P19LA10SL

Power MOSFETs
100V, 19A, N-channel

Feature

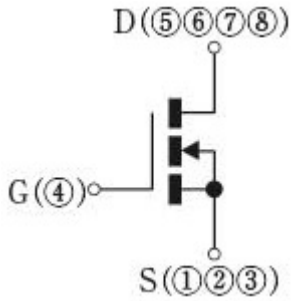
- N-channel
- Small SMD
- Low Ron
- 4.5V Gate Drive
- Low Capacitance
- Halogen free
- Pb free terminal
- RoHS:Yes

OUTLINE

Package (House Name): LA



Equivalent circuit



Absolute Maximum Ratings (unless otherwise specified : Tc=25℃)

Item	Symbol	Conditions	Ratings	Unit
Storage temperature	Tstg		-55 to 150	℃
Channel tempertature	Tch		-55 to 150	℃
Drain-source voltage	V_{DSS}		100	V
Gate-source voltage	V_{GSS}		±20	V
Continuous drain current(DC)	I_D		19	A
Continuous drain current(Peak)	I_{DP}	Pulse width 10μs, duty=1/100	57	A
Total power dissipation	P_T		83	W
Single avalanche current	I_{AS}	Starting Tch=25℃ Tch≦150℃	18	A
Single avalanche energy	E_{AS}	Starting Tch=25℃ Tch≦150℃	37	mJ

※ :See the original Specifications

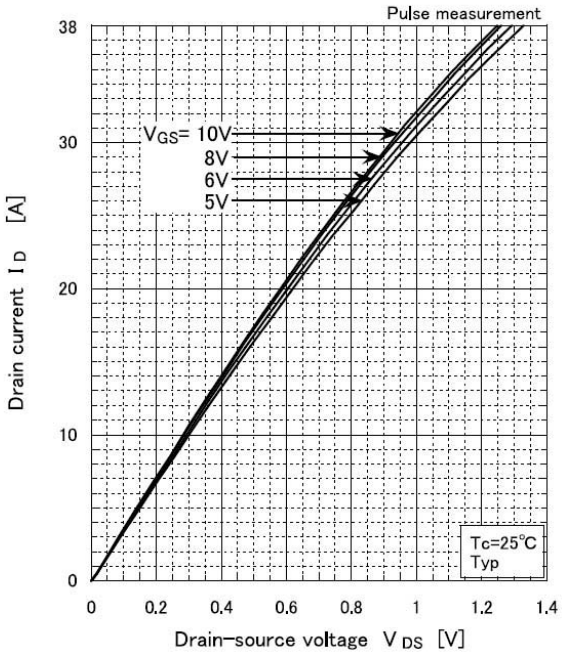
Electrical Characteristics (unless otherwise specified : Tc=25°C)

Item	Symbol	Conditions	Ratings			Unit
			MIN	TYP	MAX	
Drain-Source breakdown voltage	$V_{(BR)DSS}$	ID=1mA, VGS=0V	100			V
Zero gate voltage drain current	I_{DSS}	VDS=100V, VGS=0V			1	μA
Gate-source leakage current	I_{GSS}	VGS=±20V, VDS=0V			±0.1	μA
Forward transconductance	g_{fs}	ID=9.5A, VDS=10V	8			S
Static drain-source on-state resistance	$R_{DS(ON)}$	ID=9.5A, VGS=10V		0.028	0.035	Ω
Static drain-source on-state resistance	$R_{DS(ON)}$	ID=9.5A, VGS=4.5V		0.031	0.042	Ω
Gate threshold voltage	Vth	ID=1mA, VDS=10V	1.5	2	2.5	V
Source-drain diode forward voltage	V_{SD}	IS=19A, VGS=0V			1.5	V
Thermal resistance	Rth(j-c)	Junction to case, with heatsink			1.5	°C/W
Total gate charge	Qg	VDD=80V, VGS=10V, ID=19A		38		nC
Gate to source charge	Qgs	VDD=80V, VGS=10V, ID=19A		7.2		nC
Gate to drain charge	Qgd	VDD=80V, VGS=10V, ID=19A		9.8		nC
Input capacitance	Ciss	VDS=25V, VGS=0V, f=1MHz		1730		pF
Reverce transfer capacitnce	Crss	VDS=25V, VGS=0V, f=1MHz		67		pF
Output capacitance	Coss	VDS=25V, VGS=0V, f=1MHz		134		pF
Turn-on delay time	td(on)	ID=9.5A, RL=5.3Ω, VDD=50V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		4		ns
Rise time	tr	ID=9.5A, RL=5.3Ω, VDD=50V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		6		ns
Turn-off delay time	td(off)	ID=9.5A, RL=5.3Ω, VDD=50V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		21		ns
Fall time	tf	ID=9.5A, RL=5.3Ω, VDD=50V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		3.5		ns
Diode reverse recovery time	trr	IF=19A, VGS=0V, di/dt=100A/μs		52		ns
Diode reverse recovery charge	Qrr	IF=19A, VGS=0V, di/dt=100A/μs		93		nC

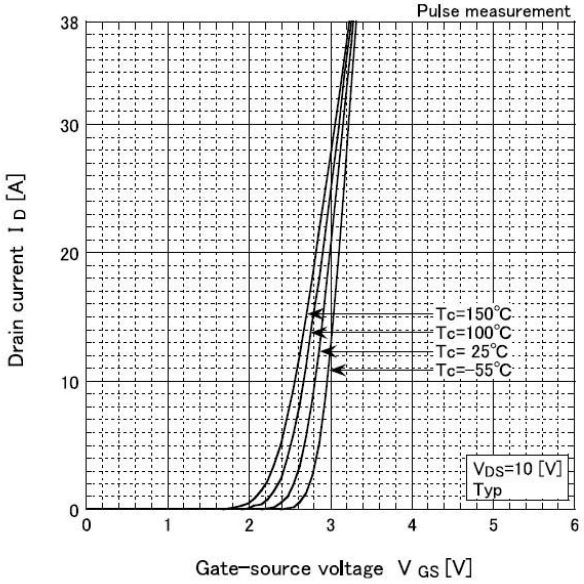
※ ：See the original Specifications

CHARACTERISTIC DIAGRAMS

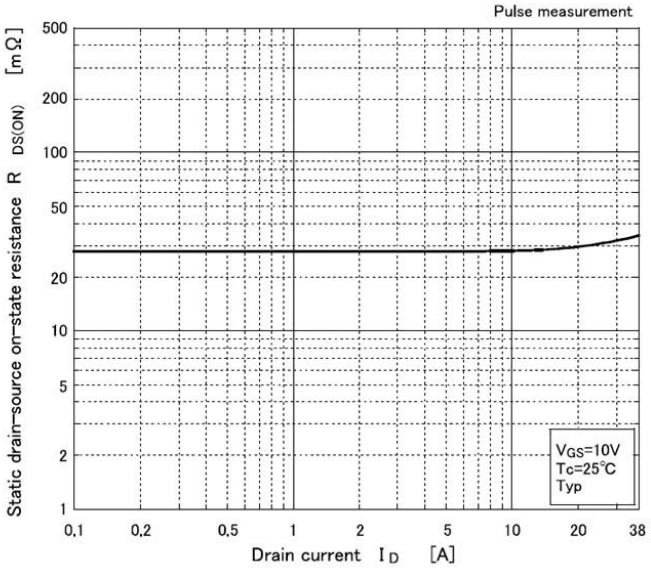
Typical output characteristics



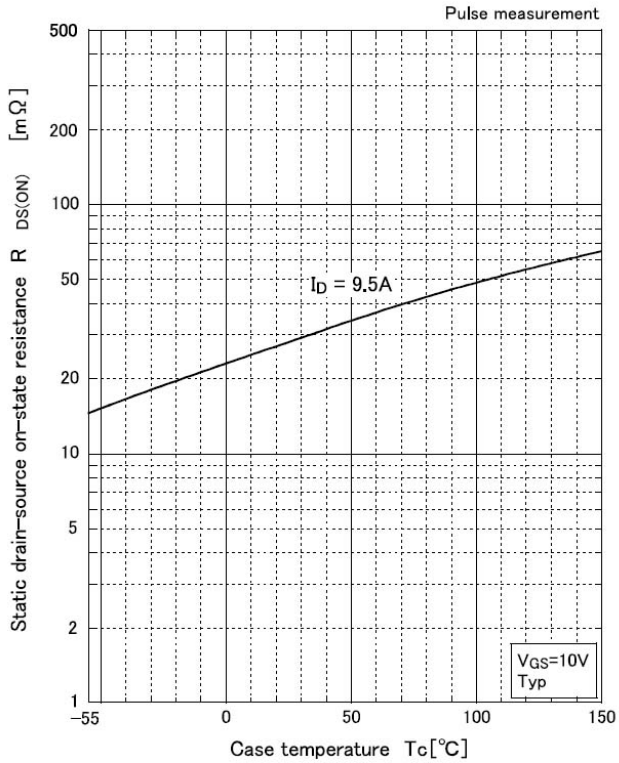
Transfer characteristics



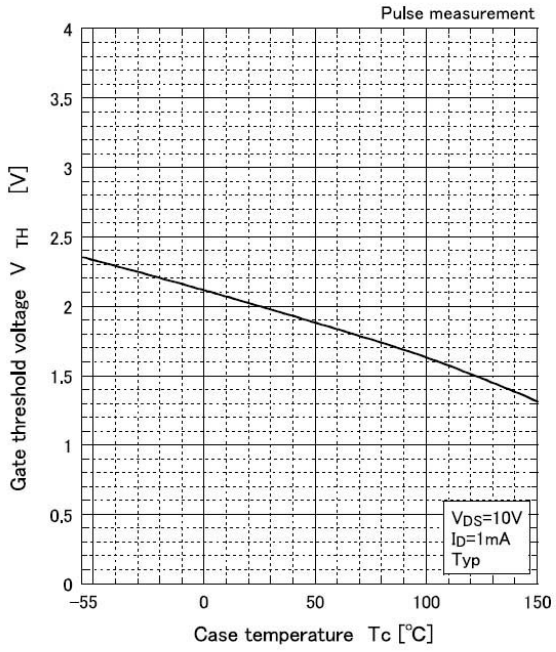
Static drain–source on–state resistance vs drain current



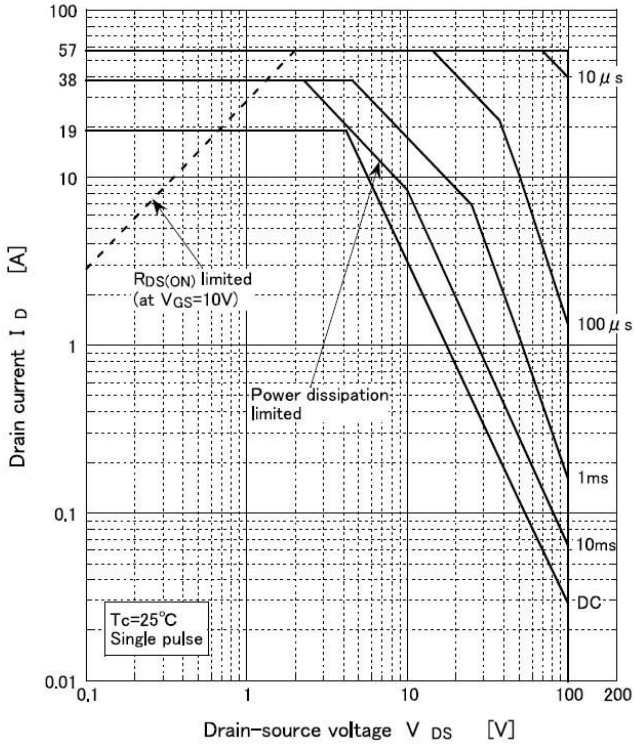
Static drain–source on–state resistance vs case temperature

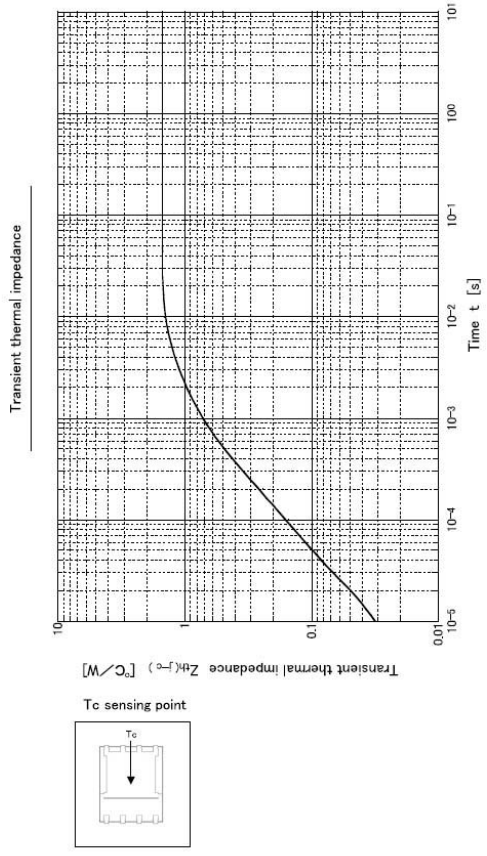


Gate threshold voltage
vs case temperature

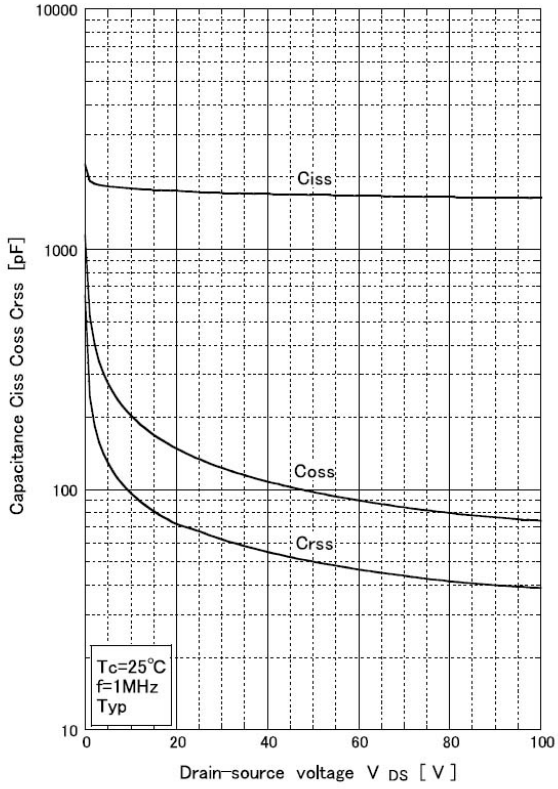


Safe operating area

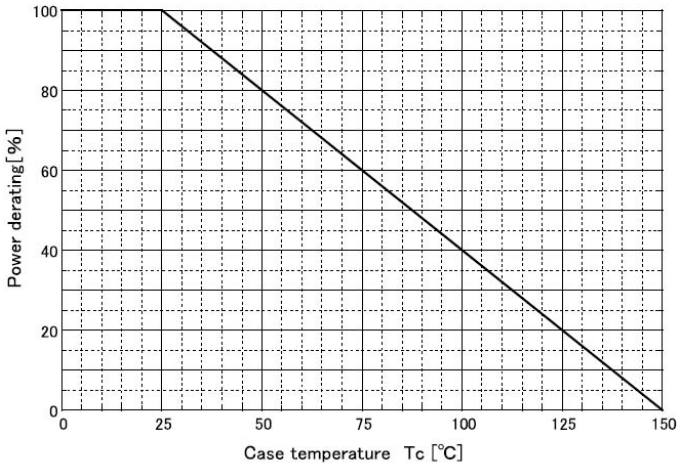




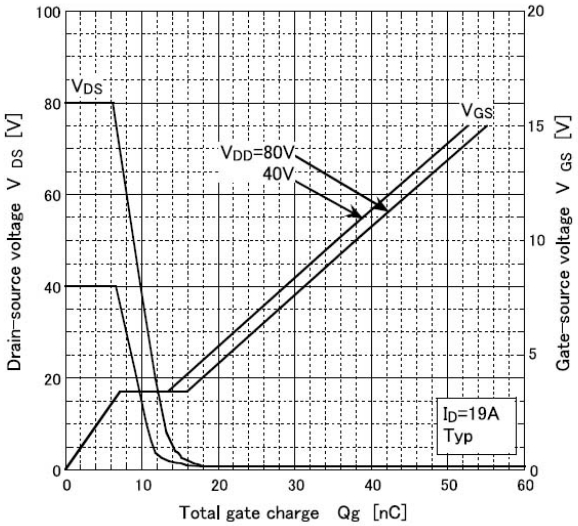
Capacitance characteristics



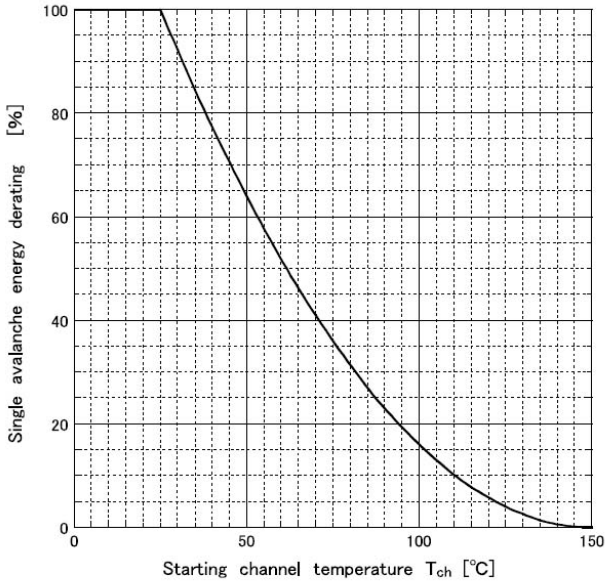
Power derating – case temperature



Gate charge characteristics



Single avalanche energy derating
vs channel temperature



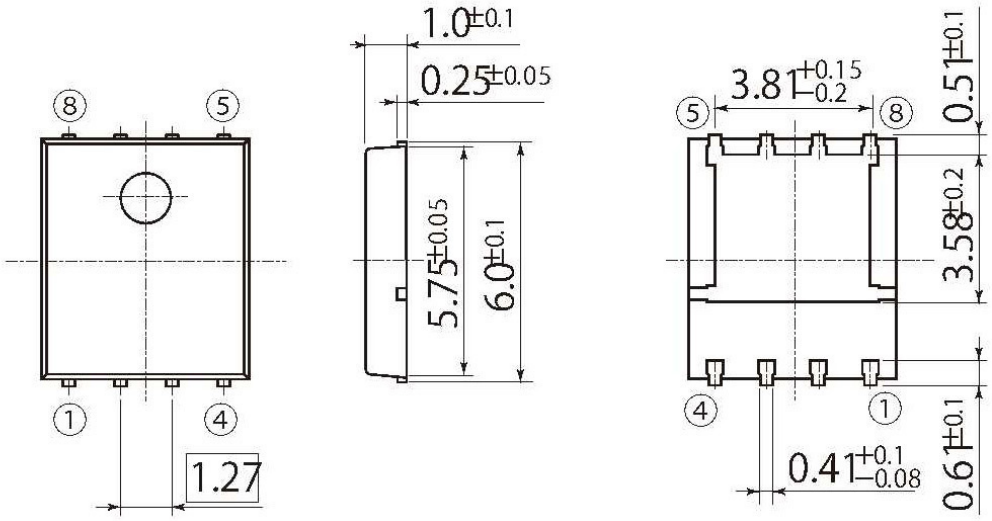
Outline Dimensions

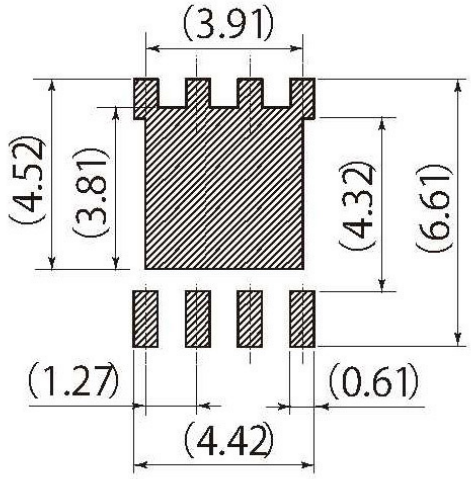
unit:mm

scale: 5/1

G6

JEDEC Code	–
JEITA Code	–
House Name	LA





Referential Soldering Pad

• Optimize soldering pad to the board design and soldering condition.

Notes

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