Dual P-channel MOSFET

ELM34803AA-N

■General description

ELM34803AA-N uses advanced trench technology to provide excellent Rds(on), low gate charge and low gate resistance.

■Features

- Vds=-30V
- Id=-8A
- Rds(on) < 22mΩ (Vgs=-10V)
- Rds(on) < 34mΩ (Vgs=-4.5V)

■Maximum absolute ratings

Ta=25°C. Unless otherwise noted.

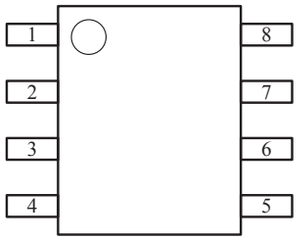
Parameter		Symbol	Limit	Unit	Note
Drain-source voltage		Vds	-30	V	
Gate-source voltage		Vgs	±25	V	
Continuous drain current	Ta=25°C	Id	-8	A	
	Ta=70°C		-6		
Pulsed drain current		Idm	-40	A	3
Avalanche current		Ias	-30	A	
Avalanche energy	L=0.1mH	Eas	45	mJ	
Power dissipation	Tc=25°C	Pd	2.00	W	
	Tc=70°C		1.28		
Junction and storage temperature range		Tj, Tstg	-55 to 150	°C	

■Thermal characteristics

Parameter		Symbol	Typ.	Max.	Unit	Note
Maximum junction-to-ambient		Rθja		62.5	°C/W	

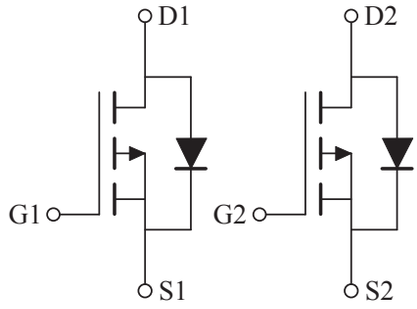
■Pin configuration

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



■Electrical characteristics

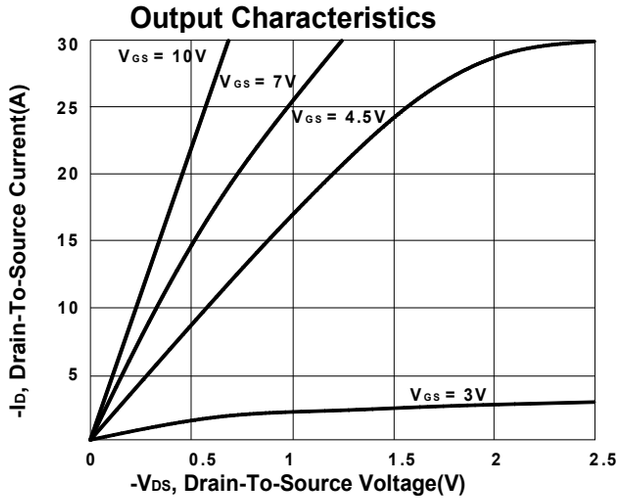
Ta=25°C. Unless otherwise noted.

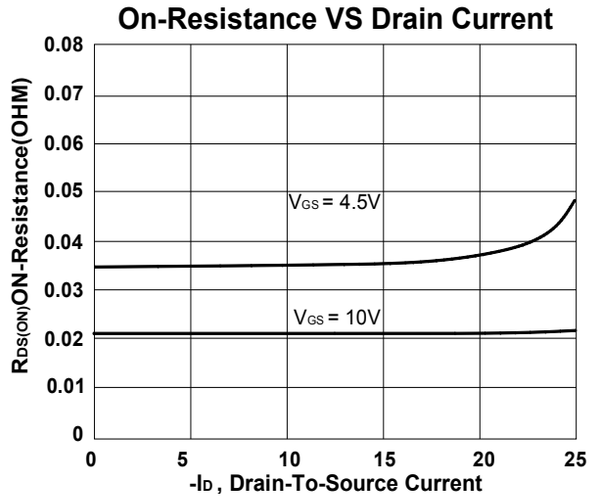
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	Note
STATIC PARAMETERS							
Drain-source breakdown voltage	BVdss	Id=-250μA, Vgs=0V	-30			V	
Zero gate voltage drain current	Idss	Vds=-24V, Vgs=0V			-1	μA	
		Vds=-20V, Vgs=0V, Ta=125°C			-10		
Gate-body leakage current	Igss	Vds=0V, Vgs=±25V			±100	nA	
Gate threshold voltage	Vgs(th)	Vds=Vgs, Id=-250μA	-1.0	-1.5	-3.0	V	
Static drain-source on-resistance	Rds(on)	Vgs=-10V, Id=-9A		20	22	mΩ	1
		Vgs=-4.5V, Id=-7A		29	34		
Forward transconductance	Gfs	Vds=-5V, Id=-9A		20		S	1
Diode forward voltage	Vsd	If=-9A, Vgs=0V			-1	V	1
Max. body-diode continuous curren	Is				-2	A	
DYNAMIC PARAMETERS							
Input capacitance	Ciss	Vgs=0V, Vds=-15V, f=1MHz		1480		pF	
Output capacitance	Coss			334		pF	
Reverse transfer capacitance	Crss			231		pF	
Gate resistance	Rg	Vgs=0V, Vds=0V, f=1MHz		2.9		Ω	
SWITCHING PARAMETERS							
Total gate charge (10V)	Qg	Vgs=-10V, Vds=-15V Id=-9A		30		nC	2
Total gate charge (4.5V)	Qg			15		nC	2
Gate-source charge	Qgs			5		nC	2
Gate-drain charge	Qgd			6		nC	2
Turn-on delay time	td(on)	Vgs=-10V, Vds=-15V Id=-9A, Rgen=6Ω		13		ns	2
Turn-on rise time	tr			8		ns	2
Turn-off delay time	td(off)			16		ns	2
Turn-off fall time	tf			12		ns	2
Body diode reverse recovery time	trr	If=-9A, dIf/dt=100A/μs		40		ns	
Body diode reverse recovery charge	Qrr	If=-9A, dIf/dt=100A/μs		26		nC	

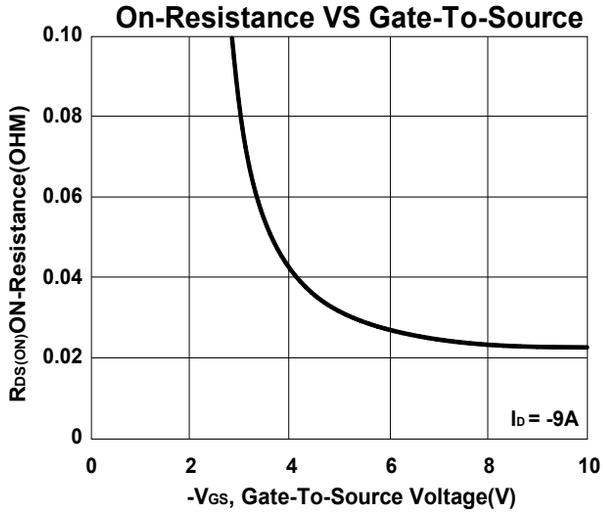
NOTE :

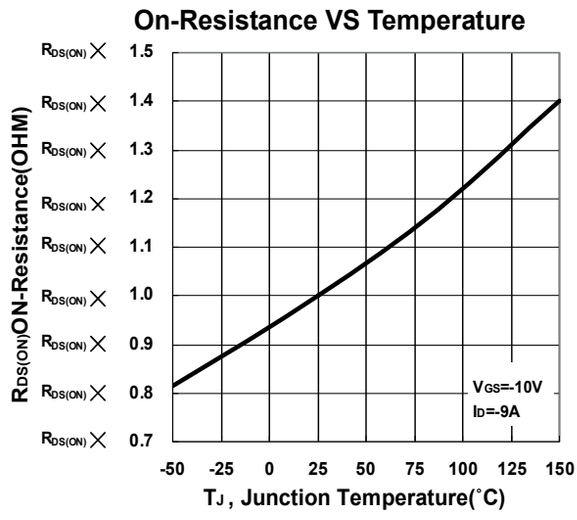
1. Pulsed width≤300μsec and Duty cycle≤2%.
2. Independent of operating temperature.
3. Pulsed width limited by maximum junction temperature.
4. Duty cycle ≤ 1%.

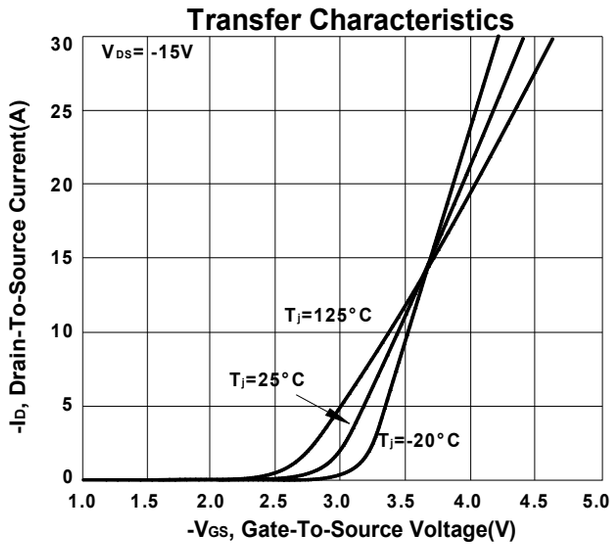
■Typical electrical and thermal characteristics

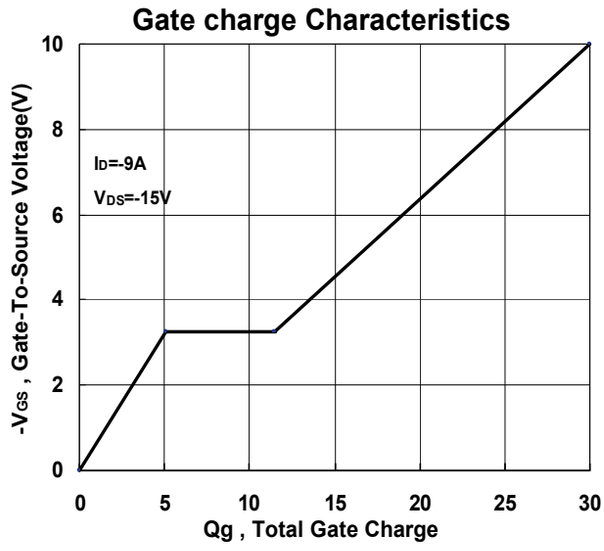




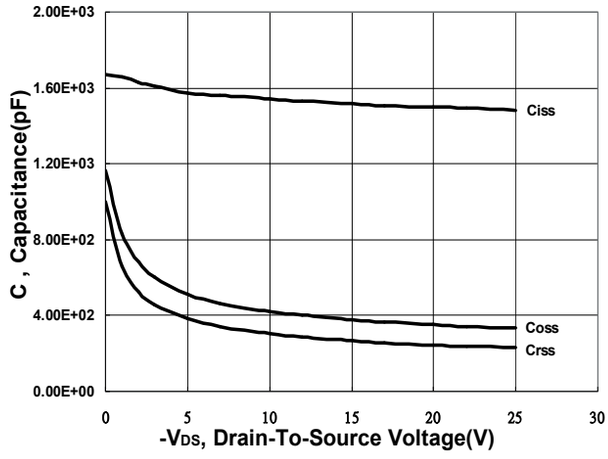




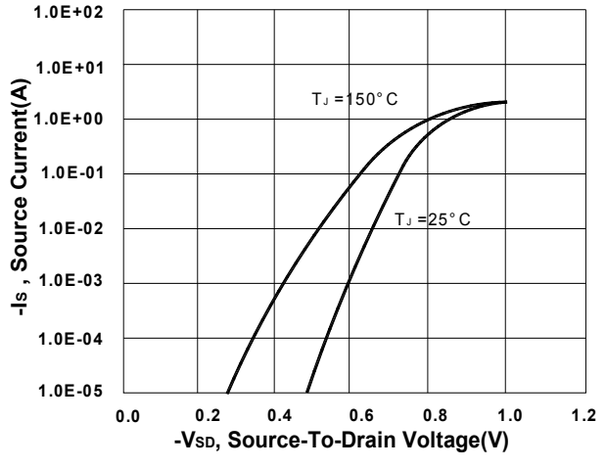




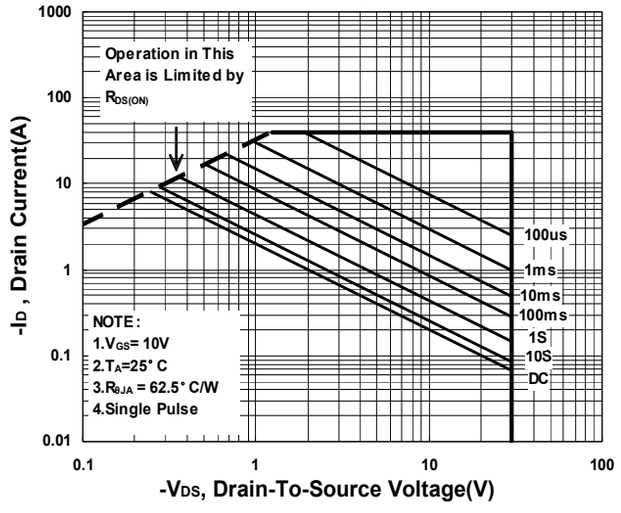
Capacitance Characteristic



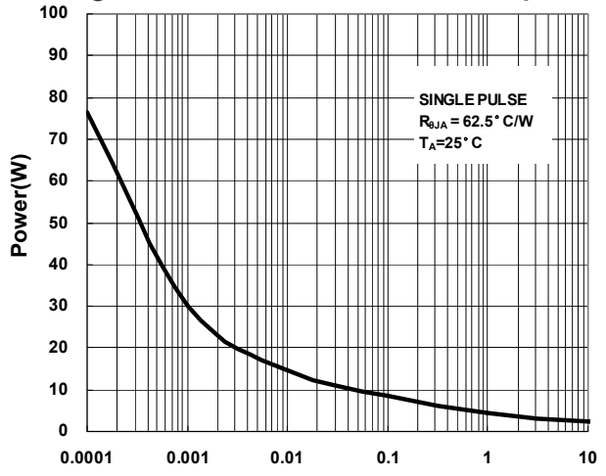
Body Diode Forward Voltage VS Source current



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve