双 N 沟道 MOSFET

ELM54998WA-N

■概要

ELM54998WA-N 是 N 沟道低输入电容、低工作电压、低导通电阻的大电流 MOSFET，内藏有两个 MOSFET。

■特点

- Vds=100V
- Id=5.4A
- Rds(on) = 120mΩ (Vgs=10V)
- Rds(on) = 130mΩ (Vgs=4.5V)

■绝对最大额定值

如没有特别注明时, Ta=25℃

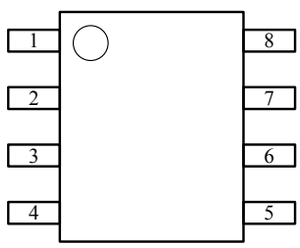
项目		记号	规格范围	单位
漏极 – 源极电压		Vds	100	V
栅极 – 源极电压		Vgs	± 20	V
漏极电流（定常）Tj=150℃	Ta=25℃	Id	5.4	A
	Ta=70℃		4.2	
漏极电流（脉冲）		Idm	30	A
容许功耗	Tc=25℃	Pd	2.8	W
	Tc=70℃		1.8	
动作结合部温度		Tj	150	℃
保存温度范围		Tstg	–55 ~ 150	℃

■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		62.5	℃/W

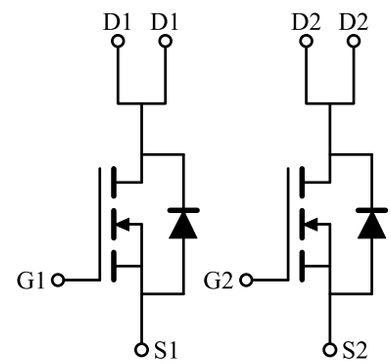
■引脚配置图

SOP-8(俯视图)



引脚编号	引脚名称
1	SOURCE1
2	GATE1
3	SOURCE2
4	GATE2
5	DRAIN2
6	DRAIN2
7	DRAIN1
8	DRAIN1

■电路图



如需确认语言的准确性，请参考 ELM 的英文版或日文版。

■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=100V, Vgs=0V			1	μA
		Vds=80V, Vgs=0V Ta=85℃			5	
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		2.5	V
导通时漏极电流	Id(on)	Vgs=4.5V, Vds≧5V	30			A
漏极 – 源极导通电阻	Rds(on)	Vgs=10V, Id=5.6A		110	120	mΩ
		Vgs=4.5V, Id=4.2A		114	130	
正向跨导	Gfs	Vds=15V, Id=5.3A		24		S
二极管正向压降	Vsd	Is=2.0A, Vgs=0V		0.8	1.2	V
寄生二极管最大连续电流	Is				1.5	A
动态特性						
输入电容	Ciss	Vgs=0V, Vds=50V, f=1MHz		550		pF
输出电容	Coss			80		pF
反馈电容	Crss			50		pF
开关特性						
总栅极电荷	Qg	Vgs=5V, Vds=50V, Id=5.0A		10	15	nC
栅极 – 源极电荷	Qgs			4		nC
栅极 – 漏极电荷	Qgd			5		nC
导通延迟时间	td(on)	Vgs=10V, Vds=50V, Id=5.0A RL=12.5Ω, Rgen=1.0Ω		10	20	ns
导通上升时间	tr			10	20	ns
关闭延迟时间	td(off)			15	25	ns
关闭下降时间	tf			10	25	ns

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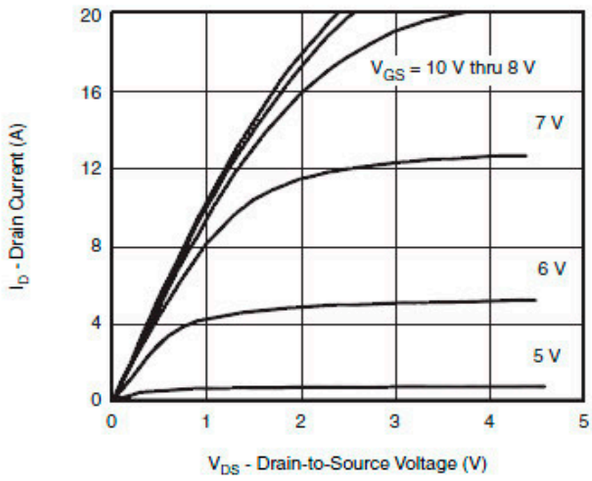
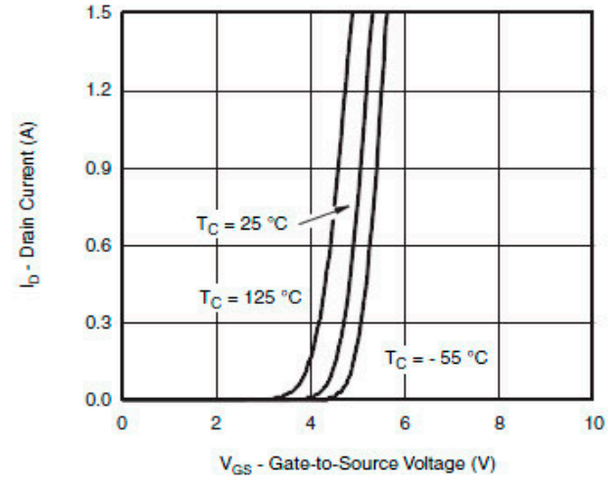
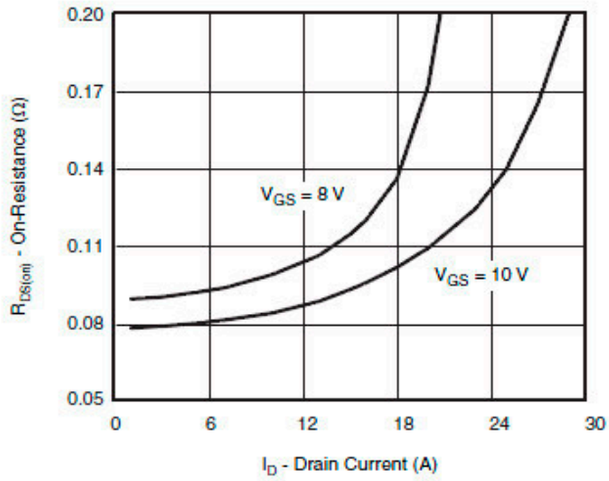
■标准特性和热特性曲线



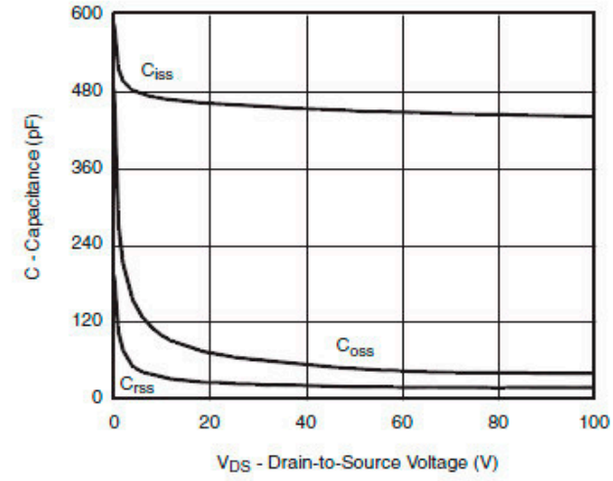
Output Characteristics



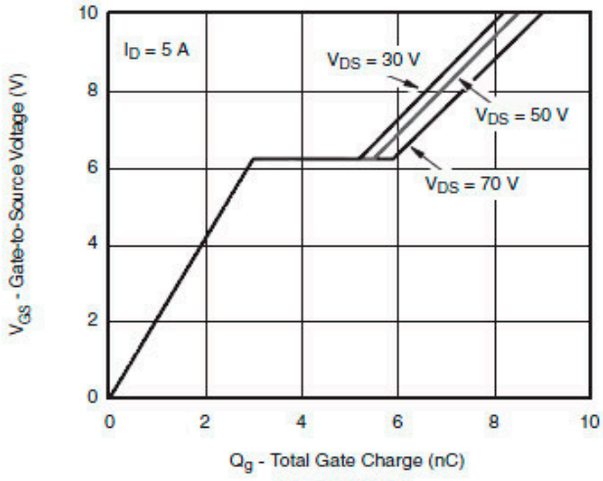
Transfer Characteristics



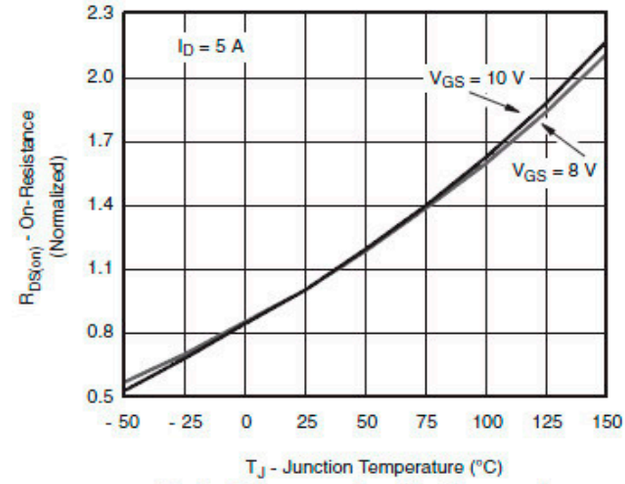
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



Gate Charge



On-Resistance vs. Junction Temperature

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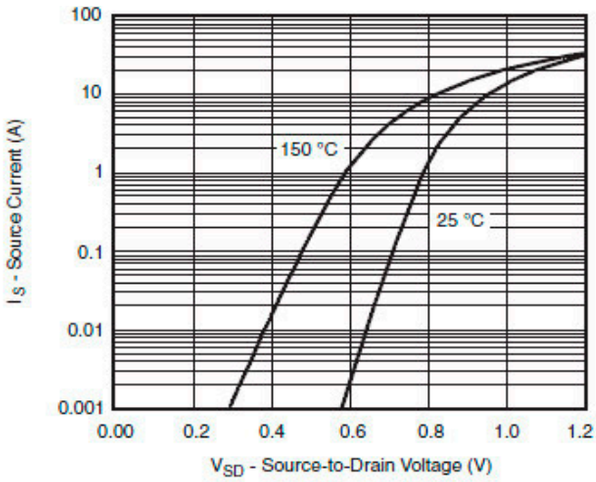
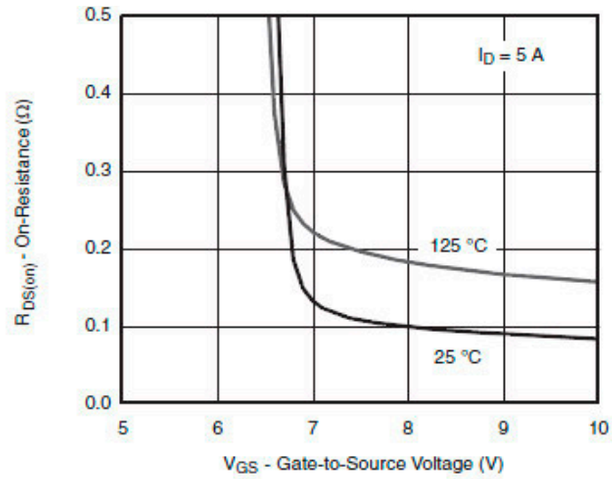
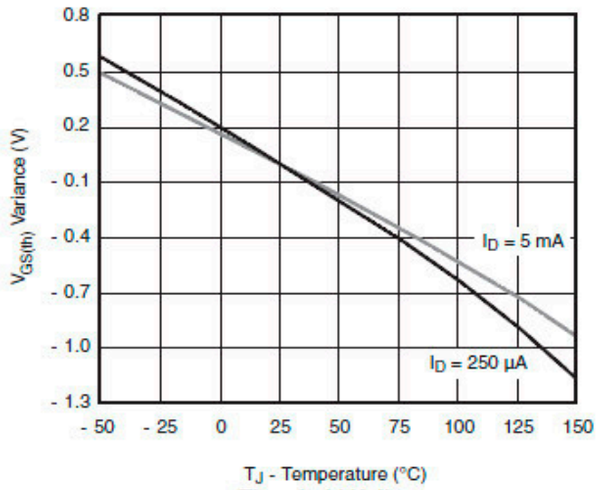


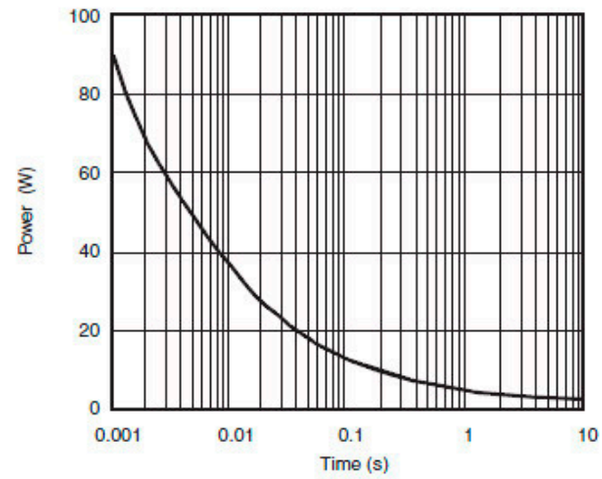
Source-Drain Diode Forward Voltage



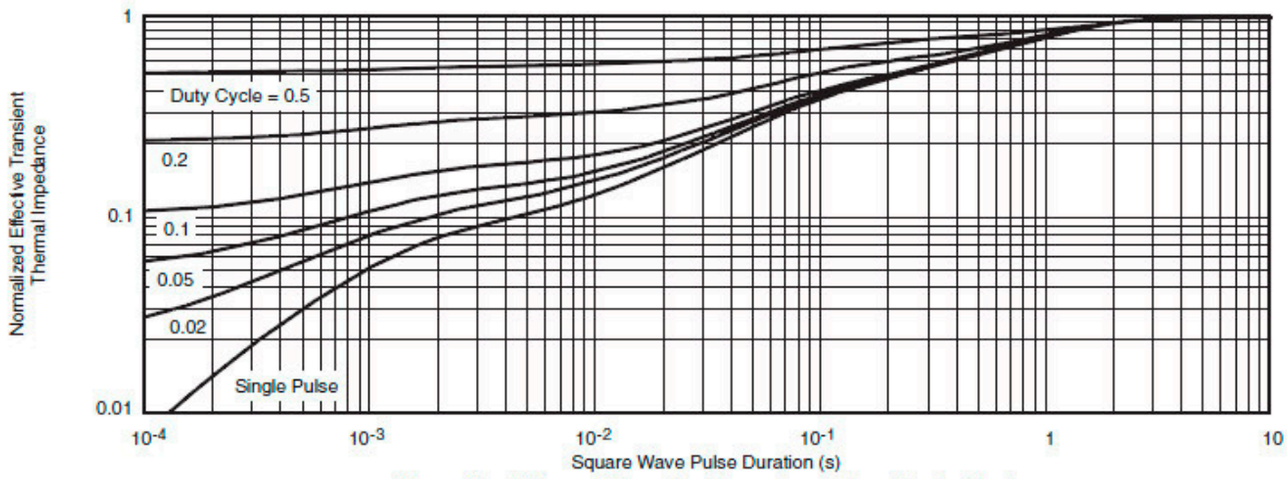
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot

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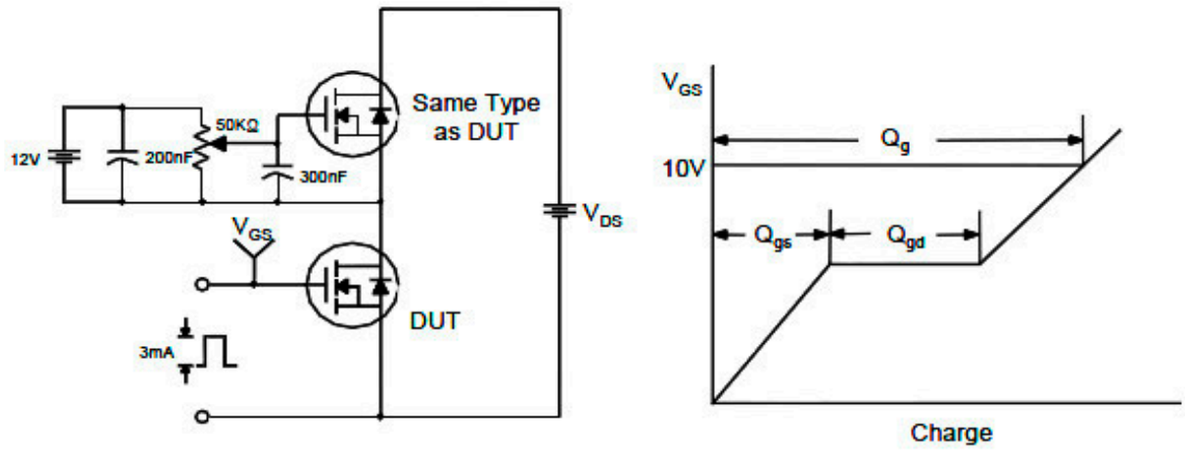
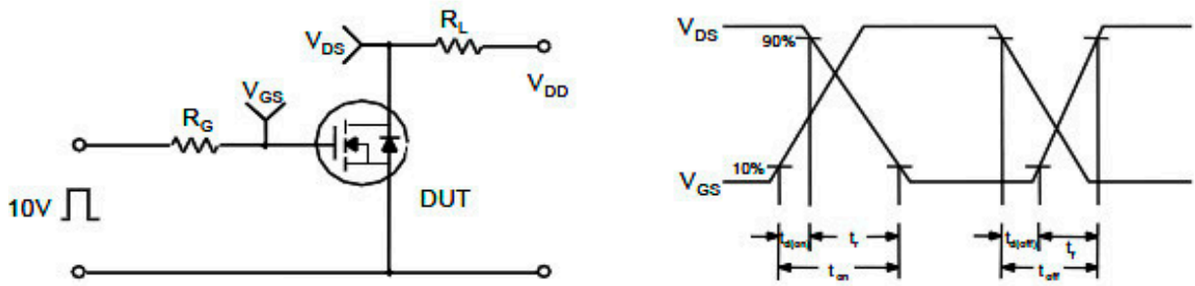
■测试电路和波形

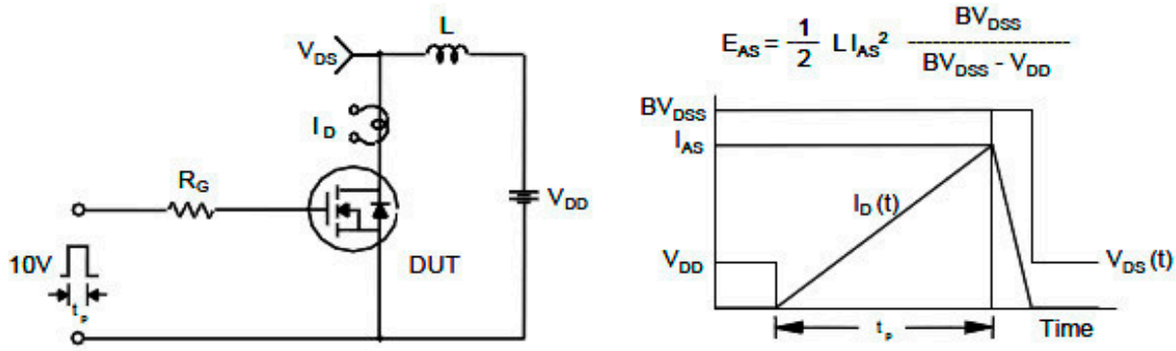
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms



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