

# Dual N-channel MOSFET

ELM34808AA-N

## General description

ELM34808AA-N uses advanced trench technology to provide excellent  $R_{ds(on)}$ , low gate charge and low gate resistance.

## Features

- $V_{ds}=30V$
- $I_d=7A$
- $R_{ds(on)} < 25m\Omega$  ( $V_{gs}=10V$ )
- $R_{ds(on)} < 37m\Omega$  ( $V_{gs}=4.5V$ )

## Maximum absolute ratings

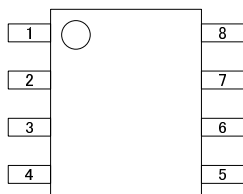
Parameter	Symbol	Limit	Unit	Note
Drain-source voltage	$V_{ds}$	30	V	
Gate-source voltage	$V_{gs}$	$\pm 20$	V	
Continuous drain current	$I_d$	$T_a=25^\circ C$	7	A
		$T_a=70^\circ C$	6	
Pulsed drain current	$I_{dm}$	20	A	3
Power dissipation	$P_d$	$T_a=25^\circ C$	2.0	W
		$T_a=70^\circ C$	1.3	
Junction and storage temperature range	$T_j, T_{stg}$	-55 to 150	$^\circ C$	

## Thermal characteristics

Parameter		Symbol	Typ.	Max.	Unit	Note
Maximum junction-to-ambient	Steady-state	$R\theta_{ja}$		62.5	$^\circ C/W$	

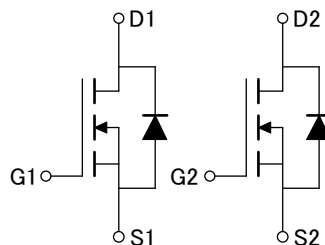
## Pin configuration

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 N-channel MOSFET

ELM34808AA-N

## Electrical characteristics

T<sub>a</sub>=25°C

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	Note	
<b>STATIC PARAMETERS</b>								
Drain-source breakdown voltage	BV <sub>dss</sub>	I <sub>d</sub> =250 μA, V <sub>gs</sub> =0V	30			V		
Zero gate voltage drain current	I <sub>dss</sub>	V <sub>ds</sub> =24V, V <sub>gs</sub> =0V			1	μA		
		V <sub>ds</sub> =20V, V <sub>gs</sub> =0V, T <sub>j</sub> =55°C			10			
Gate-body leakage current	I <sub>gss</sub>	V <sub>ds</sub> =0V, V <sub>gs</sub> =±20V			±100	nA		
Gate threshold voltage	V <sub>gs(th)</sub>	V <sub>ds</sub> =V <sub>gs</sub> , I <sub>d</sub> =250 μA	1.0	1.5	2.5	V		
On state drain current	I <sub>d(on)</sub>	V <sub>gs</sub> =10V, V <sub>ds</sub> =5V	20			A	1	
Static drain-source on-resistance	R <sub>ds(on)</sub>	V <sub>gs</sub> =10V, I <sub>d</sub> =7A		18	25	mΩ	1	
		V <sub>gs</sub> =4.5V, I <sub>d</sub> =6A		25	37	mΩ		
Forward transconductance	G <sub>fs</sub>	V <sub>ds</sub> =5V, I <sub>d</sub> =7A		19		S	1	
Diode forward voltage	V <sub>sd</sub>	I <sub>f</sub> =1A, V <sub>gs</sub> =0V			1	V	1	
Max.body-diode continuous current	I <sub>s</sub>				1.3	A		
Pulsed current	I <sub>sm</sub>				2.6	A	3	
<b>DYNAMIC PARAMETERS</b>								
Input capacitance	C <sub>iss</sub>	V <sub>gs</sub> =0V, V <sub>ds</sub> =10V, f=1MHz		790		pF		
Output capacitance	C <sub>oss</sub>				175		pF	
Reverse transfer capacitance	C <sub>rss</sub>				65		pF	
<b>SWITCHING PARAMETERS</b>								
Total gate charge	Q <sub>g</sub>	V <sub>gs</sub> =10V, V <sub>ds</sub> =15V, I <sub>d</sub> =7A		16.0		nC	2	
Gate-source charge	Q <sub>gs</sub>			2.5		nC	2	
Gate-drain charge	Q <sub>gd</sub>			2.1		nC	2	
Turn-on delay time	t <sub>d(on)</sub>	V <sub>gs</sub> =10V, V <sub>ds</sub> =10V, I <sub>d</sub> ≈ 1A R <sub>gen</sub> =6 Ω		2.2	4.4	ns	2	
Turn-on rise time	t <sub>r</sub>			7.5	15.0	ns	2	
Turn-off delay time	t <sub>d(off)</sub>			11.8	21.3	ns	2	
Turn-off fall time	t <sub>f</sub>			3.7	7.4	ns	2	

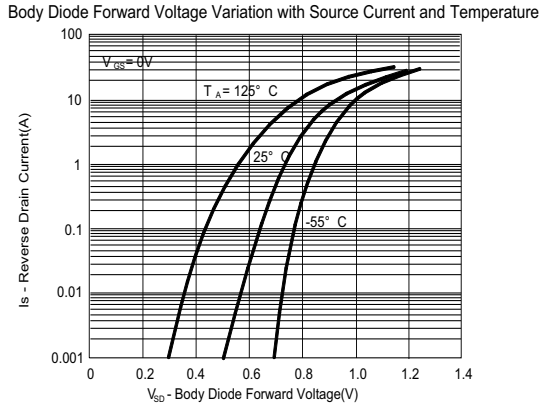
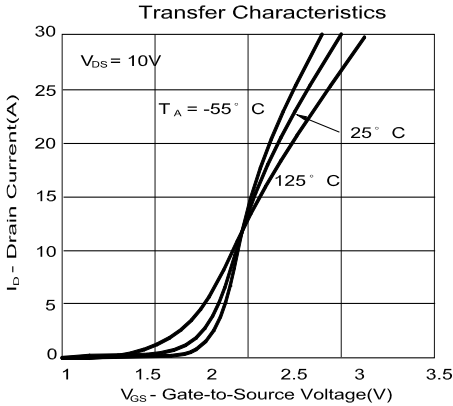
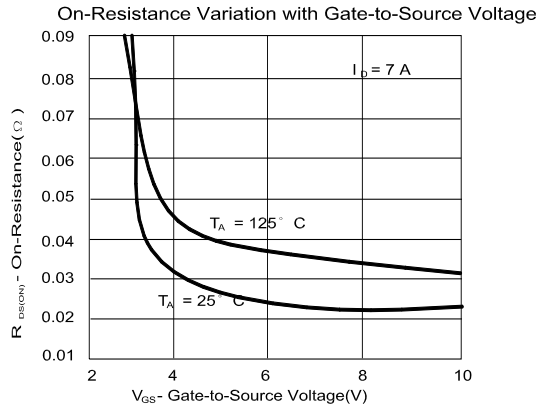
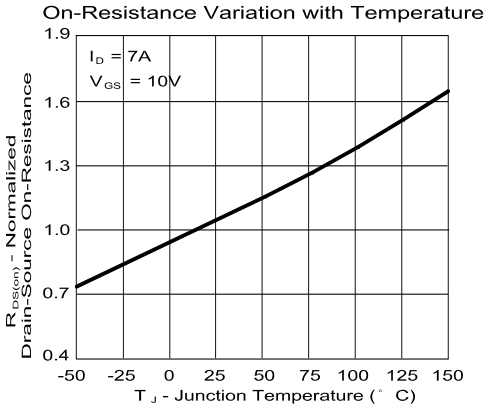
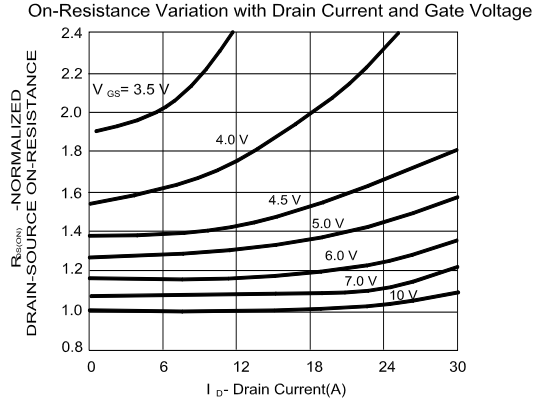
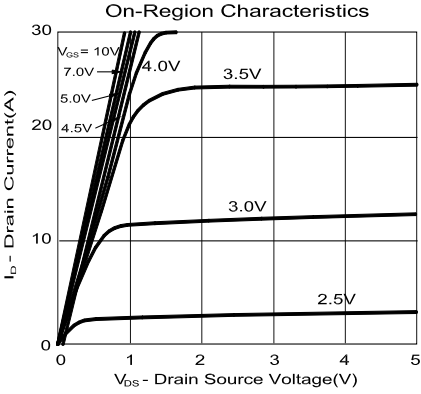
NOTE :

1. Pulsed width ≤ 300 μsec and Duty cycle ≤ 2%.
2. Independent of operating temperature.
3. Pulsed width limited by maximum junction temperature.
4. Duty cycle ≤ 1%.

# Dual N-channel MOSFET

ELM34808AA-N

## Typical electrical and thermal characteristics



# Dual N-channel MOSFET

ELM34808AA-N

