

# Dual P-channel MOSFET

## ELM544933A-N

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

### ■ General description

ELM544933A-N uses advanced trench technology to provide excellent  $R_{ds(on)}$ , low gate charge and low gate threshold voltage.

### ■ Features

- $V_{ds} = -20V$
- $I_d = -6.5A$
- $R_{ds(on)} = 40m\Omega$  ( $V_{gs} = -4.5V$ )
- $R_{ds(on)} = 54m\Omega$  ( $V_{gs} = -2.5V$ )
- $R_{ds(on)} = 75m\Omega$  ( $V_{gs} = -1.8V$ )

### ■ Maximum absolute ratings

$T_a = 25^\circ C$ . Unless otherwise noted.

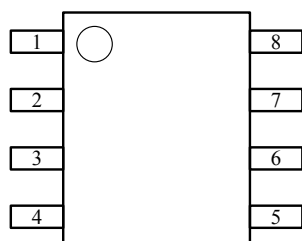
Parameter	Symbol	Limit	Unit
Drain-source voltage	$V_{ds}$	-20	V
Gate-source voltage	$V_{gs}$	$\pm 12$	V
Continuous drain current	$I_d$	$T_a = 25^\circ C$	-6.5
		$T_a = 70^\circ C$	-2.5
Pulsed drain current	$I_{dm}$	-18	A
Power dissipation	$P_d$	$T_c = 25^\circ C$	2.8
		$T_c = 70^\circ C$	1.8
Junction and storage temperature range	$T_j, T_{stg}$	-55 to 150	$^\circ C$

### ■ Thermal characteristics

Parameter	Symbol	Typ.	Max.	Unit
Thermal resistance junction-to-ambient	$R_{\theta ja}$		62.5	$^\circ C/W$

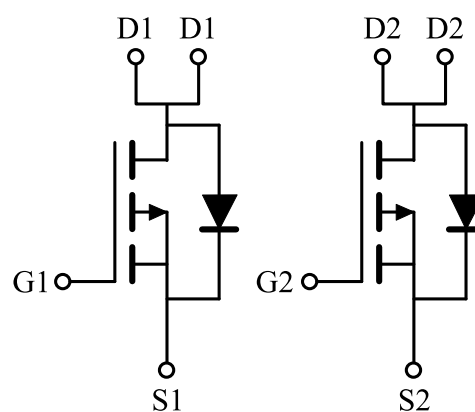
### ■ Pin configuration

SOP-8(TOP VIEW)



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

### ■ Circuit



# Dual P-channel MOSFET

## ELM544933A-N

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

### ■Electrical characteristics

Ta=25°C. Unless otherwise noted.

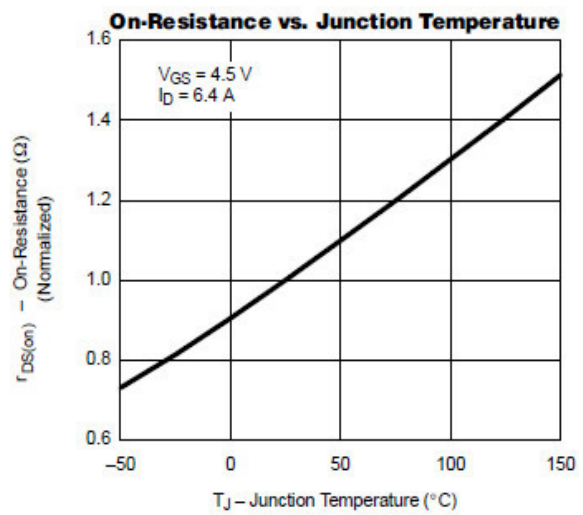
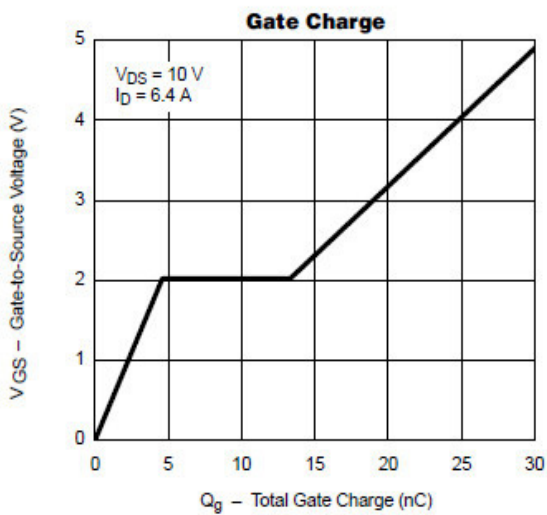
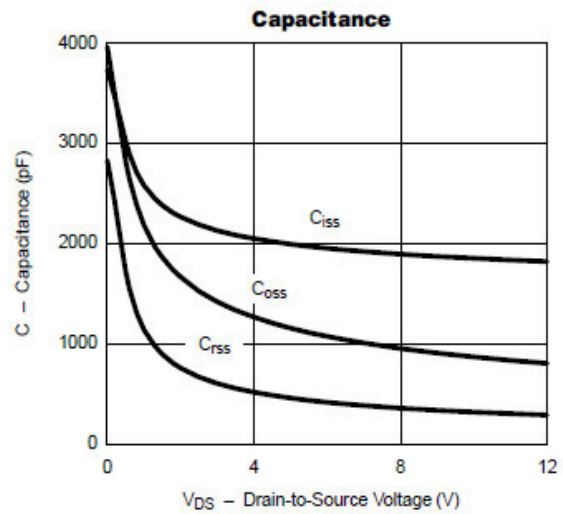
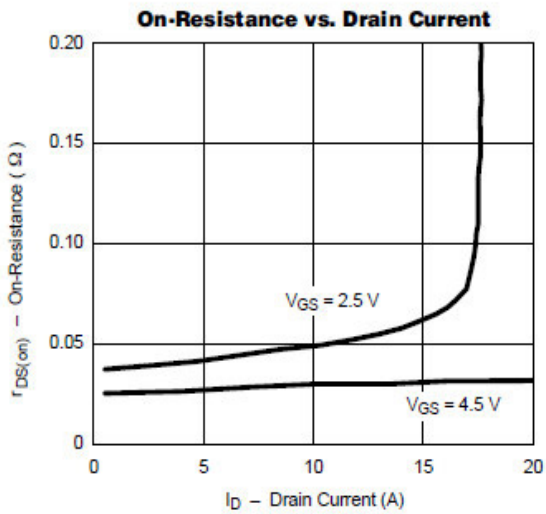
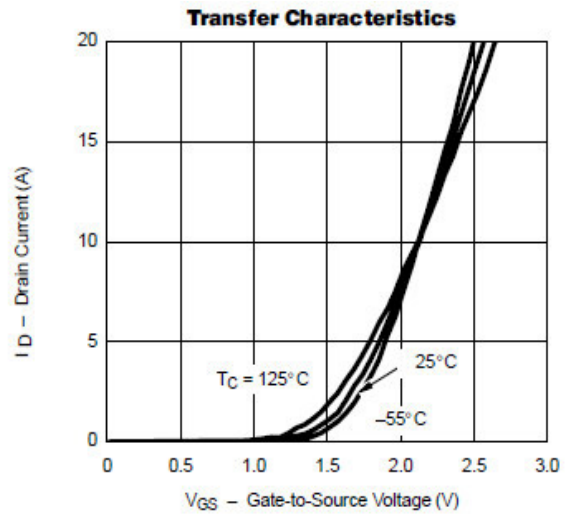
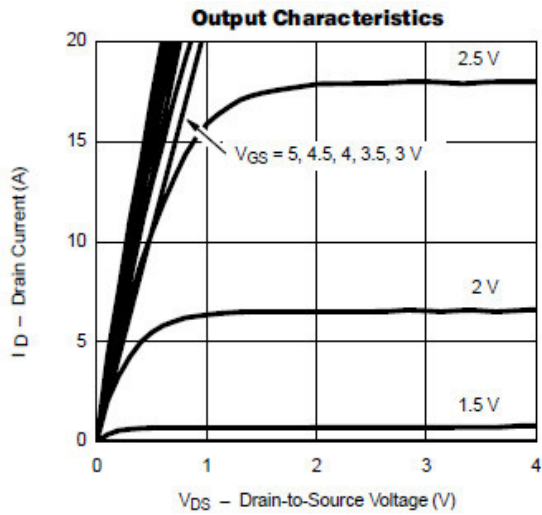
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	BVdss	Id=-250μA, Vgs=0V	-20			V
Zero gate voltage drain current	Idss	Vds=-16V, Vgs=0V			-1	μA
		Vds=-16V, Vgs=0V, Ta=85°C			-10	
Gate-body leakage current	Igss	Vds=0V, Vgs=±12V			±100	nA
Gate threshold voltage	Vgs(th)	Vds=Vgs, Id=-250μA	-0.4		-0.8	V
On-state drain current	Id(on)	Vds≤-5V, Vgs=-4.5	-10			A
		Vds≤-5V, Vgs=-2.5	-5			
Static drain-source on-resistance	Rds(on)	Vgs=-4.5V, Id=-6.5A		35	40	mΩ
		Vgs=-2.5V, Id=-4.5A		48	54	
		Vgs=-1.8V, Id=-2.5A		68	75	
Forward transconductance	Gfs	Vds=-9V, Id=-6.5A		14		S
Diode forward voltage	Vsd	Is=-2.5A, Vgs=0V		-0.85	-1.20	V
Max. body-diode continuous curren	Is				-1.7	A
<b>DYNAMIC PARAMETERS</b>						
Input capacitance	Ciss	Vgs=0V, Vds=-15V, f=1MHz		950		pF
Output capacitance	Coss			200		pF
Reverse transfer capacitance	Crss			175		pF
<b>SWITCHING PARAMETERS</b>						
Total gate charge	Qg	Vgs=-4.5V, Vds=-15V Id=-6.0A		10.0	18.0	nC
Gate-source charge	Qgs			1.6		nC
Gate-drain charge	Qgd			3.0		nC
Turn-on delay time	td(on)	Vgs=-10V, Vds=-15V Id=-5.0A, RL=15Ω, Rgen=6Ω		8	18	ns
Turn-on rise time	tr			8	18	ns
Turn-off delay time	td(off)			25	50	ns
Turn-off fall time	tf			25	35	ns

# Dual P-channel MOSFET

ELM544933A-N

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

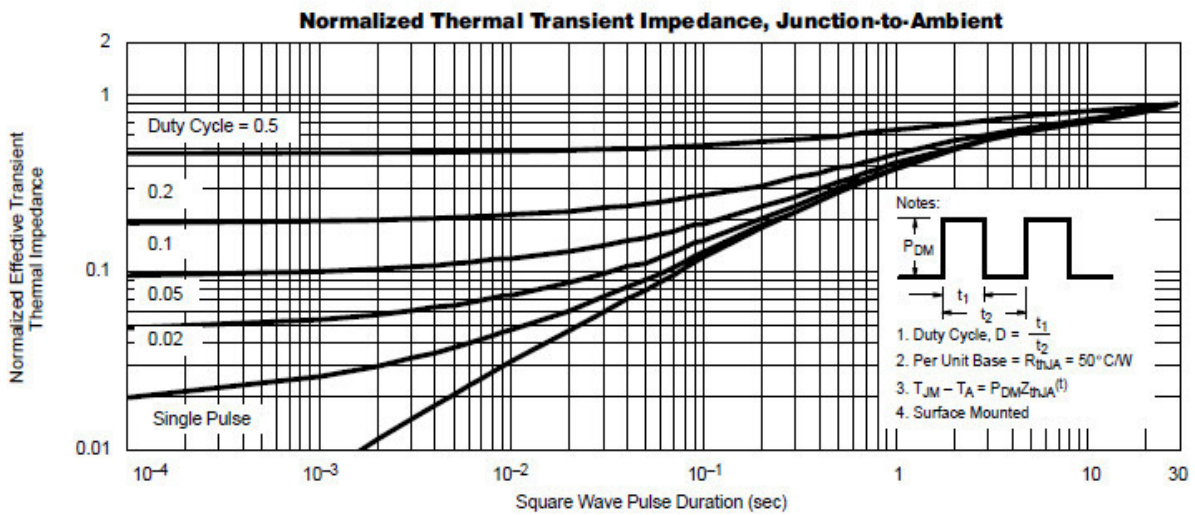
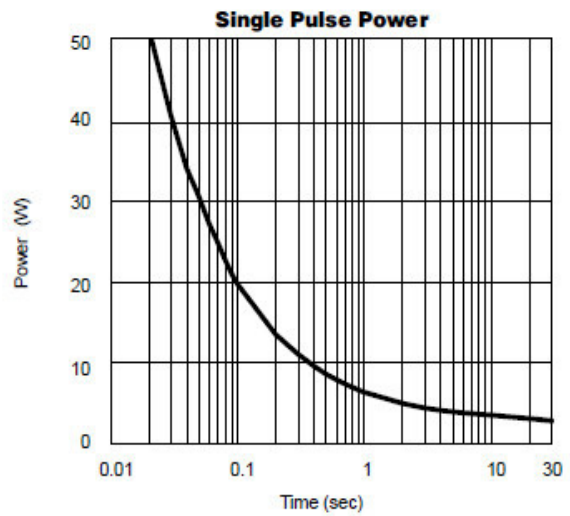
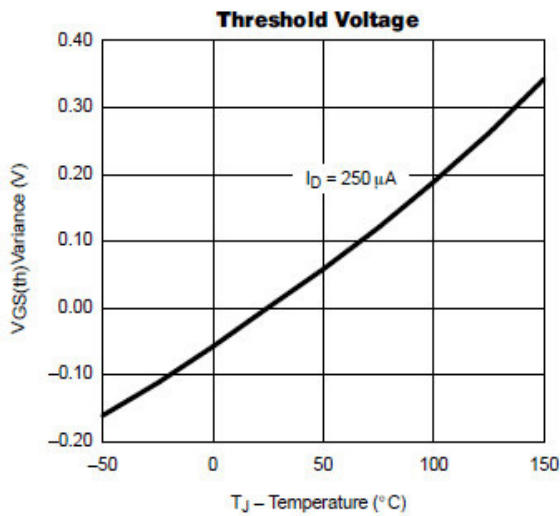
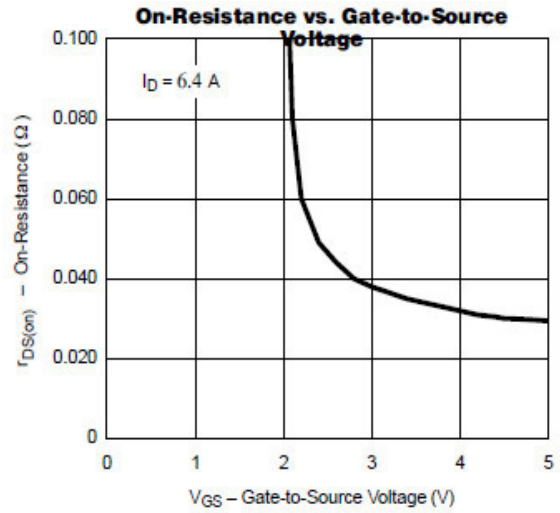
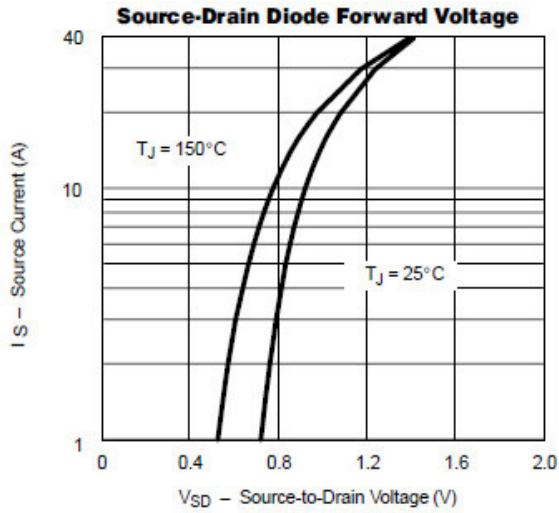
## Typical electrical and thermal characteristics



# Dual P-channel MOSFET

## ELM544933A-N

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



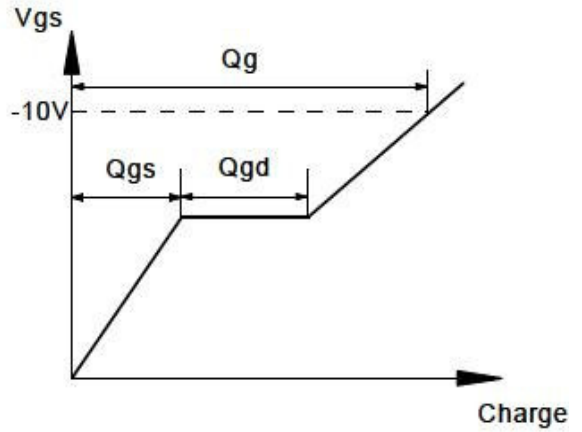
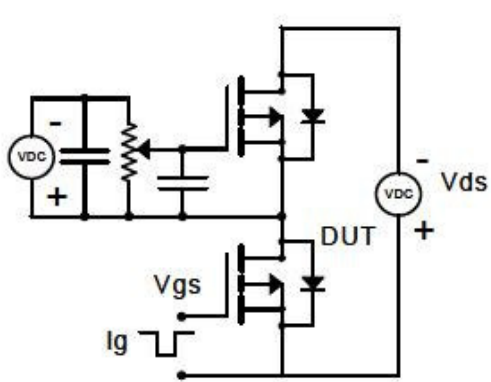
# Dual P-channel MOSFET

ELM544933A-N

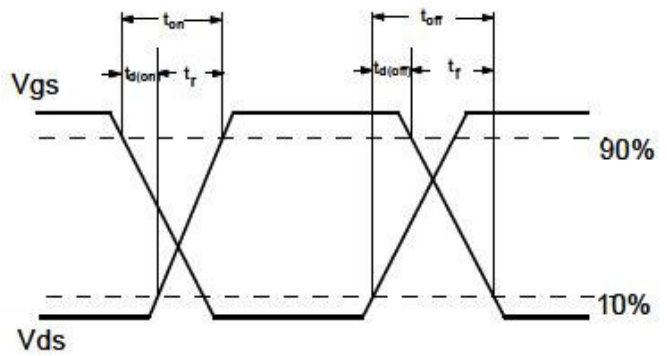
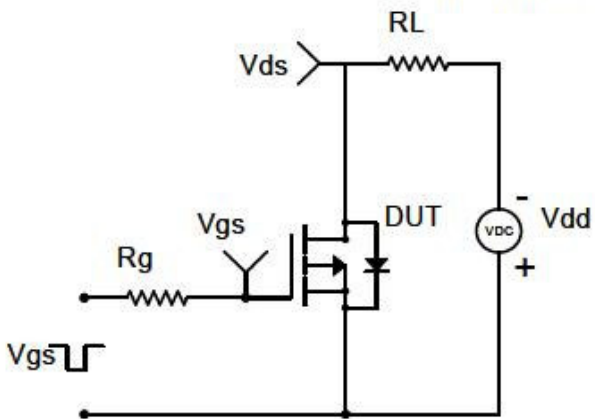
<http://www.elm-tech.com>

## ■ Test circuit and waveform

Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms

