

Dual P-channel MOSFET

ELM56801EA-S

■ General description

ELM56801EA-S uses advanced trench technology to provide excellent $R_{ds(on)}$, low gate charge and low gate resistance.

■ Features

- $V_{ds} = -20V$
- $I_d = -3.2A$, $R_{ds(on)} = 100m\Omega$ ($V_{gs} = -4.5V$)
- $I_d = -2.6A$, $R_{ds(on)} = 135m\Omega$ ($V_{gs} = -2.5V$)
- $I_d = -1.5A$, $R_{ds(on)} = 190m\Omega$ ($V_{gs} = -1.8V$)

■ Maximum absolute ratings

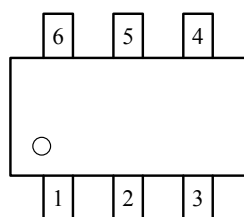
Parameter	Symbol	Limit	Unit
Drain-source voltage	V_{ds}	-20	V
Gate-source voltage	V_{gs}	± 12	V
Continuous drain current	I_d	$T_a = 25^\circ C$	-3.2
		$T_a = 70^\circ C$	-2.6
Pulsed drain current	I_{dm}	-20	A
Power dissipation	P_d	$T_a = 25^\circ C$	2.0
		$T_a = 70^\circ C$	1.3
Junction and storage temperature range	T_j, T_{stg}	-55 to 150	$^\circ C$

■ Thermal characteristics

Parameter	Symbol	Typ.	Max.	Unit
Maximum junction-to-ambient	$R_{\theta ja}$		120	$^\circ C/W$

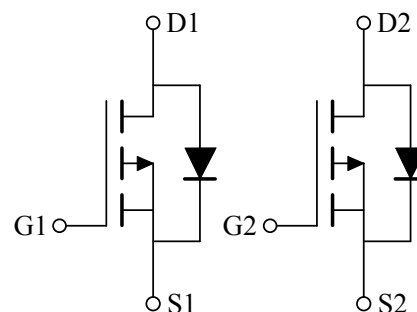
■ Pin configuration

SOT-26(TOP VIEW)



