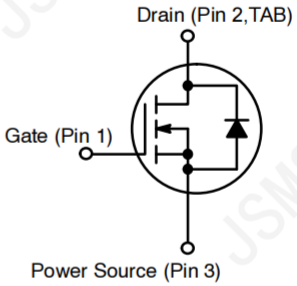
Features

- ◆Low on-resistance
- ◆High-speed switching
- ◆Drive circuits can be simple
- ◆Parallel use is easy

Typical Applications

- ◆Switching application



Mechanical Data

- ◆Case: SOT-23
- ◆Terminals: Matte Tin-Plated Leads, Solderability-per MIL-STD-202,Method 208

SOT-23

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	100	V
Gate-to-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	170	mA
Pulsed Drain Current *3	I_{DM}	680	mA

Thermal Characteristics

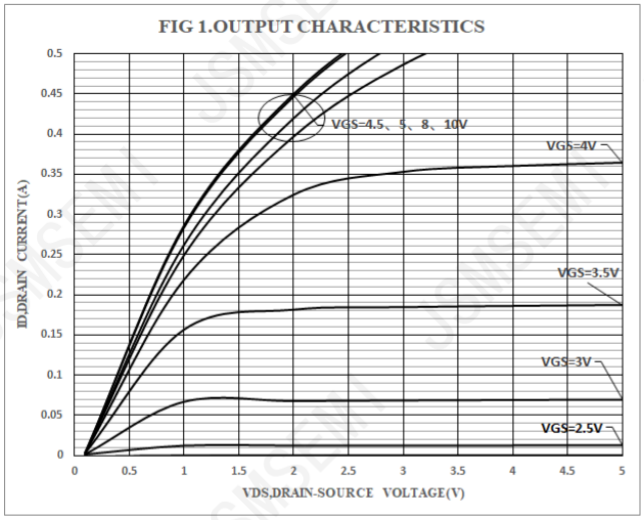
Parameter		Symbol	Value	Unit
Power Dissipation	SOT-23	P_D	0.35	W
Thermal Resistance Junction-to-Air	SOT-23	$R_{\theta JA}$	357	°C/W
Operating Junction Temperature Range		T_J	-55 to +150	°C
Storage Temperature Range		T_{STG}	-55 to +150	°C

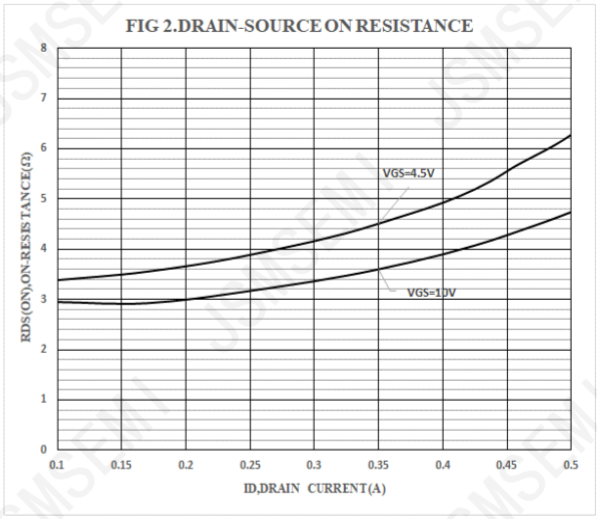
Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

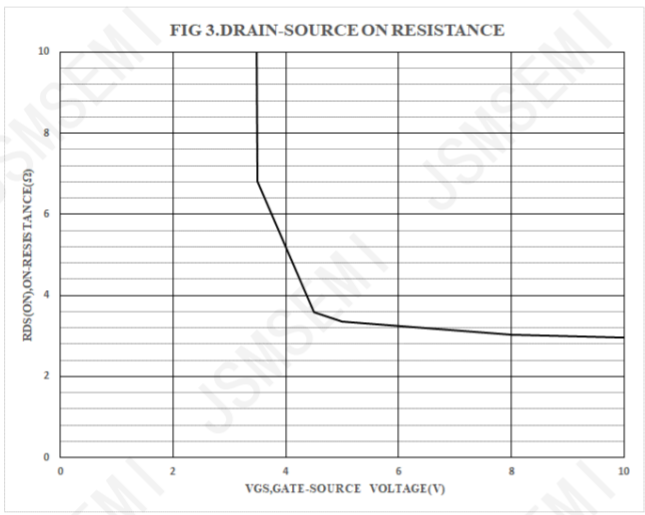
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250μA	100	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 100V, V_{GS} = 0V	-	-	1	μA
		V_{DS} = 20V, V_{GS} = 0V	-	-	10	nA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±20V, V_{DS} = 0V	-	-	±1	μA
On Characteristics						
$R_{DS(ON)}$	Static Drain-Source On-resistance *1	V_{GS} = 10V, I_D = 0.17A	-	3.0	6	Ω
		V_{GS} = 4.5V, I_D = 0.17A	-	3.5	10	
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	1	1.9	2.8	V
Dynamic Characteristics						
Ciss	Input Capacitance	V_{GS} = 0V V_{DS} = 20V f = 1.0MHz	-	43	-	pF
Coss	Output Capacitance		-	15	-	
Crss	Reverse Transfer Capacitance		-	2.8	-	
Switching Characteristics *2						
$t_{d(on)}$	Turn-on Delay Time	V_{DD} = 30V, I_D = 0.28A V_{GS} = 10V, R_G = 50Ω	-	-	8	ns
t_r	Turn-on Rise Time		-	-	8	
$t_{d(off)}$	Turn-Off Delay Time		-	-	13	
t_f	Turn-Off Fall Time		-	-	16	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage *1	I_S = 0.3A, V_{GS} = 0V	-	0.85	1.3	V

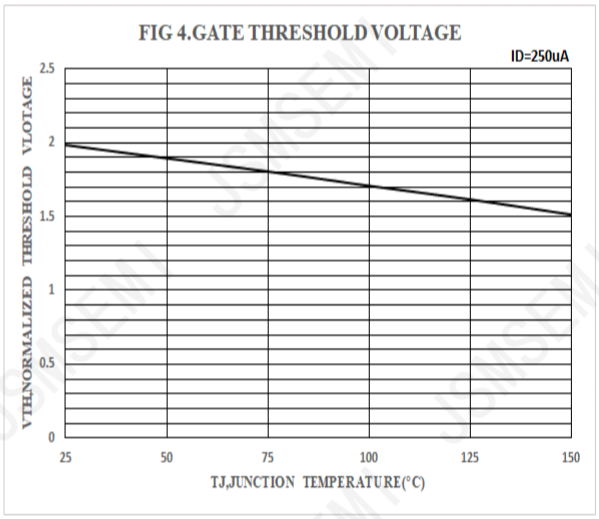
Notes:
1、 Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
2、 Guaranteed by design, not subject to production
3、 Pulse width limited by maximum junction temperature

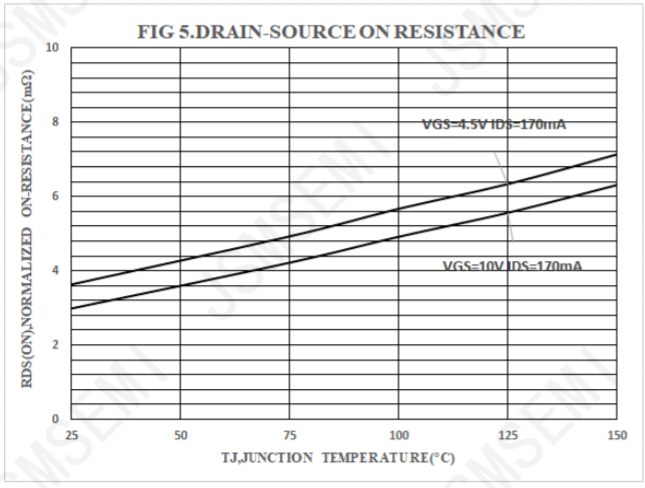
Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

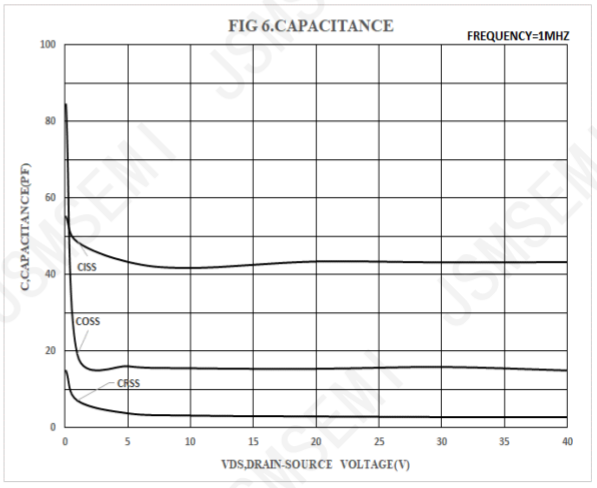






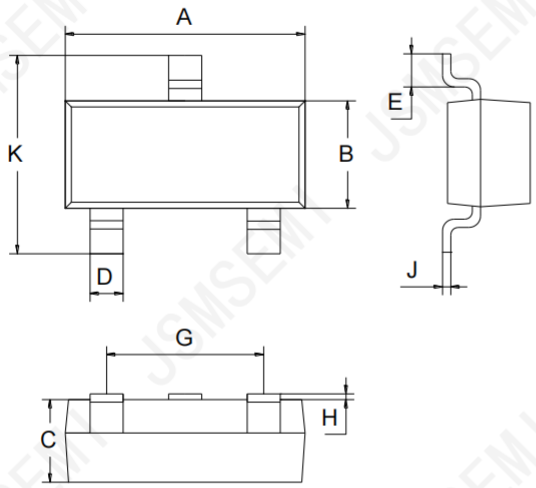






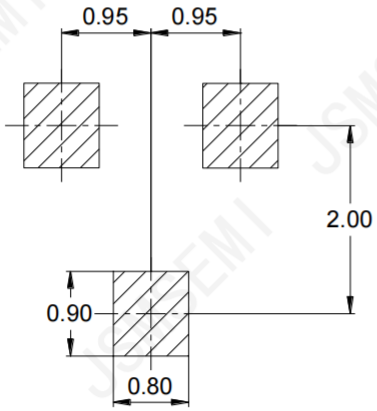
Package Outline Dimensions (Unit: mm)

SOT-23



SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Mounting Pad Layout (Unit: mm)



Revision History

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

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