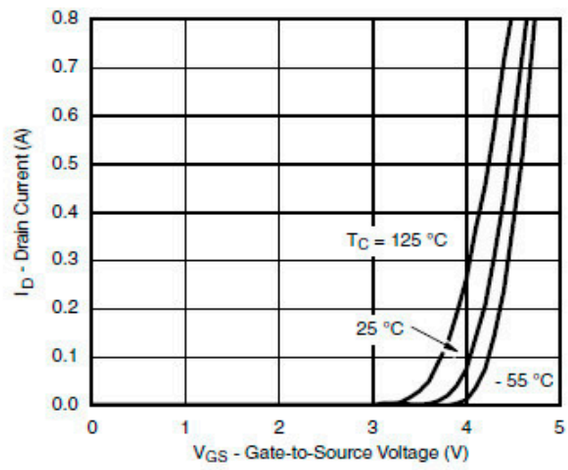
如没有特别注明时, Ta=25℃

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		–200			V
栅极接地时漏极电流	Idss	Vds=–160V, Vgs=0V				–1	μA
			Ta=85℃			–30	
栅极漏电电流	Igss	Vds=0V, Vgs= ± 20V				± 10	μA
栅极阈值电压	Vgs(th)	Vds=Vgs, Id=–250μA		–1.0		–2.5	V
导通时漏极电流	Id(on)	Vgs=–10V, Vds≧–10V		–0.6			A
漏极 – 源极导通电阻	Rds(on)	Vgs=–10V, Id=–1.0A			2000	2400	mΩ
		Vgs=–4.5V, Id=–0.6A			2100	2600	
正向跨导	Gfs	Vds=–10V, Id=–0.5A			1.5		S
二极管正向压降	Vsd	Is=–0.3A, 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=–75V, f=1MHz			155		pF
输出电容	Coss				8		pF
反馈电容	Crss				6		pF
开关特性							
总栅极电荷	Qg	Vgs=–10V, Vds=–75V Id≡–0.5A			4.20	8.00	nC
栅极 – 源极电荷	Qgs				0.98		nC
栅极 – 漏极电荷	Qgd				1.32		nC
导通延迟时间	td(on)	Vgs=–10V, Vds=–75V RL=75Ω, Id≡–1.0A Rgen=1.0Ω			5	10	ns
导通上升时间	tr				10	20	ns
关闭延迟时间	td(off)				20	40	ns
关闭下降时间	tf				10	20	ns

