

双 N 沟道共 MOSFET (共漏极)

ELM582050A-S

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

■概要

ELM582050A-S 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

- $V_{ds}=20V$
- $I_d=5A$
- $R_{ds(on)} = 29m\Omega$ ($V_{gs}=4.5V$)
- $R_{ds(on)} = 37m\Omega$ ($V_{gs}=2.5V$)
- $R_{ds(on)} = 50m\Omega$ ($V_{gs}=1.8V$)

■绝对最大额定值

如没有特别注明时, $T_a=25^{\circ}C$

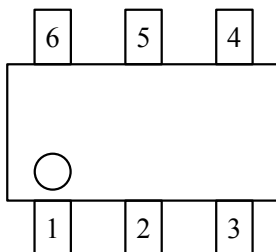
项目	记号	规格范围	单位
漏极 - 源极电压	V_{ds}	20	V
栅极 - 源极电压	V_{gs}	± 12	V
漏极电流 ($T_j=150^{\circ}C$)	I_d	$T_a=25^{\circ}C$ 5.0	A
		$T_a=70^{\circ}C$ 3.2	
漏极电流 (脉冲)	I_{dm}	20	A
容许功耗	P_d	$T_c=25^{\circ}C$ 2.0	W
		$T_c=70^{\circ}C$ 1.3	
动作结合部温度	T_j	150	$^{\circ}C$
保存温度范围	T_{stg}	$-55 \sim 150$	$^{\circ}C$

■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	$^{\circ}C/W$

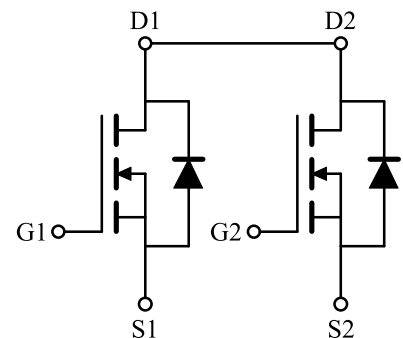
■引脚配置图

SOT-26(俯视图)



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

■电路图



双 N 沟道 MOSFET (共漏极)

