Dual P-channel MOSFET (common drain)

ELM582061A-S

■General description

ELM582061A-S uses advanced trench technology to provide excellent Rds(on), low gate charge and low gate threshold voltage.

■Features

- Vds=-20V
- Id=-4.5A
- Rds(on)=56mΩ (Vgs=-4.5V)
- Rds(on)=70mΩ (Vgs=-2.5V)
- Rds(on)=96mΩ (Vgs=-1.8V)

■Maximum absolute ratings

Ta=25°C. Unless otherwise noted.

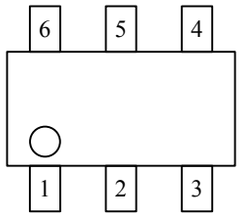
Parameter		Symbol	Limit	Unit
Drain-source voltage		Vds	-20	V
Gate-source voltage		Vgs	±12	V
Continuous drain current(Tj=150°C)	Ta=25°C	Id	-4.5	A
	Ta=70°C		-2.8	
Pulsed drain current		Idm	-15	A
Power dissipation	Tc=25°C	Pd	2.0	W
	Tc=70°C		1.3	
Operating junction temperature		Tj	150	°C
Storage temperature range		Tstg	-55 to 150	°C

■Thermal characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal resistance junction-to-ambient	Rθja		120	°C/W

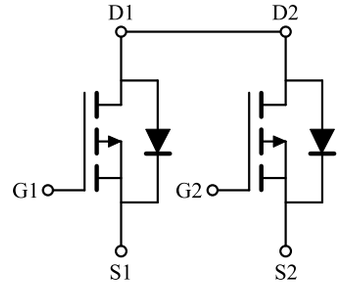
■Pin configuration

SOT-26(TOP VIEW)



Pin No.	Pin name
1	SOURCE1
2	DRAIN1/DRAIN2
3	SOURCE2
4	GATE2
5	DRAIN1/DRAIN2
6	GATE1

■Circuit

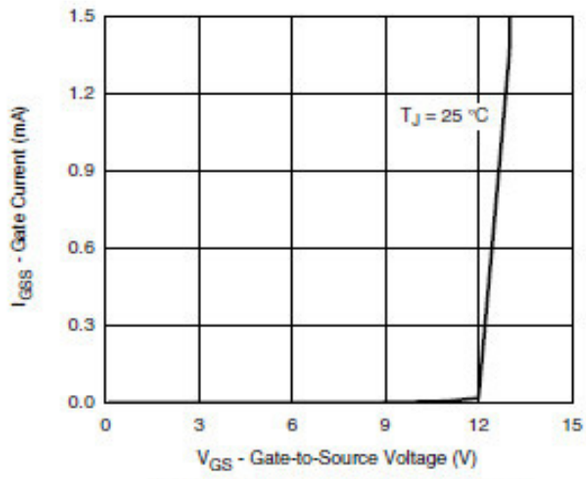


■Electrical characteristics

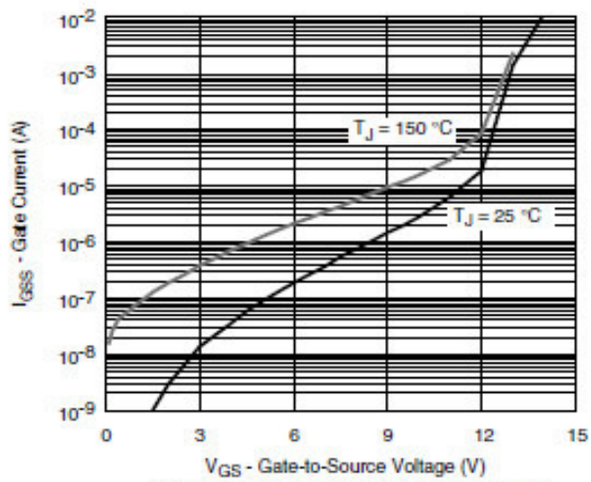
Ta=25°C. Unless otherwise noted.

Parameter	Symbol	Condition		Min.	Typ.	Max.	Unit
STATIC PARAMETERS							
Drain-source breakdown voltage	BVdss	Id=-250μA, Vgs=0V		-20			V
Zero gate voltage drain current	Idss	Vds=-16V, Vgs=0V				-1	μA
			Ta=85°C			-10	
Gate-body leakage current	Igss	Vds=0V, Vgs=±12V				±100	nA
Gate threshold voltage	Vgs(th)	Vds=Vgs, Id=-250μA		-0.4		-0.8	V
On state drain current	Id(on)	Vgs=-4.5V, Vds≥-5V		-6			A
		Vgs=-2.5V, Vds≥-5V		-4			
Static drain-source on-resistance	Rds(on)	Vgs=-4.5V, Id=-4.5A			50	56	mΩ
		Vgs=-2.5V, Id=-3.2A			60	70	
		Vgs=-1.8V, Id=-2.8A			80	96	
Forward transconductance	Gfs	Vds=-5V, Id=-3.6A			10		S
Diode forward voltage	Vsd	Is=-1.6A, Vgs=0V			-0.85	-1.20	V
Max. body-diode continuous current	Is					-1.6	A
DYNAMIC PARAMETERS							
Input capacitance	Ciss	Vgs=0V, Vds=-10V, f=1MHz			780		pF
Output capacitance	Coss				115		pF
Reverse transfer capacitance	Crss				55		pF
SWITCHING PARAMETERS							
Total gate charge	Qg	Vgs=-4.5V, Vds=-10V Id≡-4.0A			8.0	12.0	nC
Gate-source charge	Qgs				0.9		nC
Gate-drain charge	Qgd				3.0		nC
Turn-on delay time	td(on)	Vgs=-4.5V, Vds=-10V Id≡-4.0A, RL=2.3Ω Rgen=1Ω			0.2	0.3	ns
Turn-on rise time	tr				1.0	1.5	ns
Turn-off delay time	td(off)				4.0	6.0	ns
Turn-off fall time	tf				2.0	3.0	ns

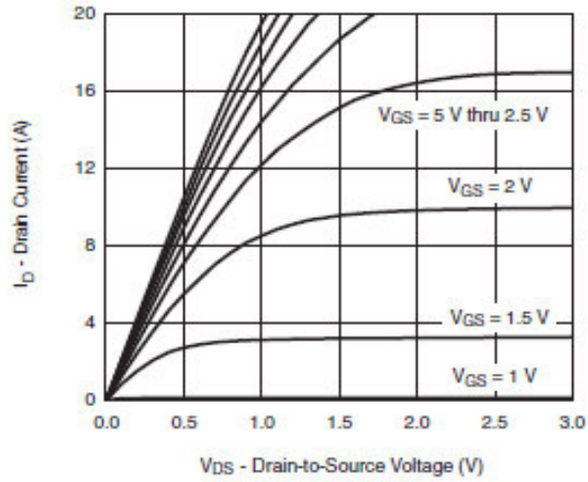
■Typical electrical and thermal characteristics



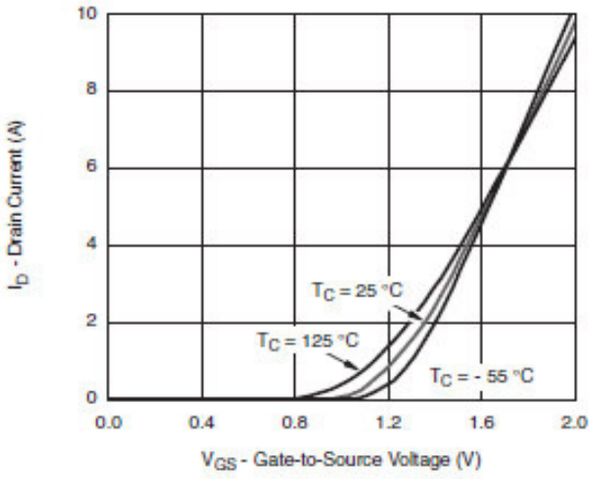
Gate Current vs. Gate-Source Voltage



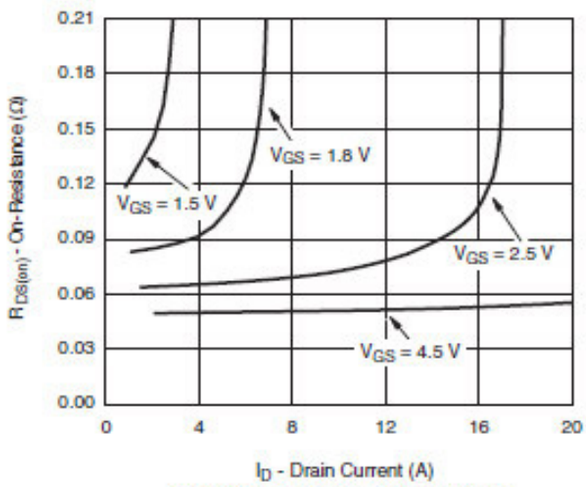
Gate Current vs. Gate-Source Voltage



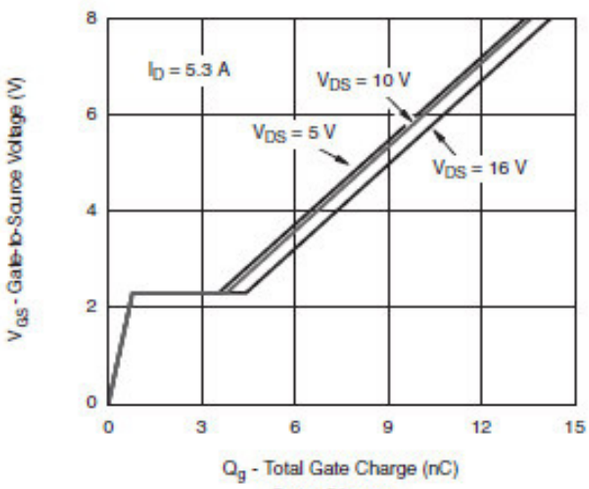
Output Characteristics



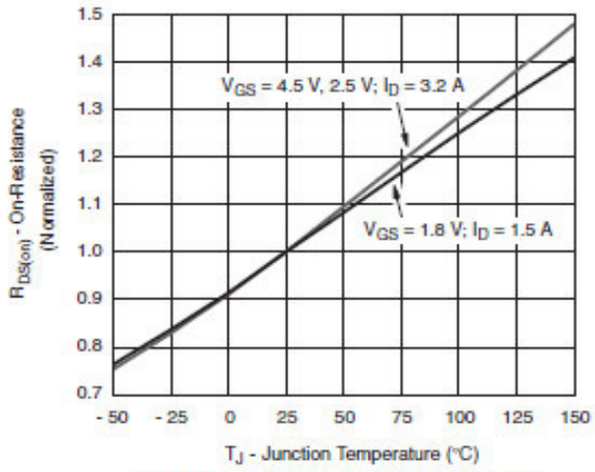
Transfer Characteristics



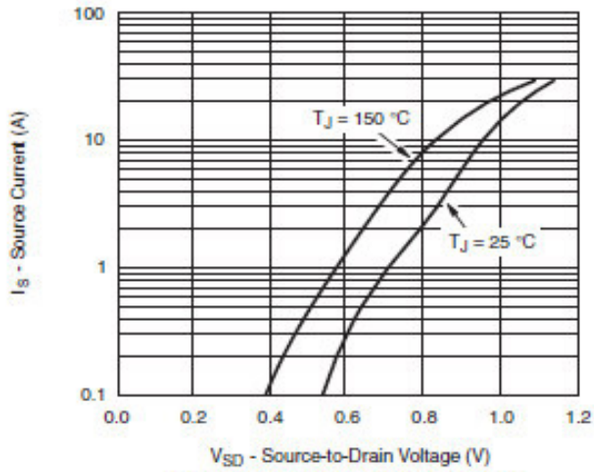
On-Resistance vs. Drain Current



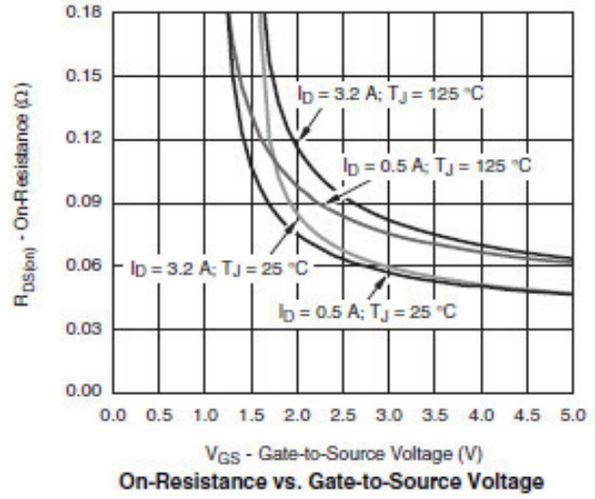
Gate Charge



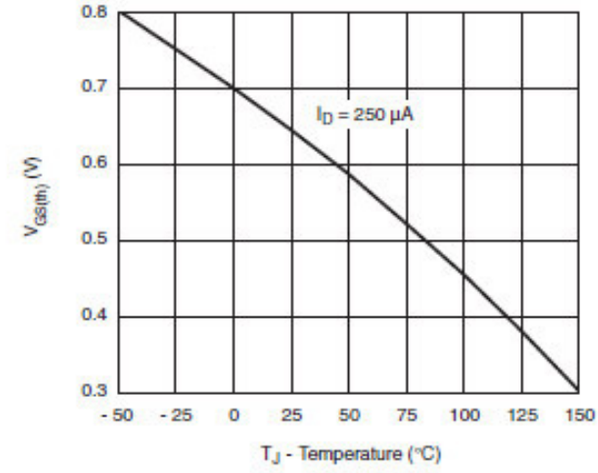
On-Resistance vs. Junction Temperature



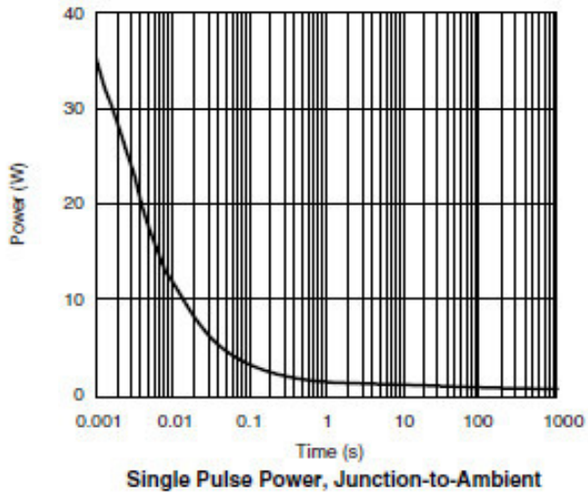
Soure-Drain Diode Forward Voltage



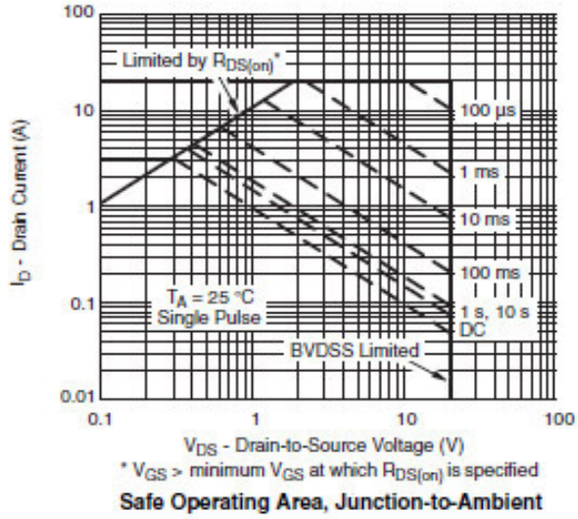
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



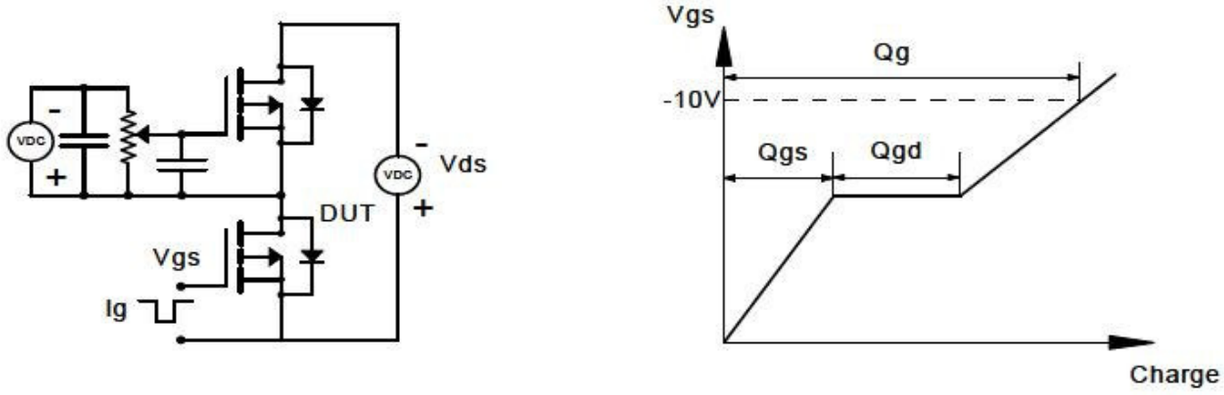
Single Pulse Power, Junction-to-Ambient



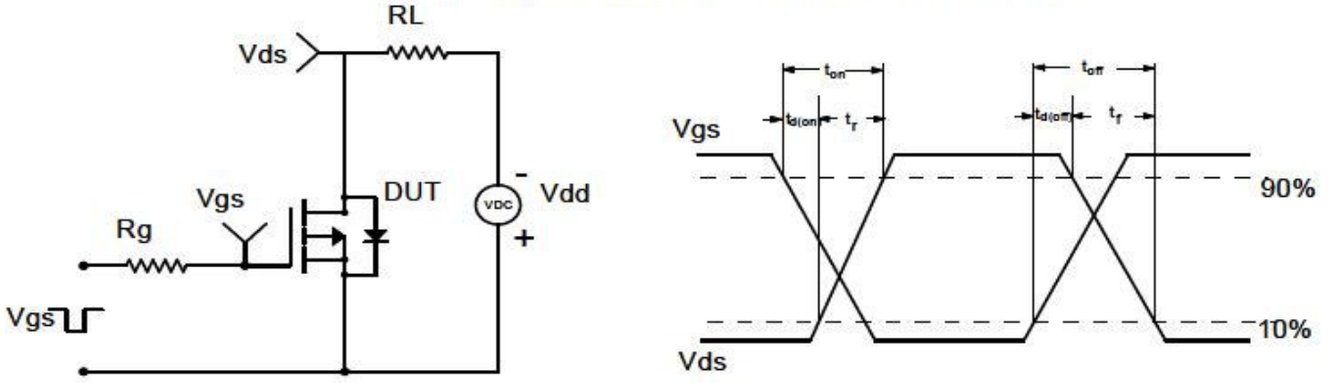
Safe Operating Area, Junction-to-Ambient

■Test circuit & waveform

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms