FEATURE:
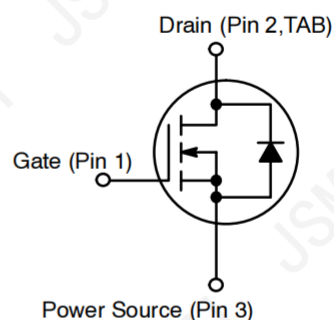
- Rugged and Relaible
- High density cell design for extremely low RDS(on)
- Surface Mount Package
- Voltage Controlled Small Signal Switch

APPLICATION:

- Small Servo Motor Controls
- Power MOSFET Gate Drivers
- Switching Application

Drain (Pin 2,TAB)

Gate (Pin 1)

Power Source (Pin 3)

Mosfet Maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	100	V
Gate-Source Voltage	VGS	±20	
Continuous Drain Current	ID	0.19	A
Pulsed Drain Current (tp=10us)	IDM	0.75	A
Continuous Source-Drain Current(Diode Conduction)	IS	0.19	A
Power Dissipation	PD	0.35	W
Thermal Resistance from Junction to Ambient	RθJA	556	℃/W
Junction Temperature	TJ	150	℃
Storage Temperature	TSTG	-55~+150	℃
Lead Temperature for Soldering Purposes(1/8 from case for	TL	260	℃

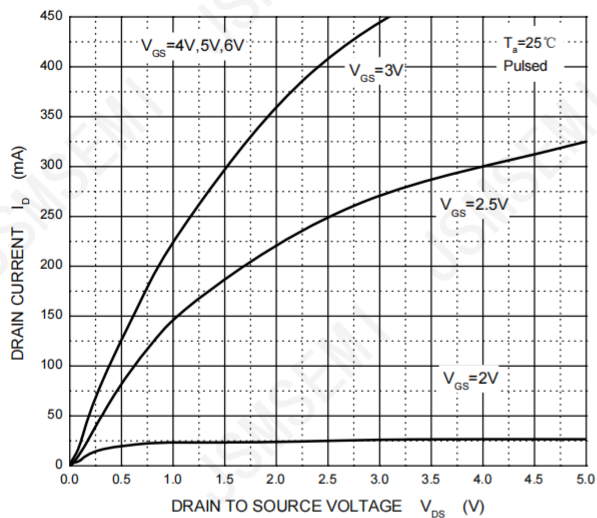## MOSFET ELECTRICAL CHARACTERISTICS unless otherwise specified Ta = 25 ℃

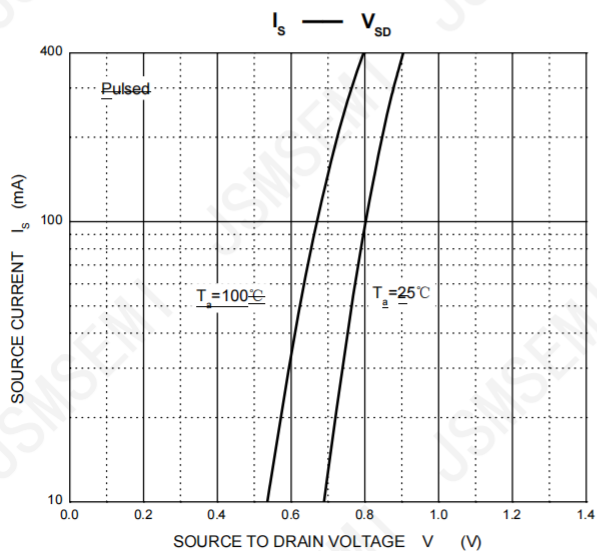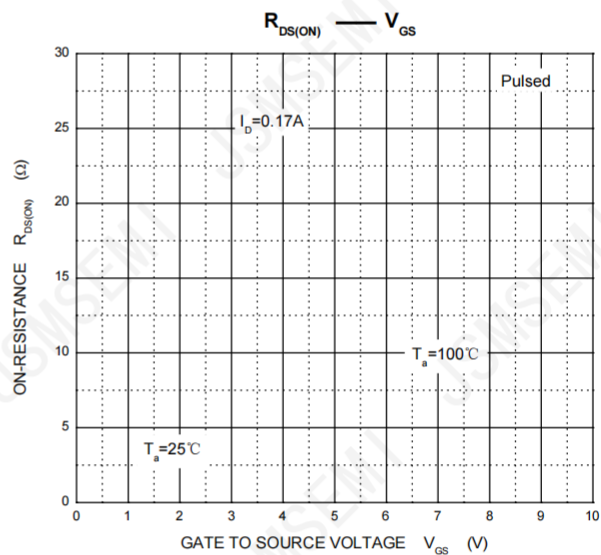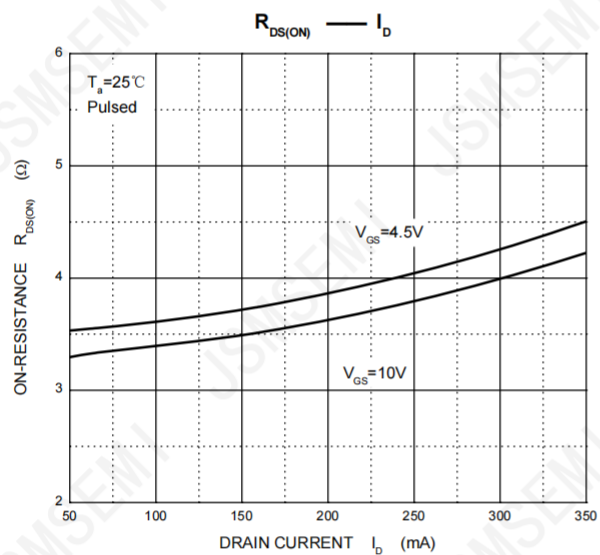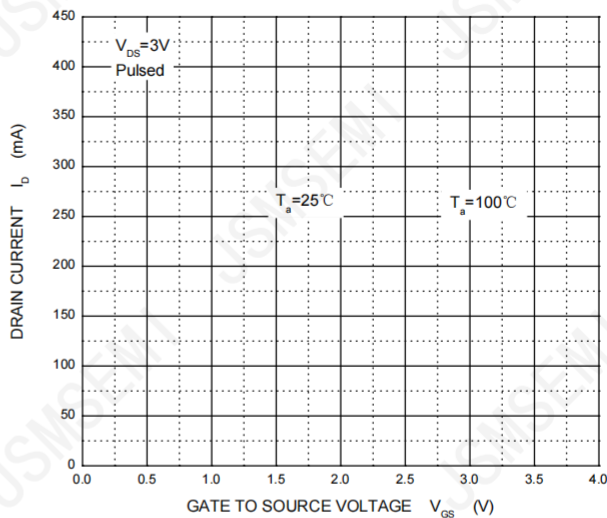| Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID =250μA	100			V
Gate-threshold voltage	VGS(th)	VDS =VGS, ID =250μA	1		2.8	V
Gate-body leakage	IGSS	VDS =0V, VGS =±20V			±100	nA
Zero gate voltage drain current	IDSS	VDS =100V, VGS =0V			1	μA
Drain-source on-resistancea	RDS(on)	VGS = 10V, ID = 0.17A		3.8	6	Ω
		VGS =4.5V, ID =0.17A		3.5	10	Ω
Forward transconductancea	gfs	VDS =10V, ID =170mA	80			mS
Diode forward voltage	VSD	IS=0.17A,VGS=0V		0.8	1.3	V
Dynamic Characteristics						
Input capacitance	Ciss			29		pF
Output capacitance	Coss	VDS =25V,VGS =0V, f=1MHz		10		pF
Reverse transfer capacitanceb	Crss			2		pF
Switchingb Characteristics						
Turn-on delay time	td(on)				8	ns
Rise time	tr	VGS=10V, VDD=30V ID =0.17A, RGEN=50Ω			8	ns
Turn-off delay time	td(off)				13	ns
Fall time	tf				16	ns
Total Gate Charge	Qg				2	nC
Gate-Source Charge	Qgs	VDS=10V, ID=0.17A, VGS=10V			0.25	nC
Gate-Drain Charge	Qgd				0.4	nC

Note :

1. Surface mounted on FR4 board using the minimum recommended pad size.

2. Pulse Test ; Pulse Width =300μs, Duty Cycle ≤2%.

3. Switching characteristics are independent of operating junction temperature.

4. Graranted by design，not subject to producting.
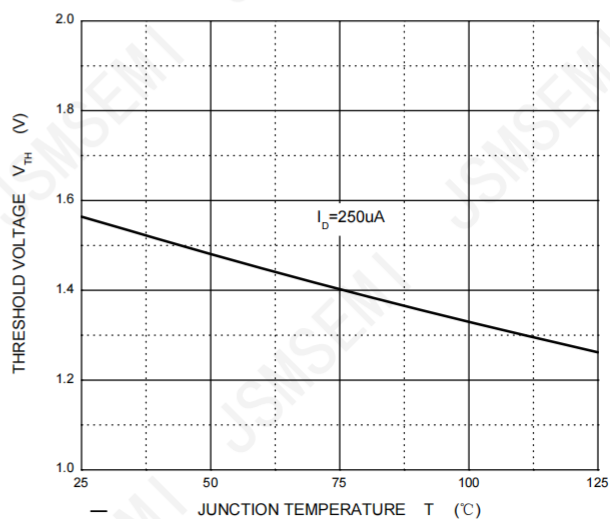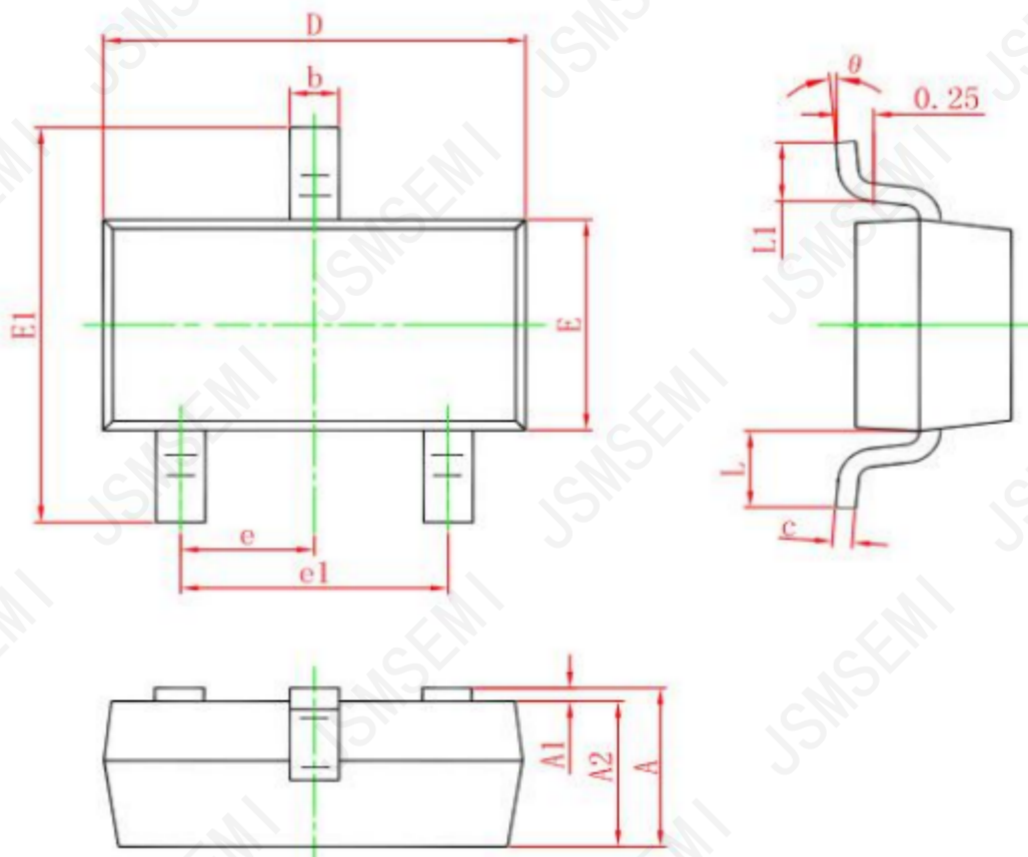
Typical Characteristics

Output Characteristics

V_{GS}=4V,5V,6V

V_{GS}=3V

T_a=25℃
Pulsed

V_{GS}=2.5V

V_{GS}=2V

DRAIN CURRENT I_D (mA)

DRAIN TO SOURCE VOLTAGE V_{DS} (V)

Transfer Characteristics

V_{DS}=3V
Pulsed

T_a=25℃ T_a=100℃

DRAIN CURRENT I_D (mA)

GATE TO SOURCE VOLTAGE V_{GS} (V)

$R_{DS(ON)}$ — I_D

T_a=25℃
Pulsed

V_{GS}=4.5V

V_{GS}=10V

ON-RESISTANCE $R_{DS(ON)}$ (Ω)

DRAIN CURRENT I_D (mA)

$R_{DS(ON)}$ — V_{GS}

Pulsed

I_D=0.17A

T_a=100℃

T_a=25℃

ON-RESISTANCE $R_{DS(ON)}$ (Ω)

GATE TO SOURCE VOLTAGE V_{GS} (V)

I_S — V_{SD}

Pulsed

T_a=100℃ T_a=25℃

SOURCE CURRENT I_S (mA)

SOURCE TO DRAIN VOLTAGE V (V)

Threshold Voltage

I_D=250uA

THRESHOLD VOLTAGE V_{TH} (V)

JUNCTION TEMPERATURE T (℃)

SOT-23 PACKAGE OUTLINE DIMENSIONS

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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