ELM582050A-S

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

■电特性

如没有特别注明时, Ta=25℃

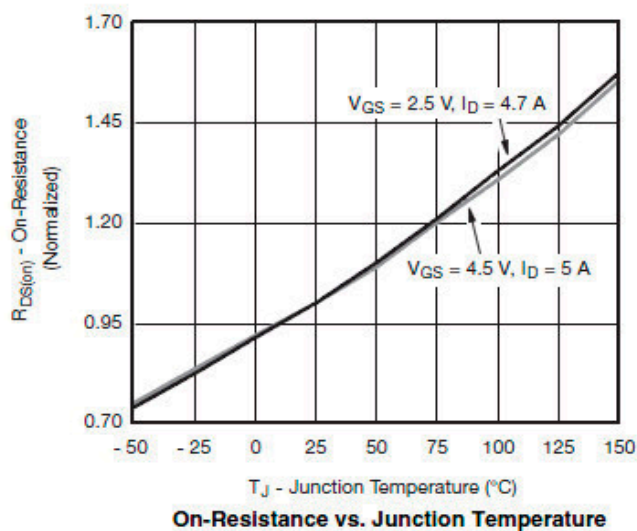
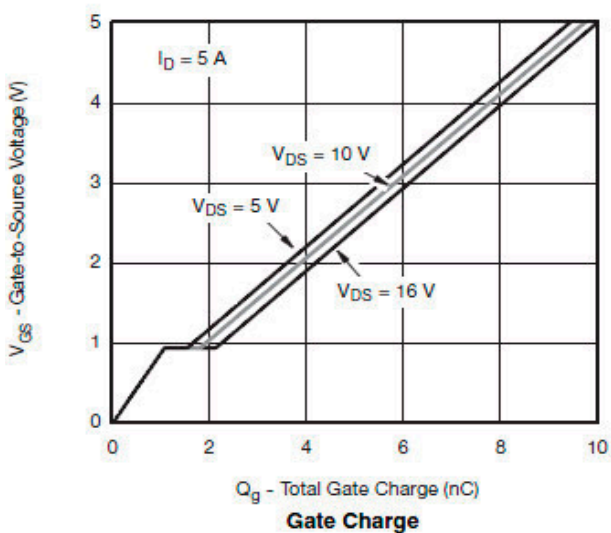
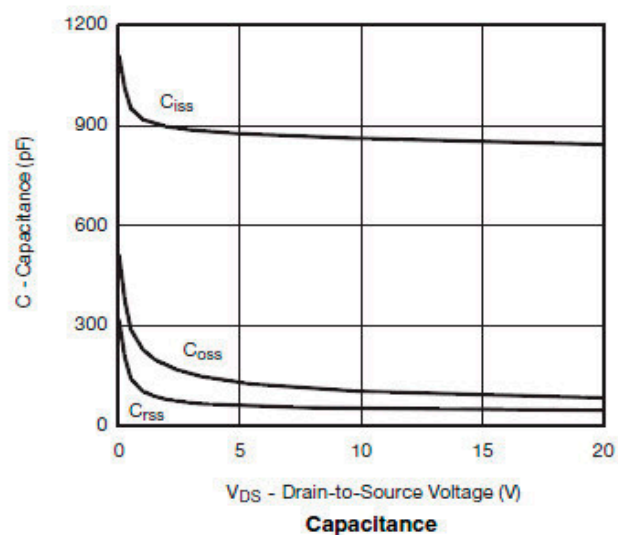
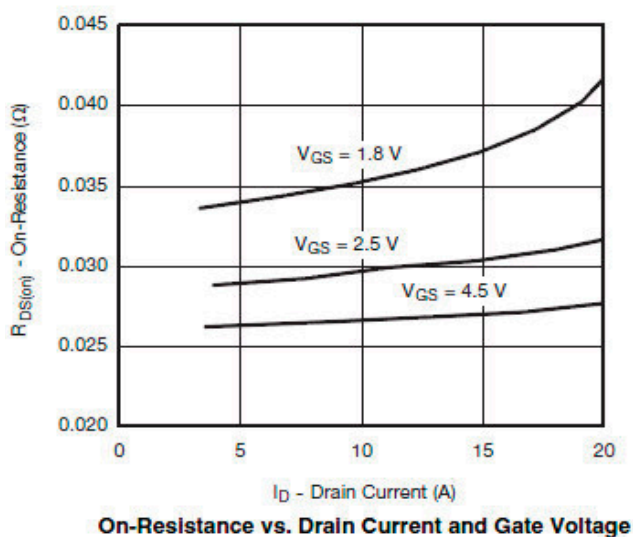
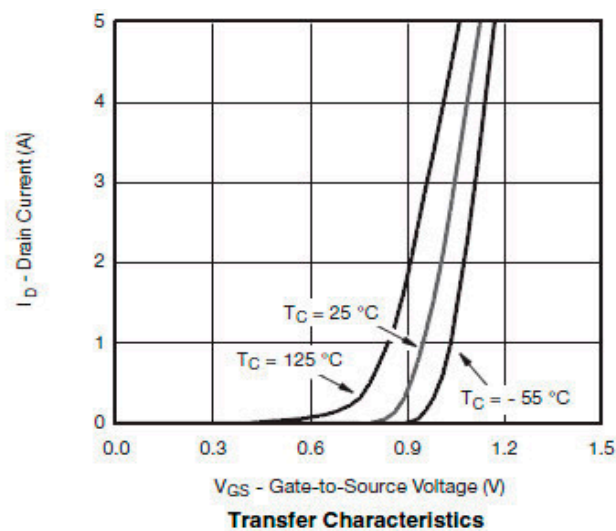
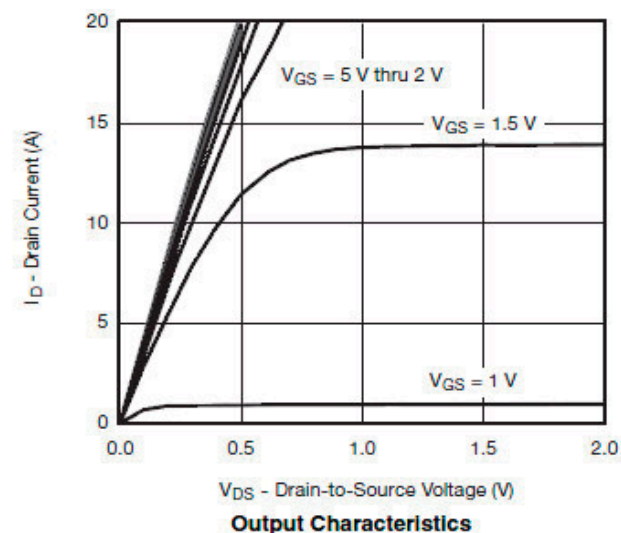
项目	记号	条件	最小值	典型值	最大值	单位	
静态特性							
漏极 – 源极击穿电压	BV _{dss}	I _d =250μA, V _{gs} =0V		20		V	
栅极接地时漏极电流	I _{dss}	V _{ds} =16V, V _{gs} =0V			1	μA	
			T _a =85℃		10		
栅极漏电流	I _{gss}	V _{ds} =0V, V _{gs} = ± 12V			± 100	nA	
栅极阈值电压	V _{gs} (th)	V _{ds} =V _{gs} , I _d =250 μA		0.4	0.8	V	
导通时漏极电流	I _d (on)	V _{gs} =4.5V, V _{ds} ≥5V		6		A	
		V _{gs} =2.5V, V _{ds} ≥5V		4			
漏极 – 源极导通电阻	R _{ds} (on)	V _{gs} =4.5V, I _d =5.0A			25	29	mΩ
		V _{gs} =2.5V, I _d =3.2A			30	37	
		V _{gs} =1.8V, I _d =2.4A			45	50	
正向跨导	G _{fs}	V _{ds} =5V, I _d =3.6A			10	S	
二极管正向压降	V _{sd}	I _s =1.6A, V _{gs} =0V			0.85	1.20	V
寄生二极管最大连续电流	I _s				1.6	A	
动态特性							
输入电容	C _{iss}	V _{gs} =0V, V _{ds} =10V, f=1MHz			850		pF
输出电容	C _{oss}				120		pF
反馈电容	C _{rss}				60		pF
开关特性							
总栅极电荷	Q _g	V _{gs} =4.5V, V _{ds} =10V, I _d ≐4.0A			8.2	14.0	nC
栅极 – 源极电荷	Q _{gs}				1.2		nC
栅极 – 漏极电荷	Q _{gd}				1.0		nC
导通延迟时间	t _d (on)	V _{gs} =4.5V, V _{ds} =10V R _L =2.2Ω, I _d ≐4.0A R _{gen} =1.0Ω			10	16	ns
导通上升时间	t _r				16	25	ns
关闭延迟时间	t _d (off)				31	45	ns
关闭下降时间	t _f				10	16	ns

双 N 沟道 MOSFET (共漏极)

ELM582050A-S

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

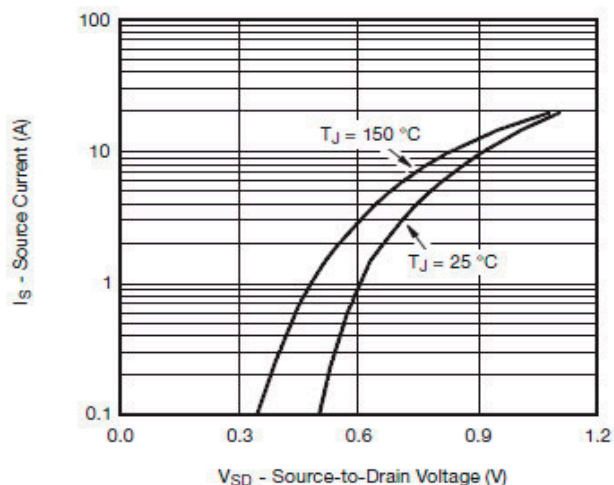
标准特性和热特性曲线



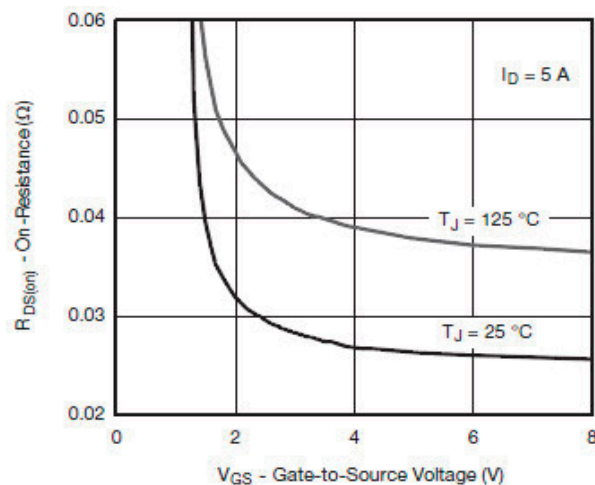
双 N 沟道 MOSFET (共漏极)

ELM582050A-S

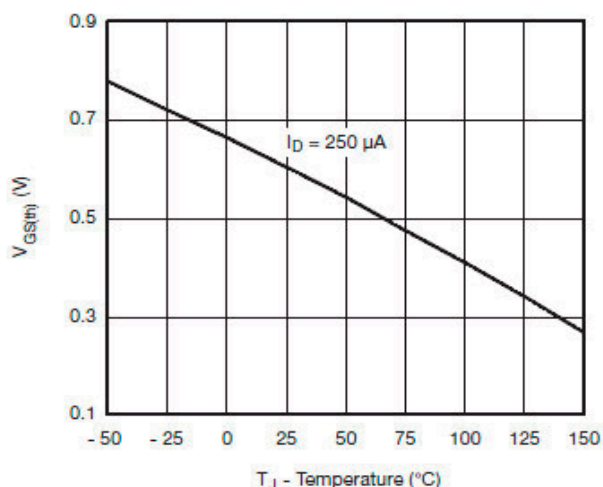
<http://www.elm-tech.com>



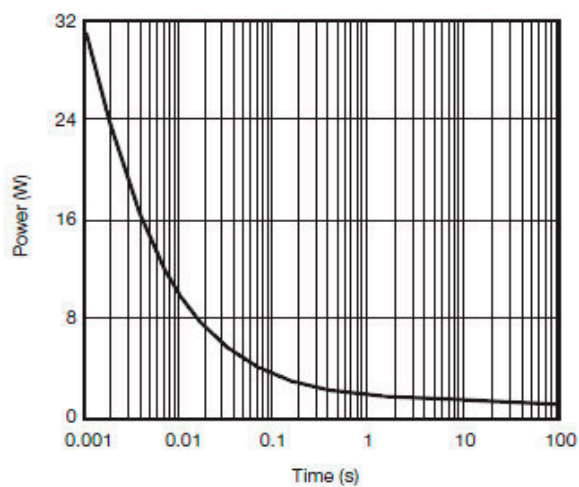
Source-Drain Diode Forward Voltage



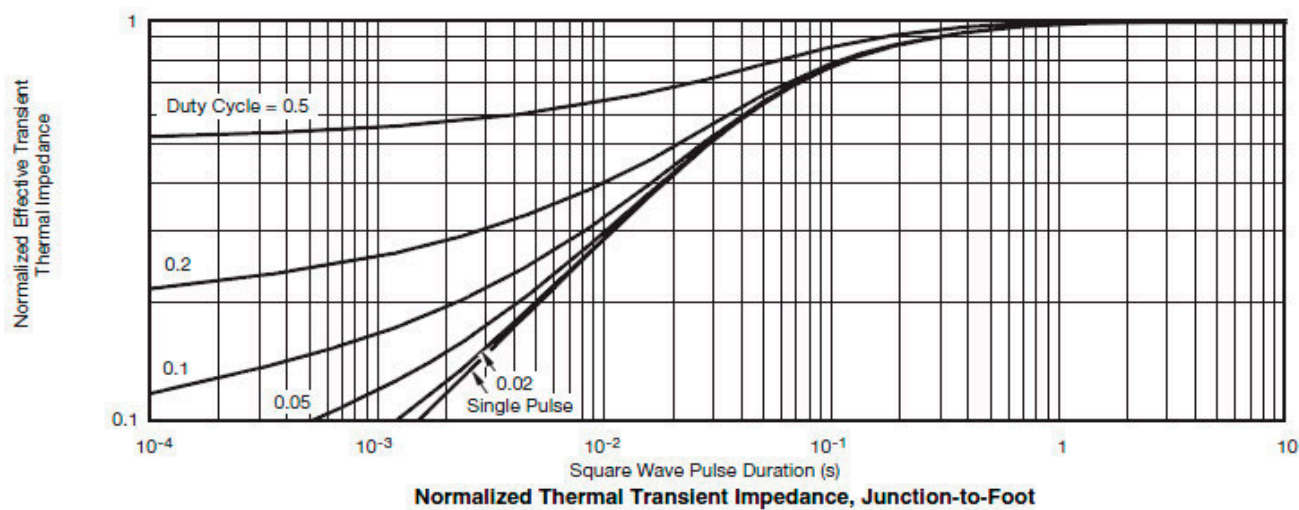
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power (Junction-to-Ambient)



Normalized Thermal Transient Impedance, Junction-to-Foot

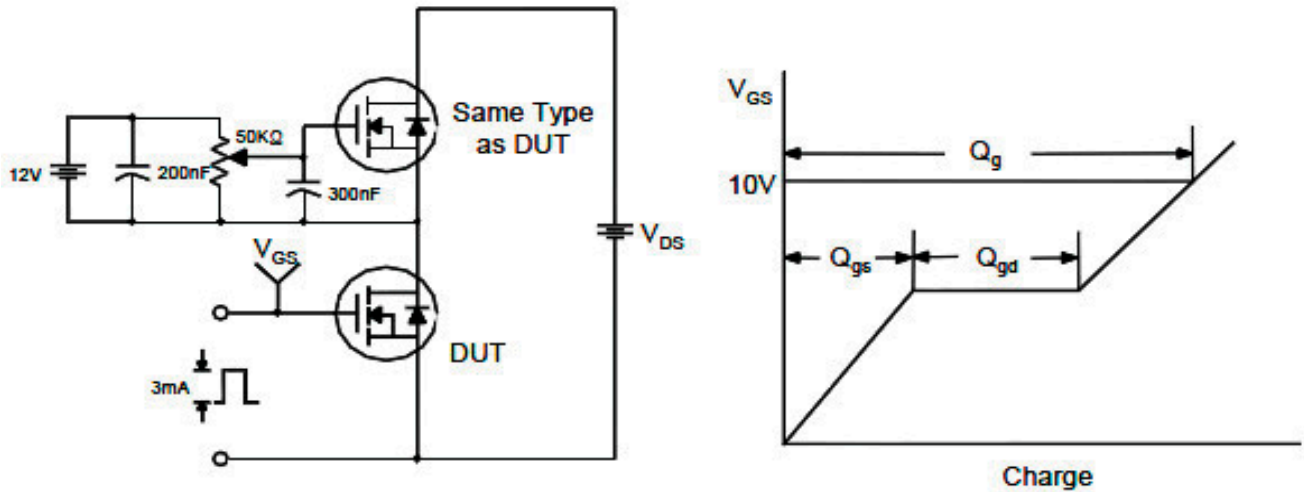
双 N 沟道 MOSFET (共漏极)

ELM582050A-S

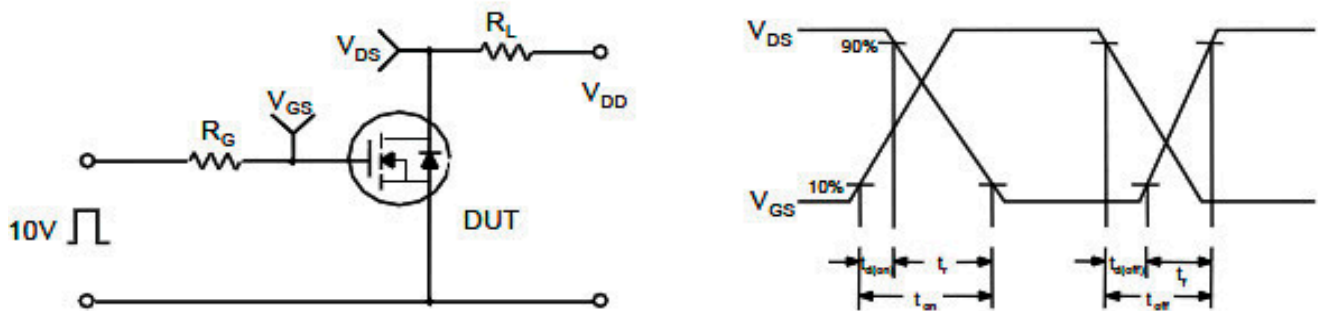
<http://www.elm-tech.com>

■测试电路和波形

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms