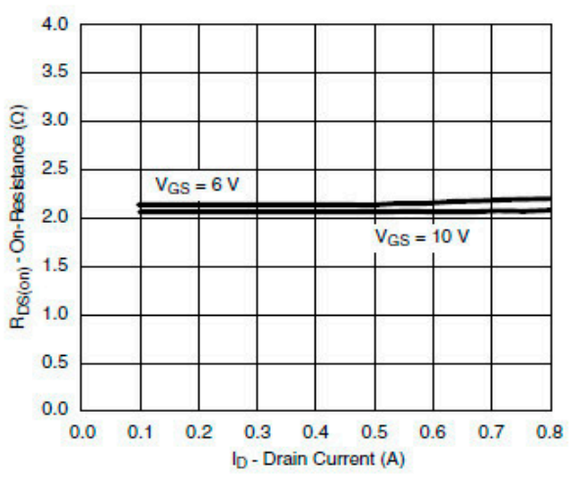
■标准特性和热特性曲线



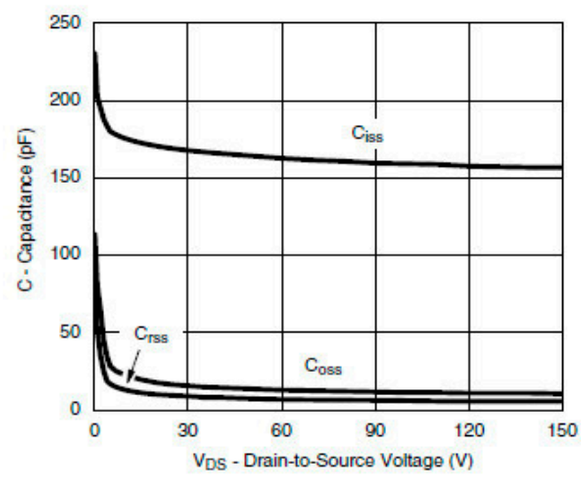
Output Characteristics



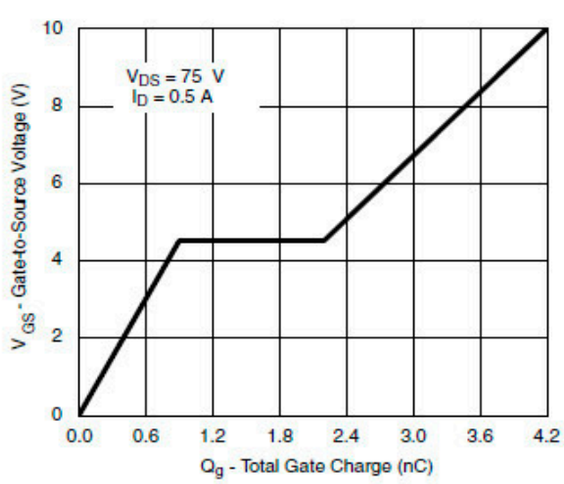
Transfer Characteristics



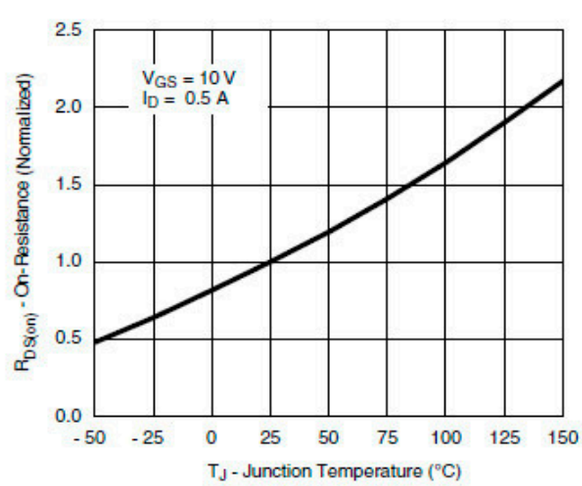
On-Resistance vs. Drain Current and Gate Voltage



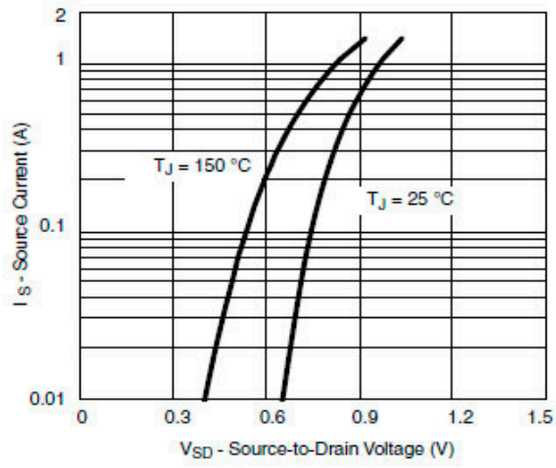
Capacitance



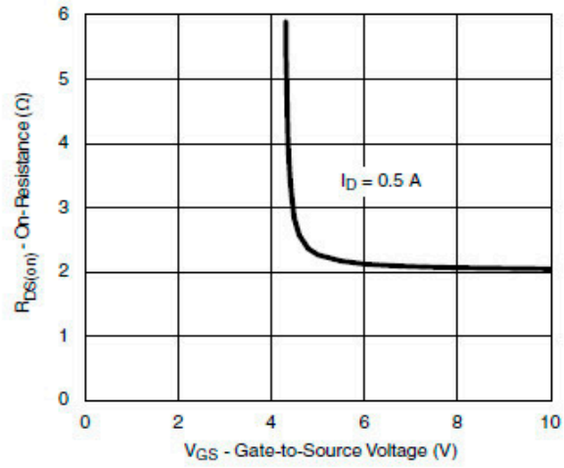
Gate Charge



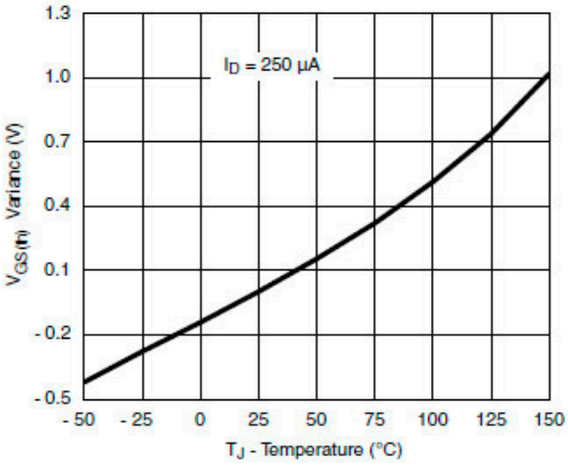
On-Resistance vs. Junction Temperature



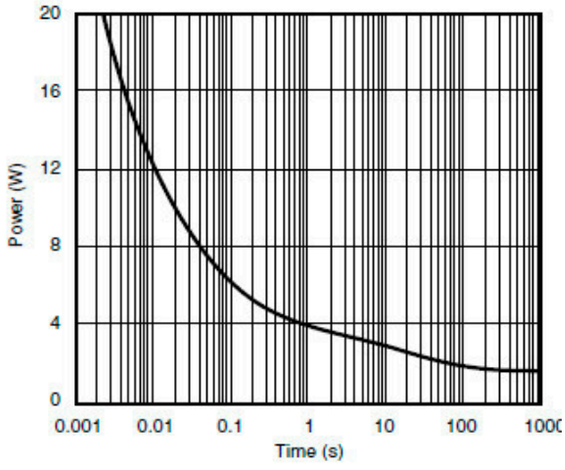
Source-Drain Diode Forward Voltage



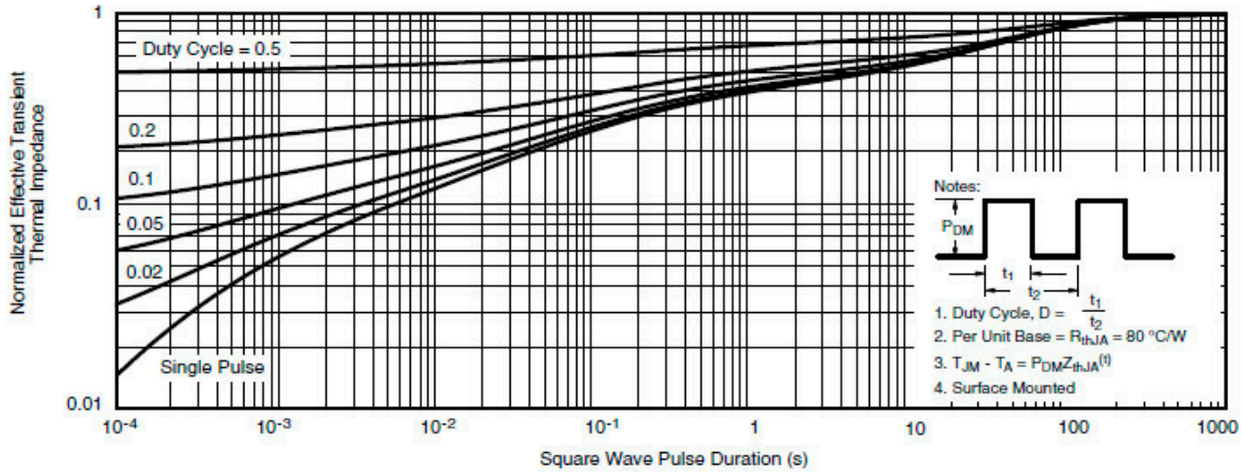
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



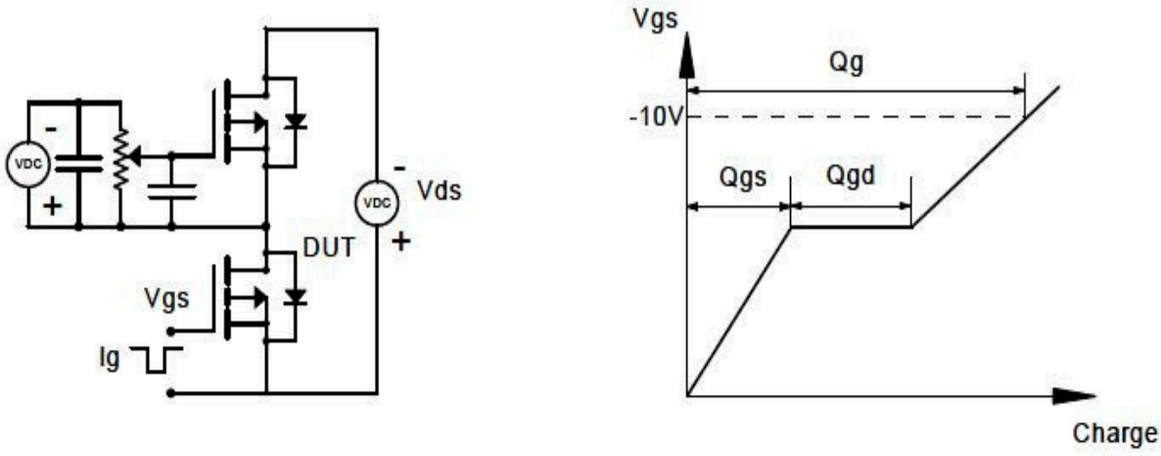
Single Pulse Power, Junction-to-Ambient



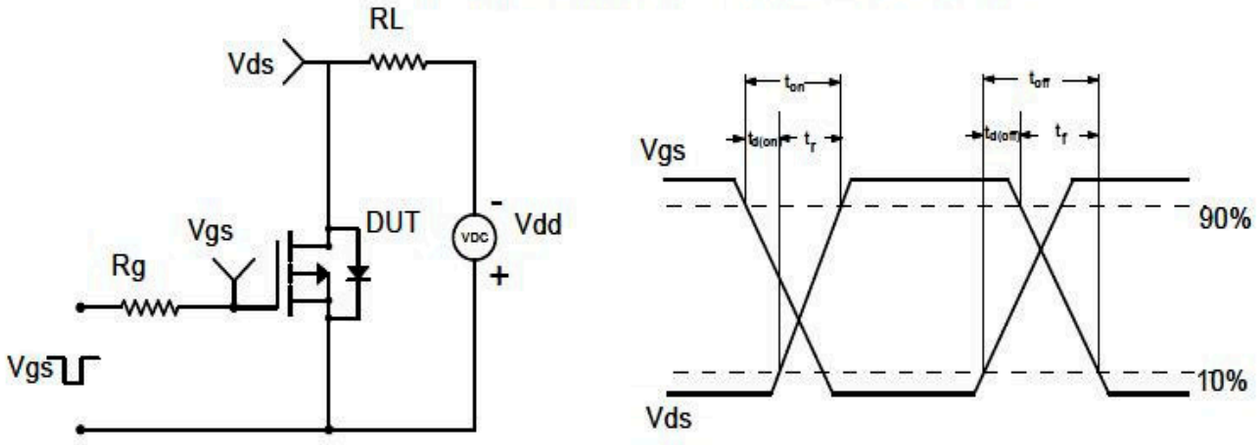
Normalized Thermal Transient Impedance, Junction-to-Ambient

■测试电路和波形

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms