Single N-channel MOSFET

ELM32426LA-S

■General description

ELM32426LA-S uses advanced trench technology to provide excellent Rds(on), low gate charge and low gate resistance.

■Features

- Vds=25V
- Id=75A
- Rds(on) < 4mΩ (Vgs=10V)
- Rds(on) < 6mΩ (Vgs=4.5V)

■Maximum absolute ratings

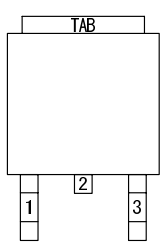
Parameter		Symbol	Limit	Unit	Note
Gate-source voltage		Vgs	±20	V	
Continuous drain current	Ta=25℃	Id	75	A	
	Ta=100℃		50		
Pulsed drain current		Idm	200	A	3
Avalanche current		Iar	45	A	
Avalanche energy	L=0.1mH	Eas	100	mJ	
Power dissipation	Ta=25℃	Pd	96.00	W	
	Ta=100℃		32.75		
Junction and storage temperature range		Tj, Tstg	-55 to 150	℃	

■Thermal characteristics

Parameter		Symbol	Typ.	Max.	Unit	Note
Maximum junction-to-case	Steady-state	Rθjc		1.3	℃/W	
Maximum junction-to-ambient	Steady-state	Rθja		75.0	℃/W	

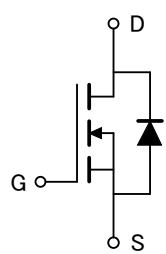
■Pin configuration

TO-252-3 (TOP VIEW)



Pin No.	Pin name
1	GATE
2	DRAIN
3	SOURCE

■Circuit



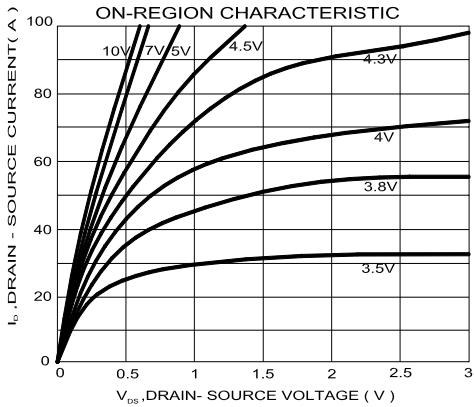
■Electrical characteristics

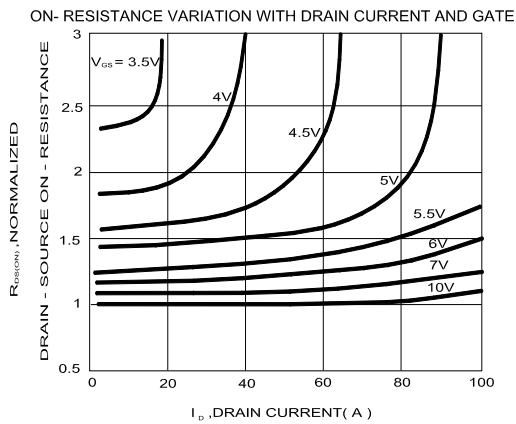
Ta=25℃

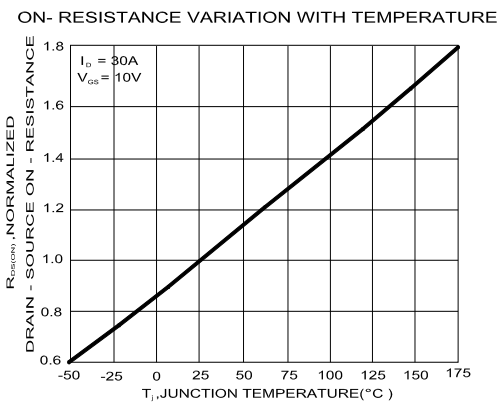
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	Note
STATIC PARAMETERS							
Drain-source breakdown voltage	BVdss	Id=250μA, Vgs=0V	25			V	
Zero gate voltage drain current	Idss	Vds=25V, Vgs=0V			1	μA	
		Vds=20V, Vgs=0V, Tj=125℃			25		
Gate-body leakage current	Igss	Vds=0V, Vgs=±20V			±100	nA	
Gate threshold voltage	Vgs(th)	Vds=Vgs, Id=250μA	1.0	1.5	3.0	V	
Static drain-source on-resistance	Rds(on)	Vgs=10V, Id=45A		3.5	4.0	mΩ	1
		Vgs=4.5V, Id=30A		4.8	6.0	mΩ	
Forward transconductance	Gfs	Vds=15V, Id=30A		56		S	1
Diode forward voltage	Vsd	If=45A, Vgs=0V			1.3	V	1
Max. body-diode continuous current	Is				75	A	
Pulsed body-diode current	Ism				200	A	3
DYNAMIC PARAMETERS							
Input capacitance	Ciss	Vgs=0V, Vds=15V, f=1MHz		4018		pF	
Output capacitance	Coss			1560		pF	
Reverse transfer capacitance	Crss			420		pF	
SWITCHING PARAMETERS							
Total gate charge	Qg	Vgs=10V, Vds=10V, Id=40A		42.0		nC	2
Gate-source charge	Qgs			15.0		nC	2
Gate-drain charge	Qgd			22.5		nC	2
Turn-on delay time	td(on)	Vgs=10V, Vds=15V, Id≅30A Rgen=2.7Ω		16.5		ns	2
Turn-on rise time	tr			19.0		ns	2
Turn-off delay time	td(off)			48.0		ns	2
Turn-off fall time	tf			28.0		ns	2
Body diode reverse recovery time	trr	If=45A, dI/dt=100A/μs		30		ns	
Peak reverse recovery current	Irm(rec)			200		A	
Body diode reverse recovery charge	Qrr			14		nC	

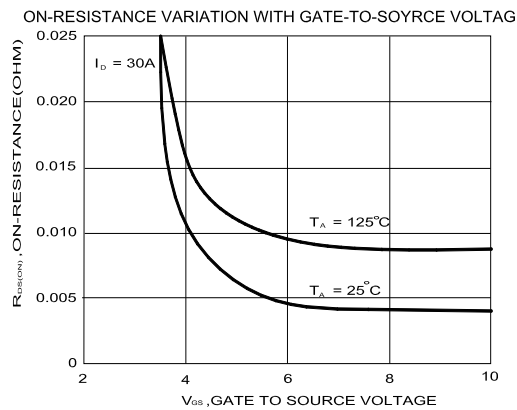
NOTE :
1. Pulse test : Pulsed width ≤ 300μsec and Duty cycle ≤ 2%.
2. Independent of operating temperature.
3. Pulsed width limited by maximum junction temperature.
4. Duty cycle ≤ 1%.

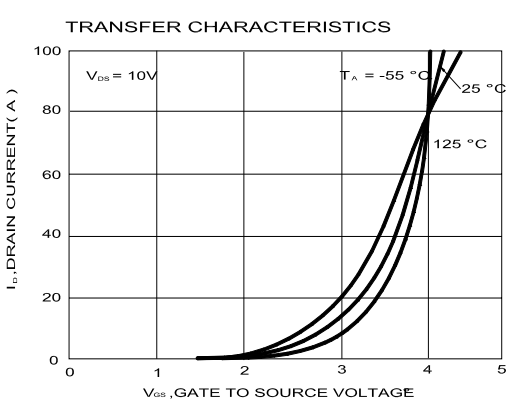
■Typical electrical and thermal characteristics

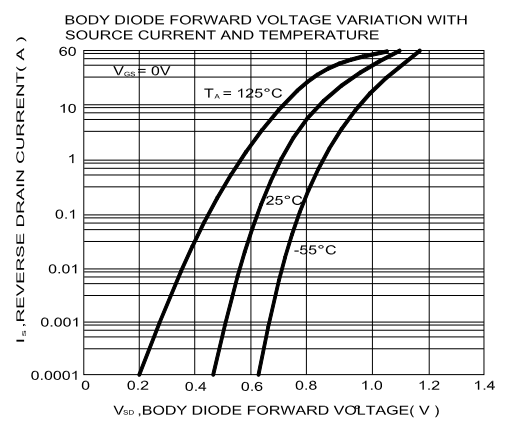




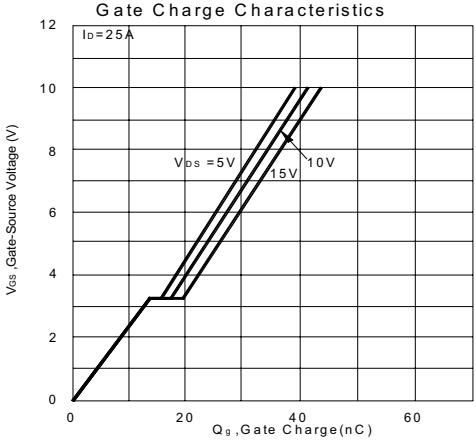




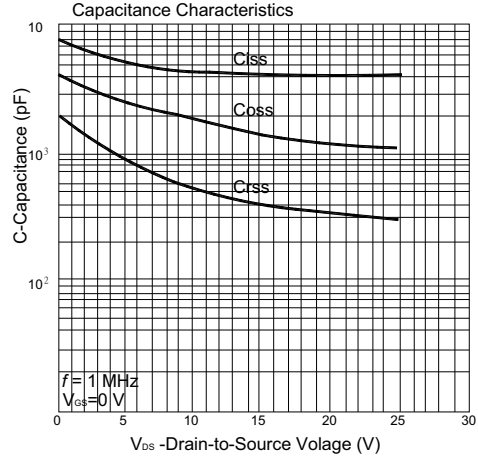




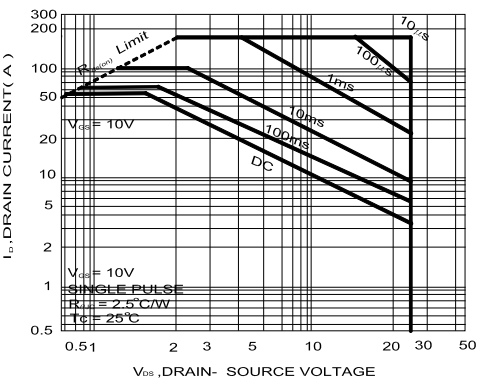
Gate Charge Characteristics



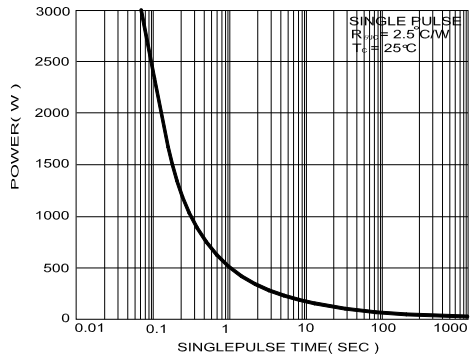
Capacitance Characteristics



MAXIMUMSAFE OPERATINGAREA



SINGLEPULSE MAXIMUM POWER DISSIPATION



Transient Thermal Response Curve