单 P 沟道 MOSFET

ELM57317WSA-N

■概要

ELM57317WSA-N 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

- Vds=-150V
- Id=-3.0A
- Rds(on) = 750mΩ (Vgs=-10V)
- Rds(on) = 800mΩ (Vgs=-6V)

■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	-150	V
栅极 – 源极电压		Vgs	± 20	V
漏极电流（定常）Tj=150℃	Ta=25℃	Id	-3.0	A
	Ta=70℃		-2.4	
漏极电流（脉冲）		Idm	-2	A
容许功耗	Tc=25℃	Pd	28	W
	Tc=70℃		18	
动作结合部温度		Tj	150	℃
保存温度范围		Tstg	– 55 ~ 150	℃

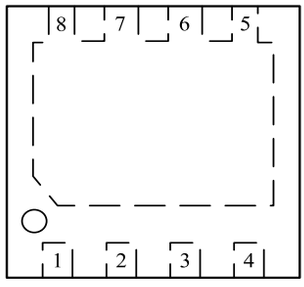
■热特性

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

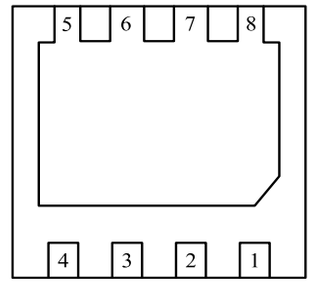
■引脚配置图

DFN8-3 × 3

(俯视图)

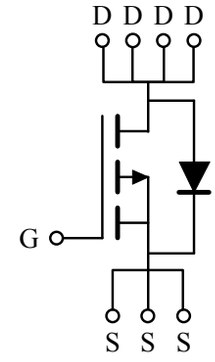


(背面视图)



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

■电路图

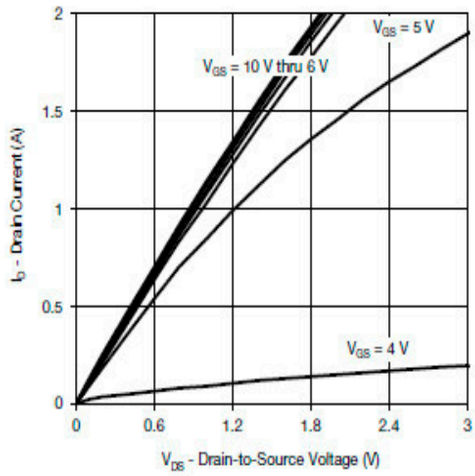


■电特性

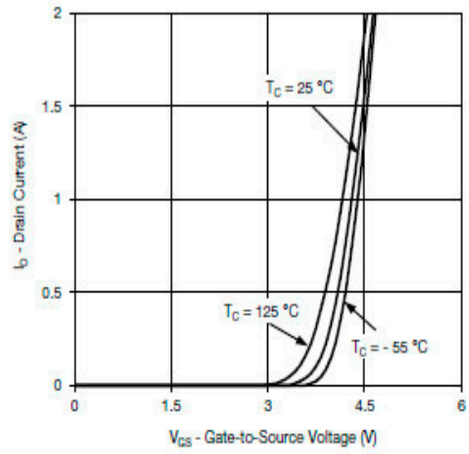
如没有特别注明时, Ta=25℃

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		–150			V
栅极接地时漏极电流	Idss	Vds=–120V Vgs=0V				–1	μA
			Ta=85℃			–30	
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		–2.0		–4.0	V
导通时漏极电流	Id(on)	Vgs=–10V, Vds≧–15V		–1.6			A
漏极 – 源极导通电阻	Rds(on)	Vgs=–10V, Id=–1.4A			675	750	mΩ
		Vgs=–6V, Id=–1.0A			720	800	
正向跨导	Gfs	Vds=–15V, Id=–0.5A			3		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					–2.7	A
动态特性							
输入电容	Ciss	Vgs=0V, Vds=–75V, f=1MHz			280		pF
输出电容	Coss				20		pF
反馈电容	Crss				15		pF
开关特性							
总栅极电荷	Qg	Vgs=–10V, Vds=–75V Id≡–1.1A			8.0	15.0	nC
栅极 – 源极电荷	Qgs				2.0		nC
栅极 – 漏极电荷	Qgd				2.5		nC
导通延迟时间	td(on)	Vgs=–10V, Vds=–75V RL=85Ω, Id≡–1.0A Rgen=1.0Ω			10	20	ns
导通上升时间	tr				15	30	ns
关闭延迟时间	td(off)				15	30	ns
关闭下降时间	tf				10	25	ns

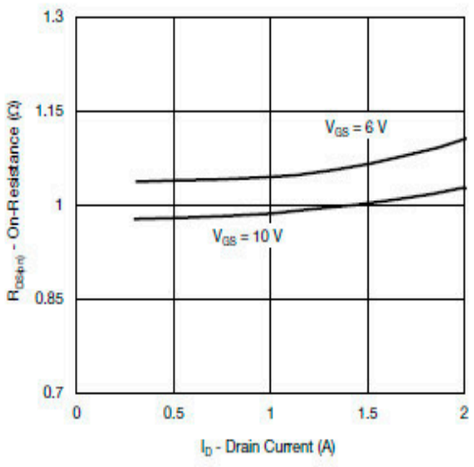
■标准特性和热特性曲线



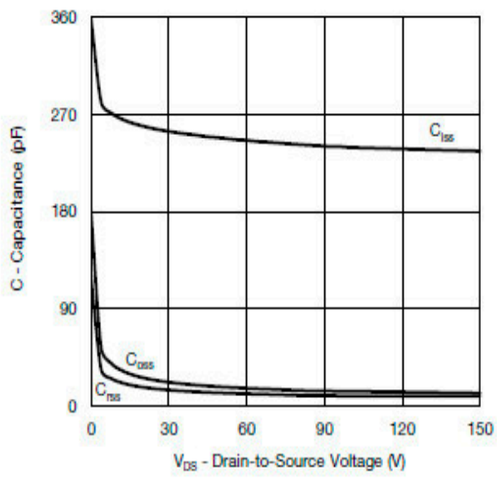
Output Characteristics



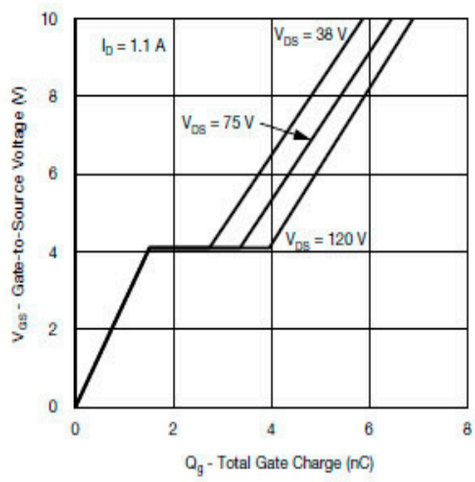
Transfer Characteristics



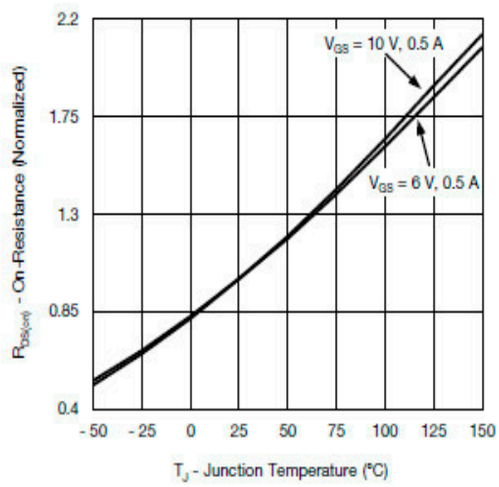
On-Resistance vs. Drain Current and Gate Voltage



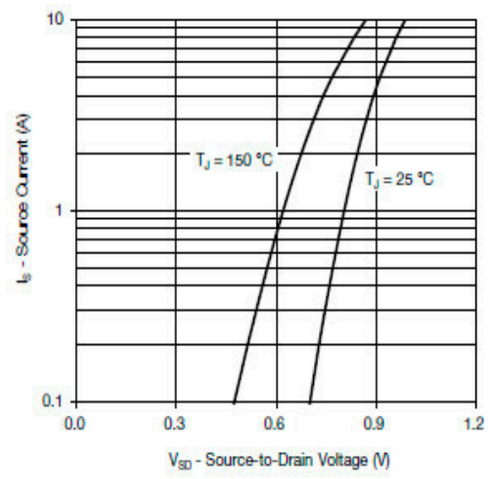
Capacitance



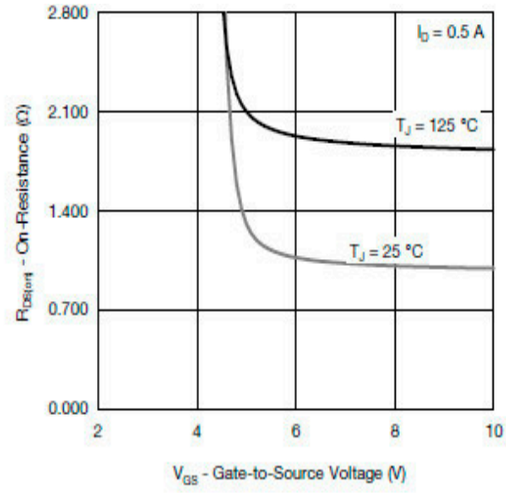
Gate Charge



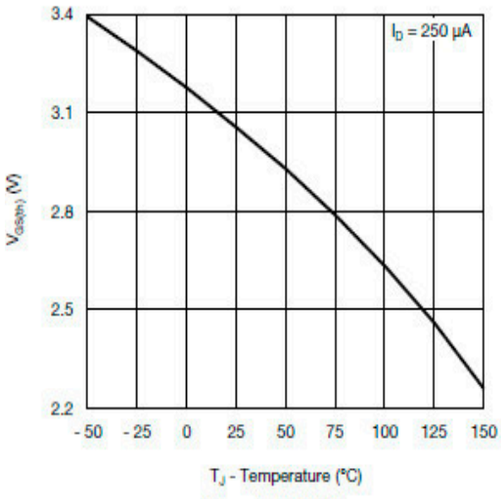
On-Resistance vs. Junction Temperature



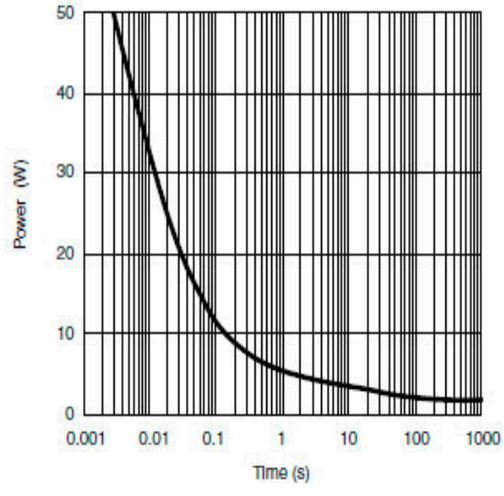
Source-Drain Diode Forward Voltage



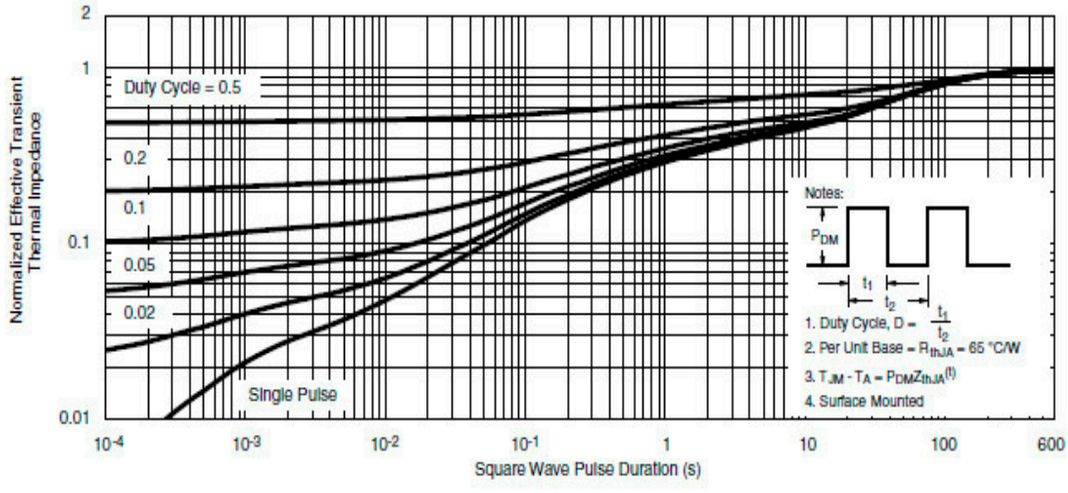
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



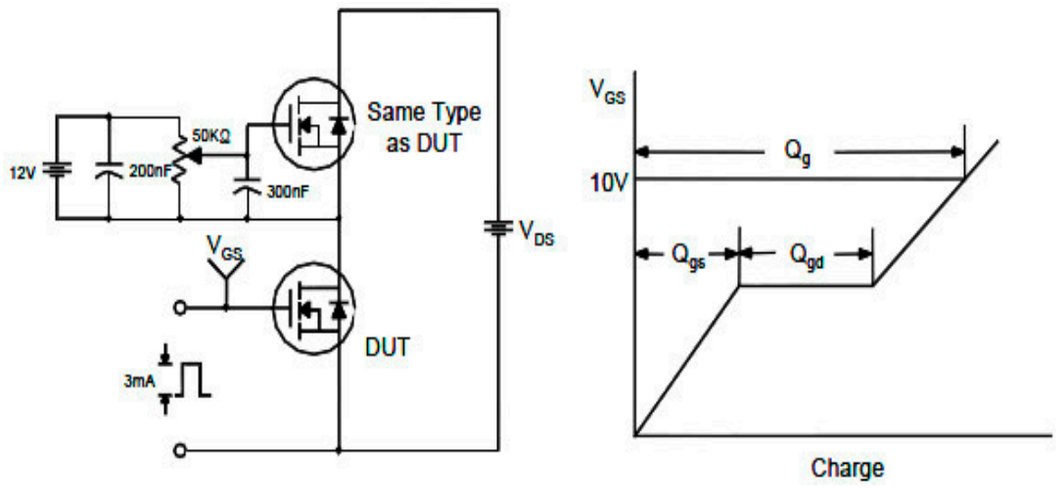
Single Pulse Power, Junction-to-Ambient



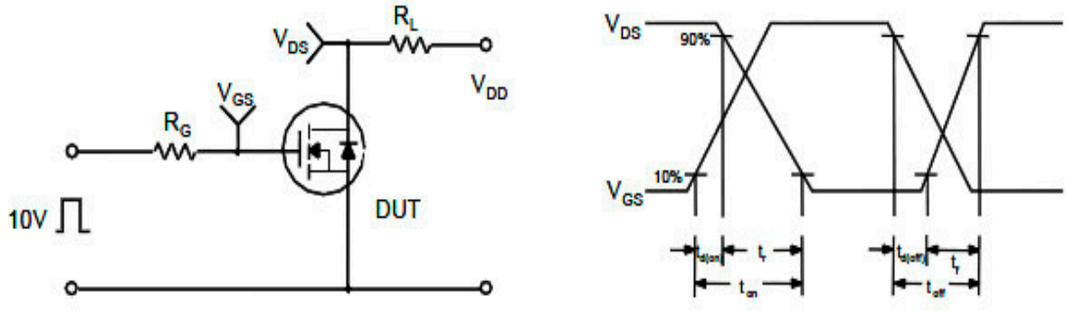
Normalized Thermal Transient Impedance, Junction-to-Ambient

■测试电路和波形

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms