

# P23LA10SL

## Power MOSFETs

100V, 23A, N-channel

### Feature

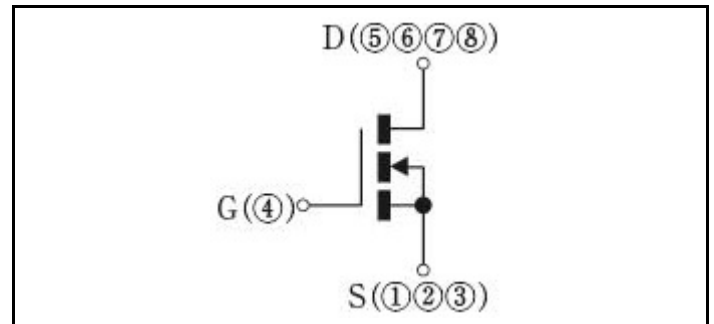
- N-channel
- Small SMD
- Low Ron
- 4.5V Gate Drive
- Low Capacitance
- Halogen free
- Pb free terminal
- RoHS:Yes

### OUTLINE

Package (House Name): LA



### Equivalent circuit



### Absolute Maximum Ratings (unless otherwise specified : Tc=25°C)

Item	Symbol	Conditions	Ratings	Unit
Storage temperature	Tstg		-55 to 150	°C
Channel temperature	Tch		-55 to 150	°C
Drain-source voltage	V <sub>DSS</sub>		100	V
Gate-source voltage	V <sub>GSS</sub>		±20	V
Continuous drain current(DC)	I <sub>D</sub>		23	A
Continuous drain current(Peak)	I <sub>DP</sub>	Pulse width 10μs, duty=1/100	69	A
Total power dissipation	P <sub>T</sub>		99	W
Single avalanche current	I <sub>AS</sub>	Starting Tch=25°C Tch≤150°C	20	A
Single avalanche energy	E <sub>AS</sub>	Starting Tch=25°C Tch≤150°C	48	mJ

※ :See the original Specifications

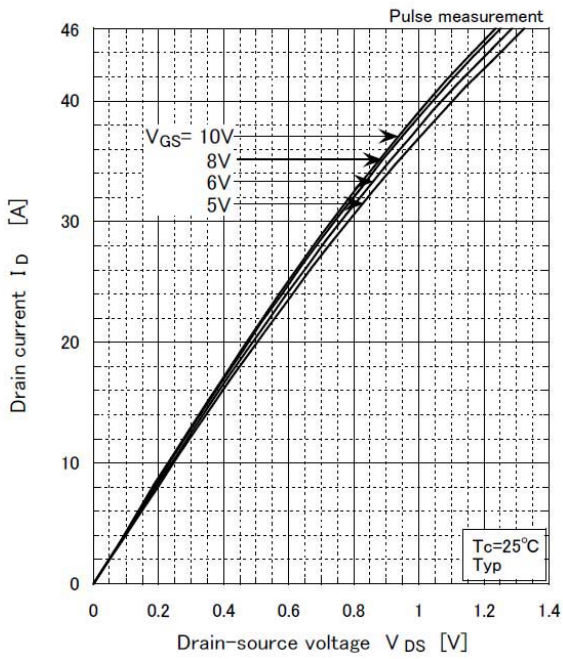
**Electrical Characteristics** (unless otherwise specified : Tc=25°C)

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=11.5A, VDS=10V	9			S
Static drain-source on-state resistance	$R_{DS(ON)}$	ID=11.5A, VGS=10V		0.023	0.029	Ω
Static drain-source on-state resistance	$R_{DS(ON)}$	ID=11.5A, VGS=4.5V		0.025	0.034	Ω
Gate threshold voltage	$V_{th}$	ID=1mA, VDS=10V	1.5	2	2.5	V
Source-drain diode forward voltage	$V_{SD}$	IS=23A, VGS=0V			1.5	V
Thermal resistance	$R_{th(j-c)}$	Junction to case, with heatsink			1.26	°C/W
Total gate charge	$Q_g$	VDD=80V, VGS=10V, ID=23A		46		nC
Gate to source charge	$Q_{gs}$	VDD=80V, VGS=10V, ID=23A		8.5		nC
Gate to drain charge	$Q_{gd}$	VDD=80V, VGS=10V, ID=23A		12.5		nC
Input capacitance	$C_{iss}$	VDS=25V, VGS=0V, f=1MHz		2080		pF
Reverse transfer capacitance	$C_{rss}$	VDS=25V, VGS=0V, f=1MHz		83		pF
Output capacitance	$C_{oss}$	VDS=25V, VGS=0V, f=1MHz		159		pF
Turn-on delay time	$t_{d(on)}$	ID=11.5A, RL=4.3Ω, VDD=50V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		4.5		ns
Rise time	$t_r$	ID=11.5A, RL=4.3Ω, VDD=50V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		7.4		ns
Turn-off delay time	$t_{d(off)}$	ID=11.5A, RL=4.3Ω, VDD=50V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		31		ns
Fall time	$t_f$	ID=11.5A, RL=4.3Ω, VDD=50V, Rg=0Ω, VGS(+)=10V, VGS(-)=0V		10		ns
Diode reverse recovery time	$t_{rr}$	IF=23A, VGS=0V, di/dt=100A/μs		51		ns
Diode reverse recovery charge	$Q_{rr}$	IF=23A, VGS=0V, di/dt=100A/μs		90		nC

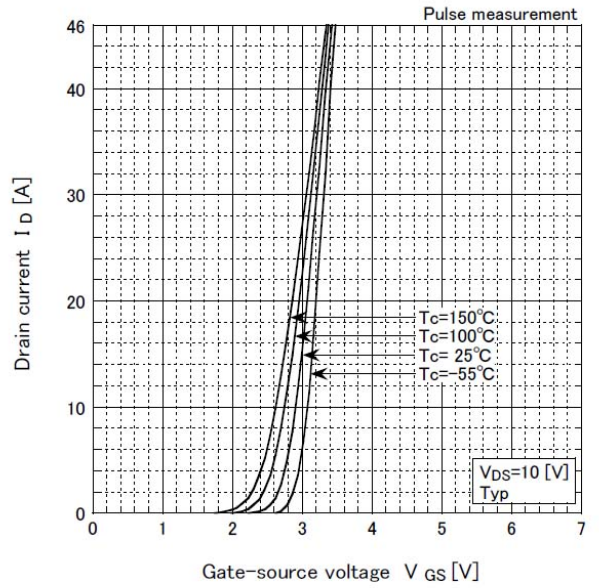
\* : See the original Specifications

# CHARACTERISTIC DIAGRAMS

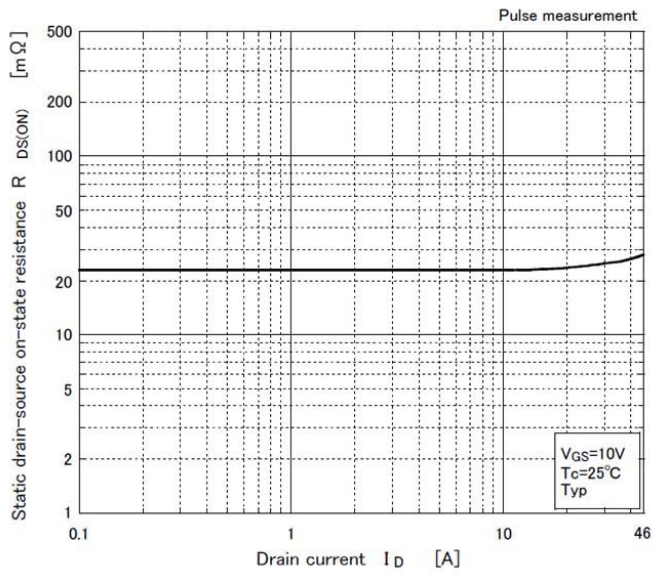
Typical output characteristics



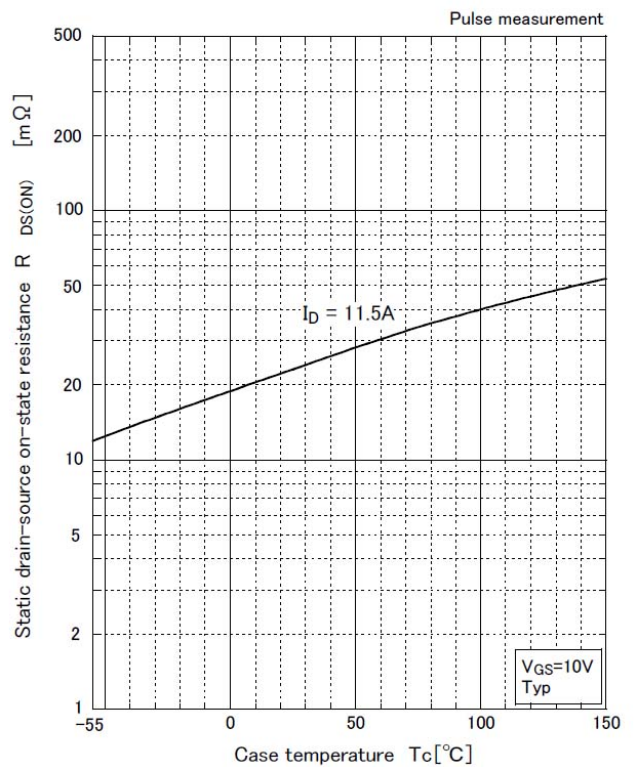
Transfer characteristics

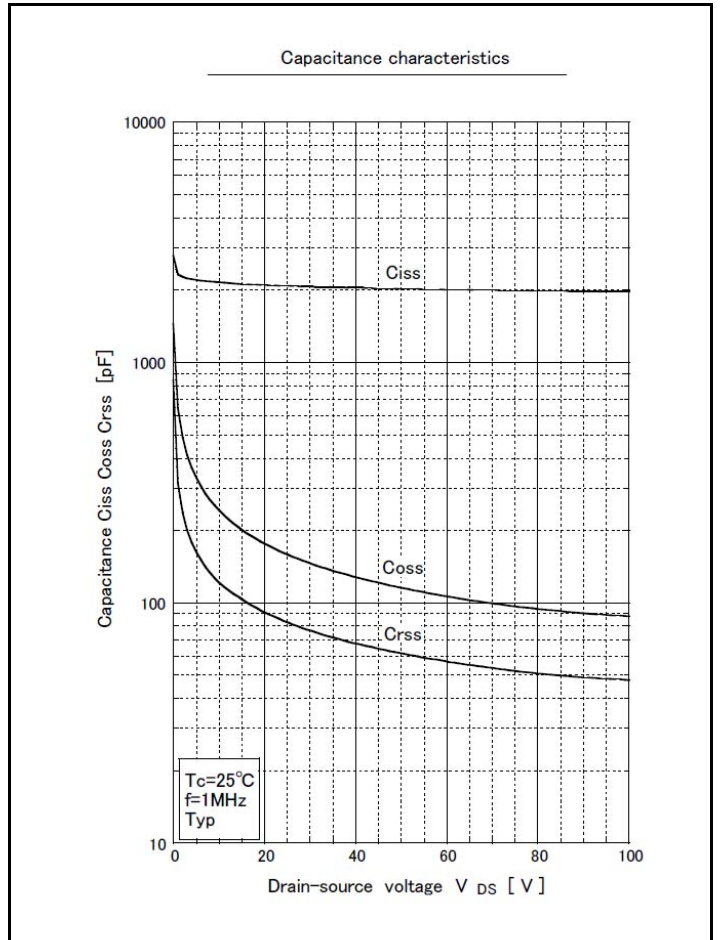
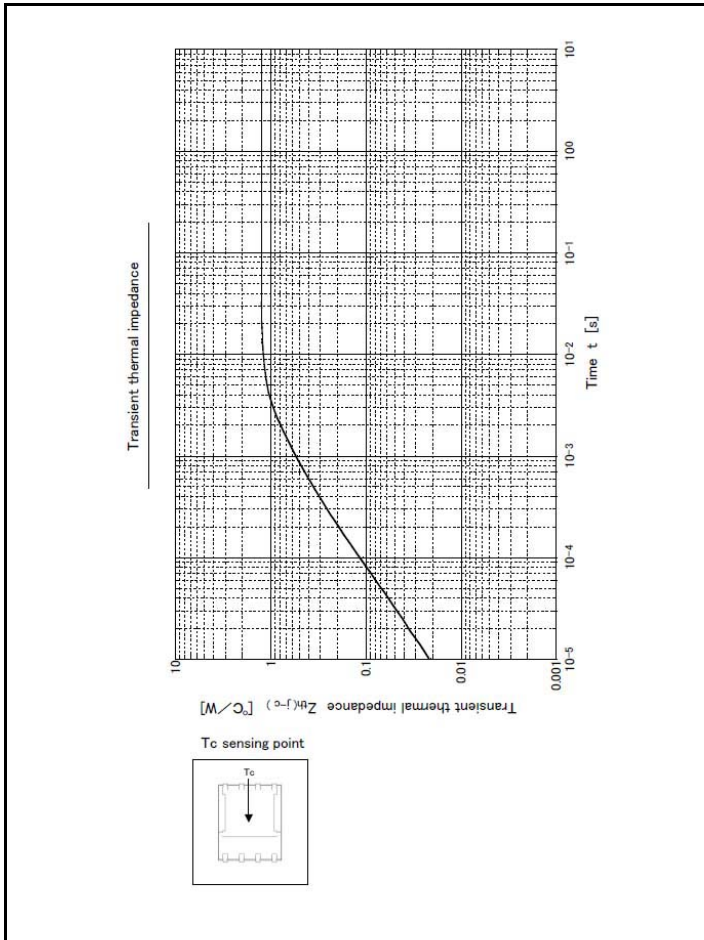
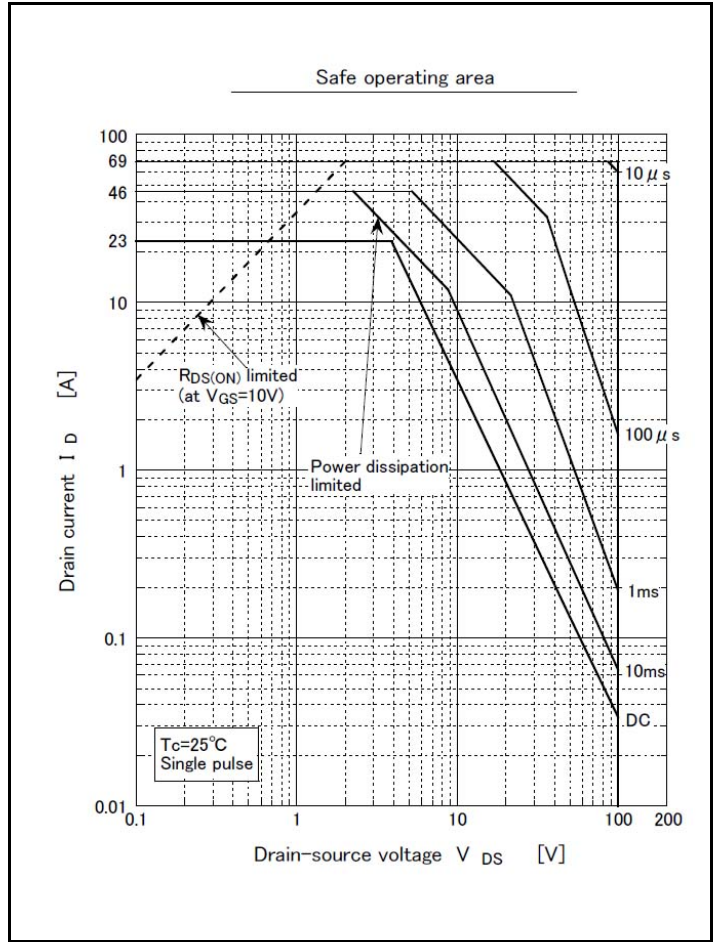
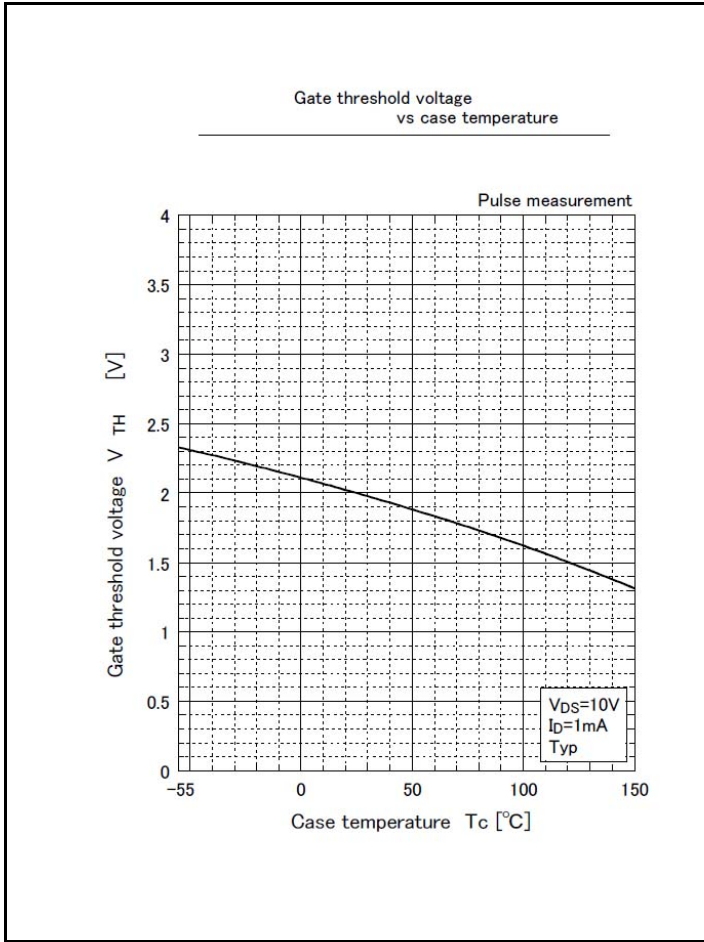


Static drain-source on-state resistance vs drain current



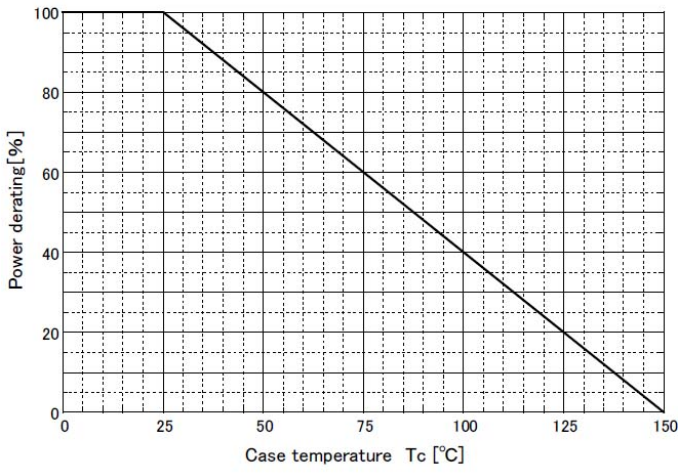
Static drain-source on-state resistance vs case temperature



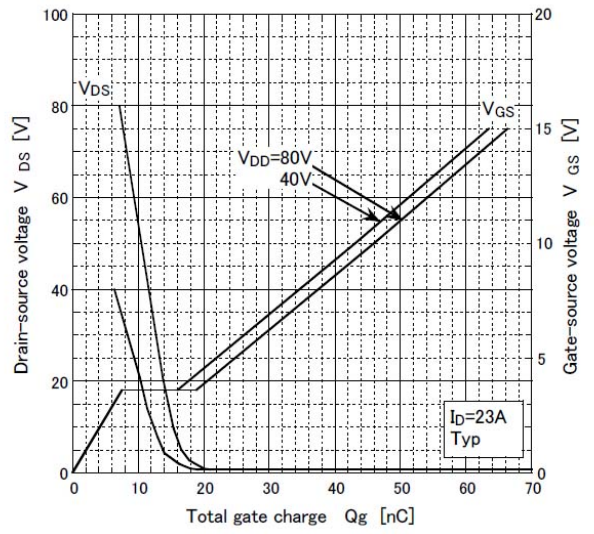




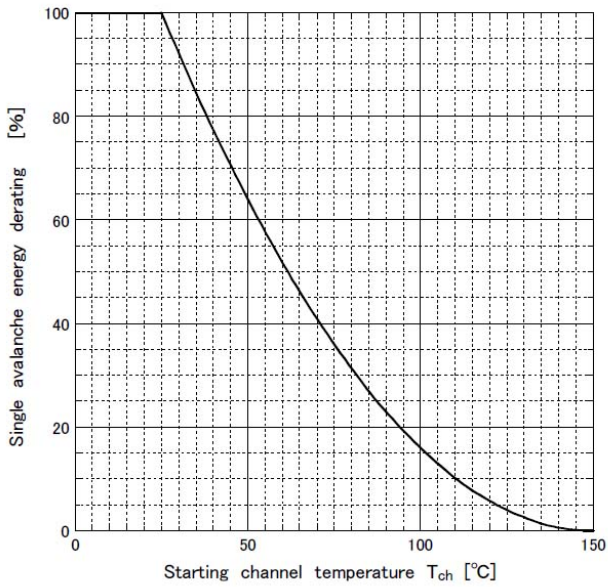
Power derating - case temperature



Gate charge characteristics



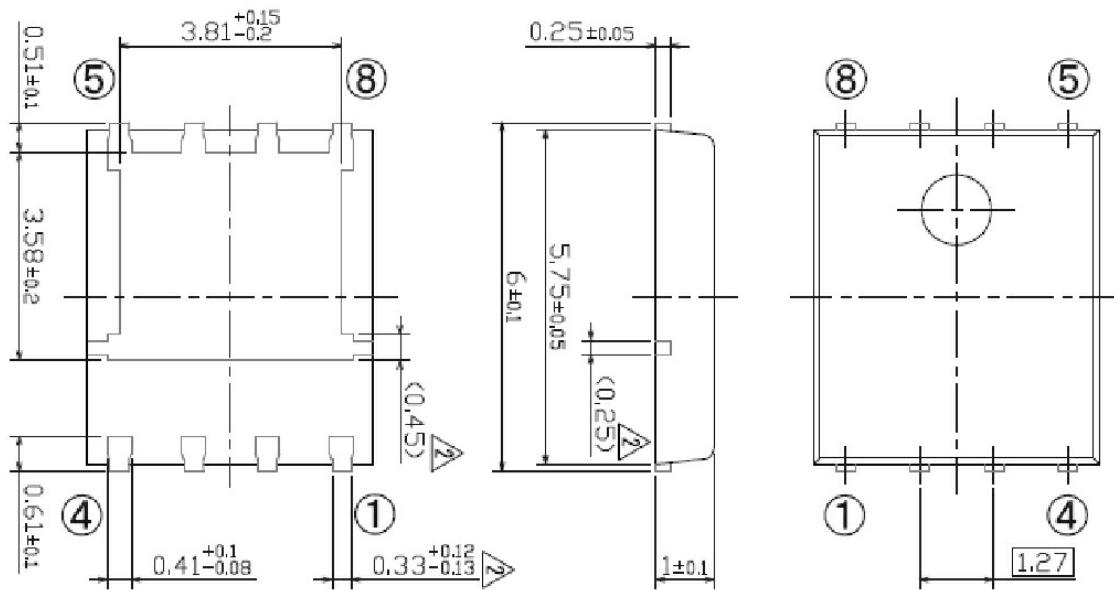
Single avalanche energy derating vs channel temperature



# Outline Dimensions

unit:mm

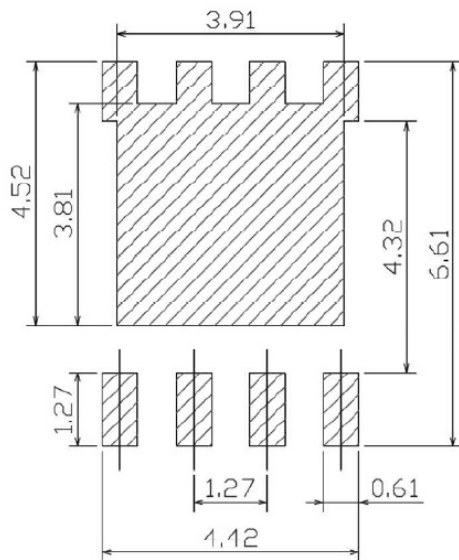
UNIT: mm



2. 端子配置 Lead Assignment

MOS-FET  
 ①②③ : Source  
 ④ : Gate  
 ⑤⑥⑦⑧ : Drain

3. 製品質量: 0.09g(標準)  
 Package Weight: 0.09g(typ)



## Notes

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