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

■ Circuit



Dual P-channel MOSFET

ELM56801EA-S

■Electrical characteristics

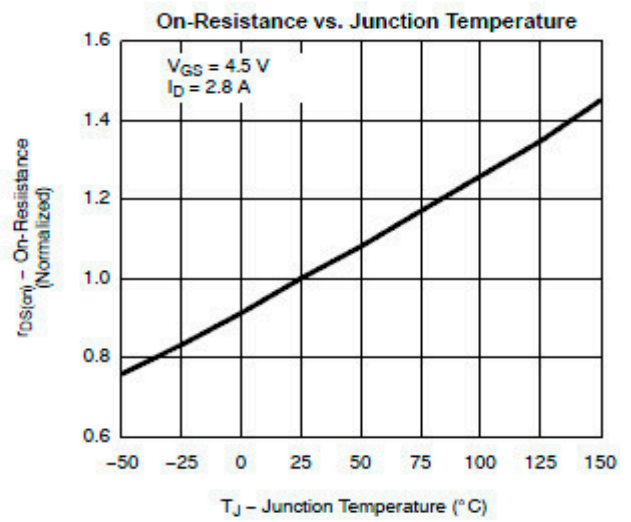
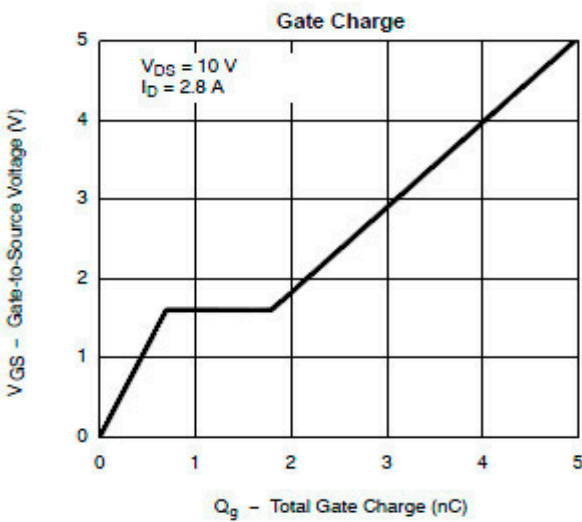
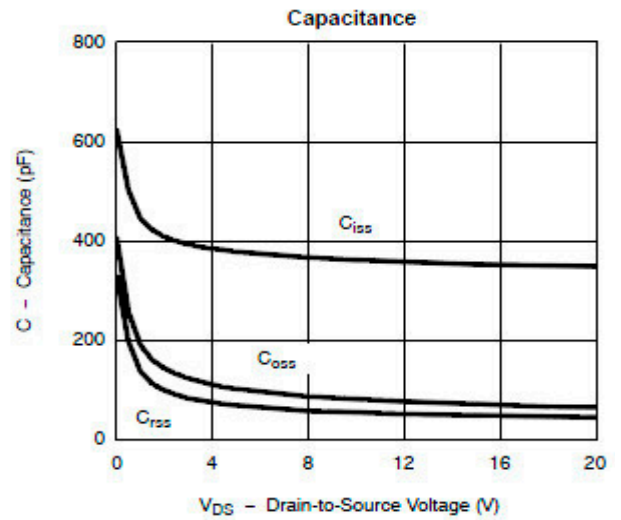
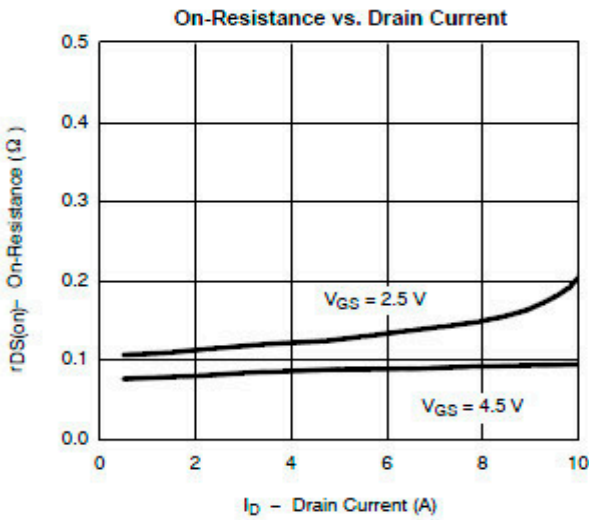
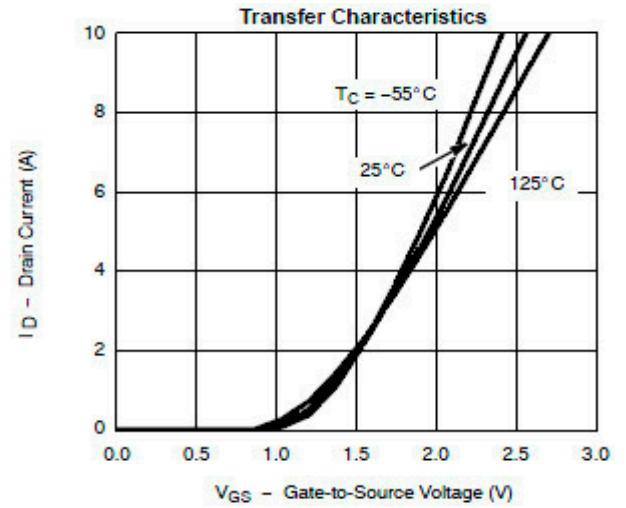
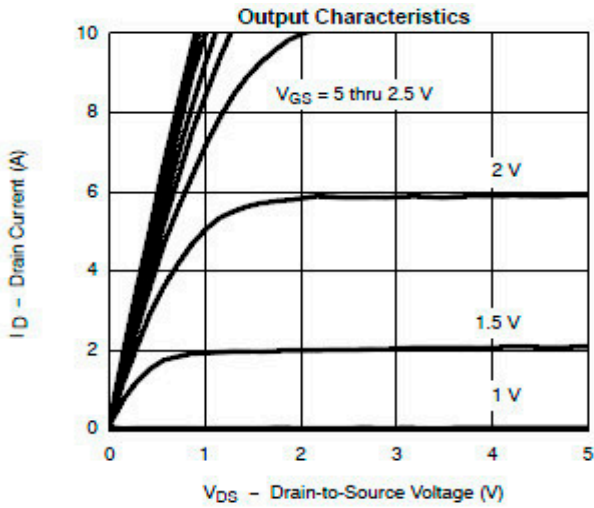
Ta=25°C

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 Tj=85°C			-1	μA
					-30	
Gate-body leakage current	Igss	Vds=0V, Vgs=±12V			±100	nA
Gate threshold voltage	Vgs(th)	Vds=Vgs, Id=-250μA	-0.3		-0.7	V
On state drain current	Id(on)	Vgs=-4.5V, Vds=-5V	-6			A
		Vgs=-2.5V, Vds=-5V	-3			
Static drain-source on-resistance	Rds(on)	Vgs=-4.5V, Id=-3.2A		92	100	mΩ
		Vgs=-2.5V, Id=-2.6A		122	135	
		Vgs=-1.8V, Id=-1.5A		168	190	
Forward transconductance	Gfs	Vds=-5V, Id=-2.8A		6.5		S
Diode forward voltage	Vsd	Is=-1.25A, Vgs=0V		-0.75	-1.30	V
Max. body-diode continuous current	Is				-1.7	A
DYNAMIC PARAMETERS						
Input capacitance	Ciss			415		pF
Output capacitance	Coss	Vgs=0V, Vds=-6V, f=1MHz		223		pF
Reverse transfer capacitance	Crss			87		pF
SWITCHING PARAMETERS						
Total gate charge	Qg	Vgs=-4.5V, Vds=-6V Id=-2.8A		5.80	10.00	nC
Gate-source charge	Qgs			0.85		nC
Gate-drain charge	Qgd			1.70		nC
Turn-on delay time	td(on)	Vgs=-4.5V, Vds=-6V, Id=-1.0A RL=6Ω, Rgen=6Ω		13	25	ns
Turn-on rise time	tr			36	60	ns
Turn-off delay time	td(off)			42	70	ns
Turn-off fall time	tf			34	60	ns

Dual P-channel MOSFET

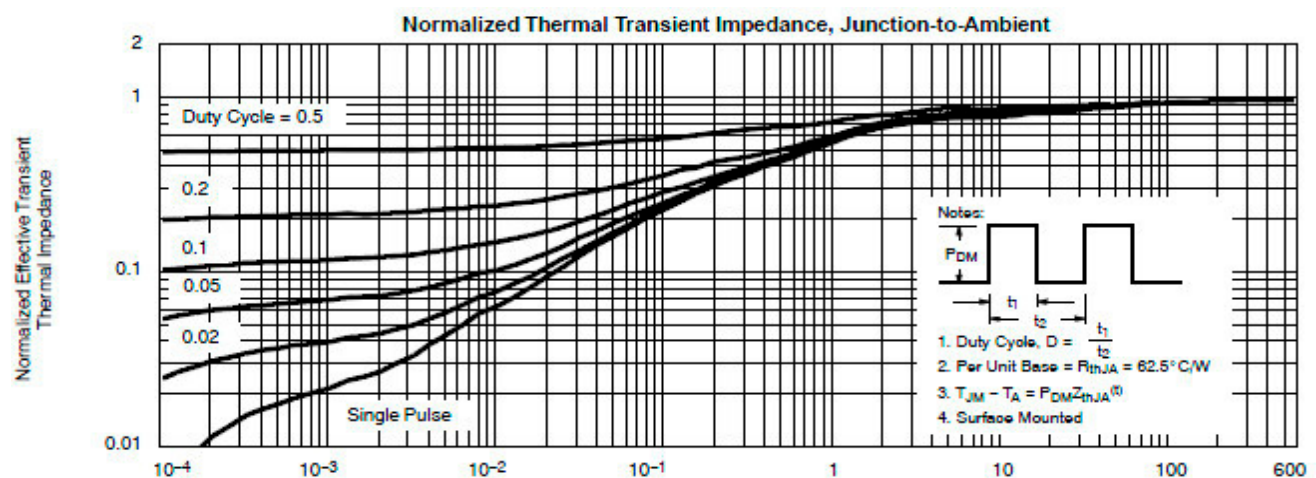
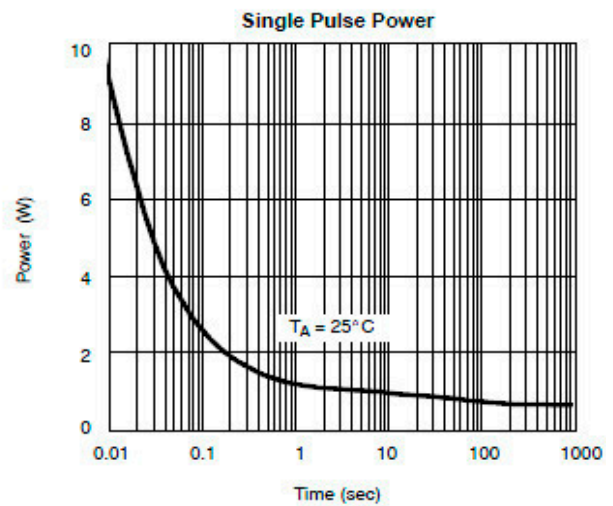
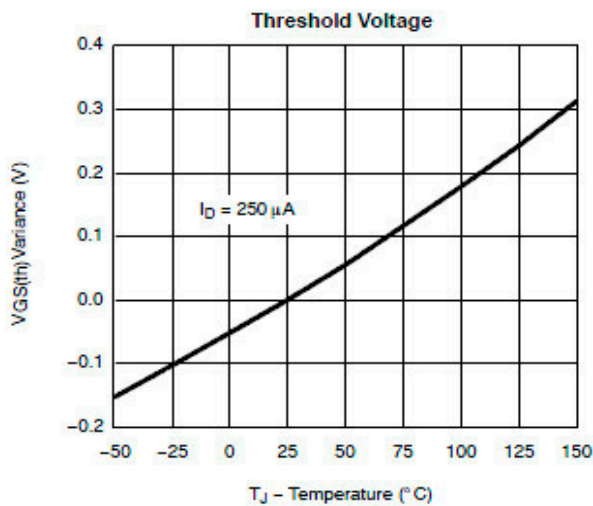
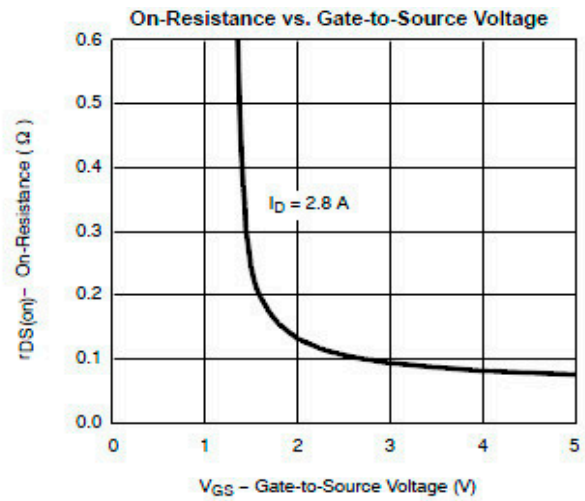
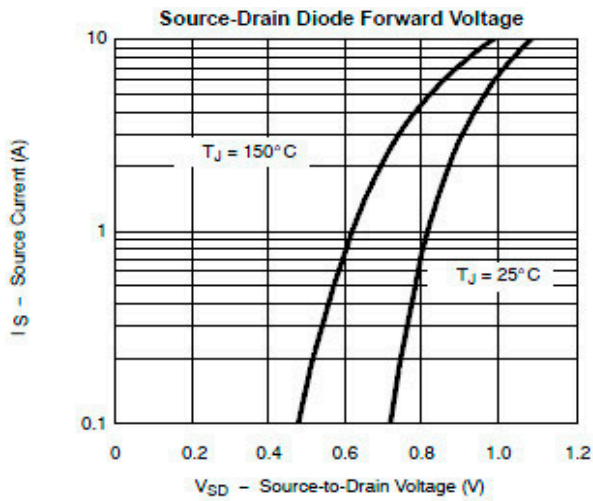
ELM56801EA-S

■ Typical electrical and thermal characteristics



Dual P-channel MOSFET

ELM56801EA-S

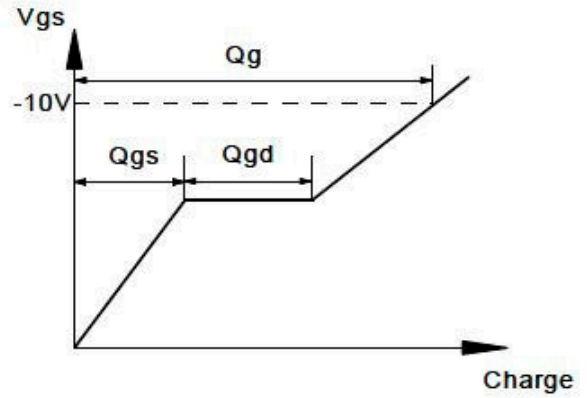
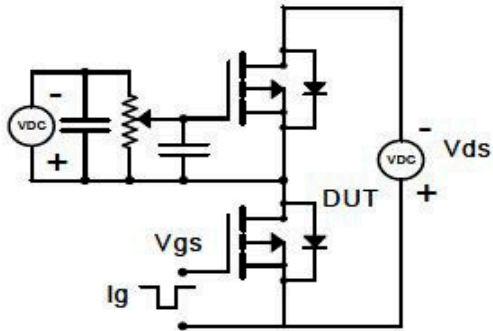


Dual P-channel MOSFET

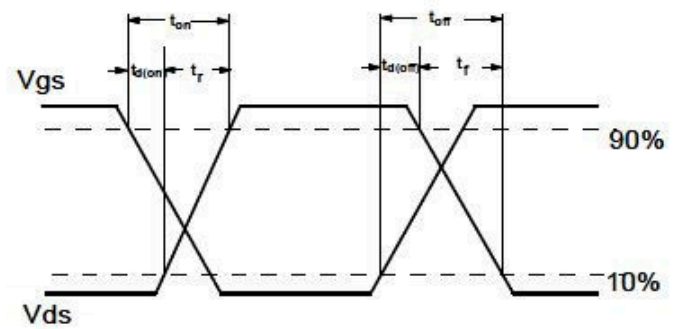
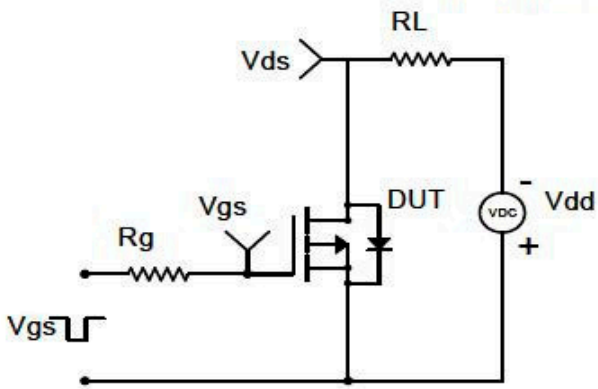
ELM56801EA-S

■ Test circuit & waveform

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms

