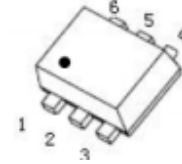
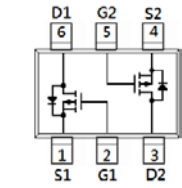


Features

- $R_{DS(ON)}$ @ $V_{GS} = -10V$, $I_D = -0.5A < 4\Omega$
- $R_{DS(ON)}$ @ $V_{GS} = -4.5V$, $I_D = -0.2A < 6\Omega$
- $R_{DS(ON)}$ @ $V_{GS} = -2.5V$, $I_D = -0.05A < 13\Omega$
- Advanced trench process technology

HF



SOT-563

Mechanical Data

- Case: SOT-563
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin-Plated Leads, Solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL1025	SOT-563	3000pcs / Tape & Reel	1025

Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate -Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-0.2	A
Pulsed Drain Current	I_{DM}	-0.8	A
Power Dissipation	P_D	0.3	W

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	417	$^\circ C/W$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ C$

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ 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	-60	-	-	V
I _{DSS}	Drain to Source Leakage Current	V _{DS} = -48V, V _{GS} = 0V	-	-	-1	μA
I _{GSS}	Gate-body Leakage	V _{GS} = ±20V, V _{DS} = 0V	-	-	±10	μA
On Characteristics *2						
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} = -10V, I _D = -0.5A	-	2.4	4	Ω
		V _{GS} = -4.5V, I _D = -0.2A	-	2.65	6	
		V _{GS} = -2.5V, I _D = -0.05A	-	4.5	13	
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-2.5	V
Dynamic Characteristics *3						
C _{ISS}	Input Capacitance	V _{GS} = 0V V _{DS} = -25V f = 1.0MHz	-	51	-	pF
C _{OSS}	Output Capacitance		-	15	-	
C _{RSS}	Reverse Transfer Capacitance		-	2.2	-	
Switching Characteristics *3						
t _{d(on)}	Turn-on Delay Time	V _{DD} = -25V, I _D = -0.1A V _{GS} = -10V, R _G = 6Ω *2	-	4.8	-	ns
t _r	Turn-on Rise Time		-	19	-	
t _{d(off)}	Turn-Off Delay Time		-	52	-	
t _f	Turn-Off Fall Time		-	32	-	
Q _g	Total Gate Charge	V _{DD} = -25V	-	1.1	-	nC
Q _{gs}	Gate-Source Charge	I _D = -0.1A	-	0.3	-	
Q _{gd}	Gate-Drain Charge	V _{GS} = -4.5V	-	0.2	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _S = -0.5A, V _{GS} = 0V	-	-0.95	-1.3	V
I _S	Diode Continuous Forward Current		-	-	-0.2	A

Notes:

- 1、 Surface mounted on a 1 inch square pad of copper
- 2、 Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
- 3、 Guaranteed by design, not subject to production testing

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

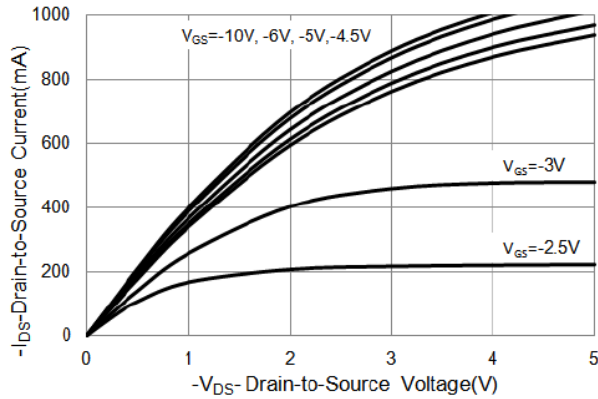


Fig 1 On-Region Characteristics

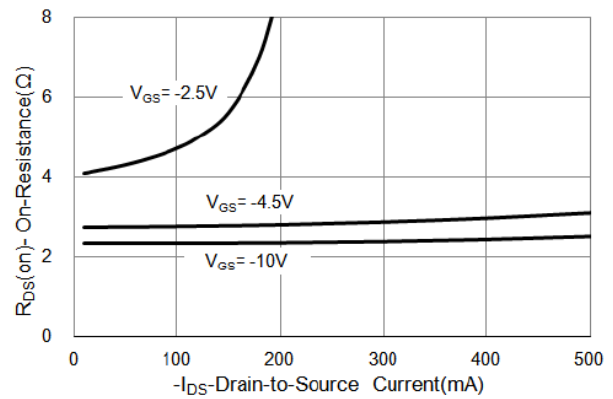


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

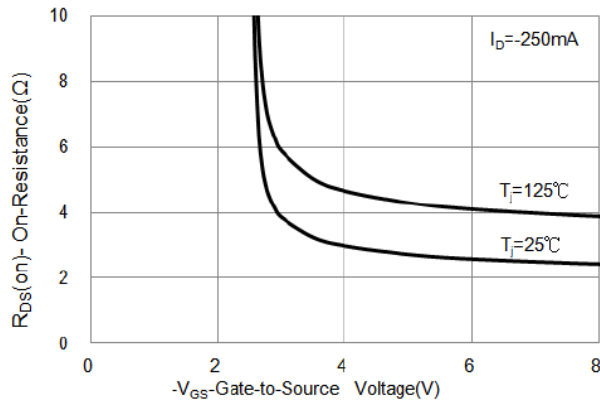


Fig 3 On-Resistance vs. Gate-Source Voltage

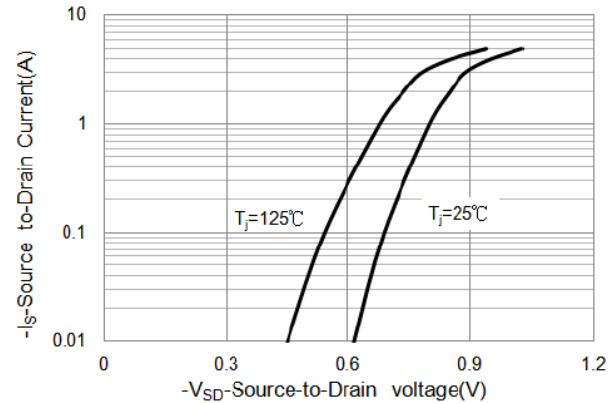


Fig 4 Body-Diode Characteristics

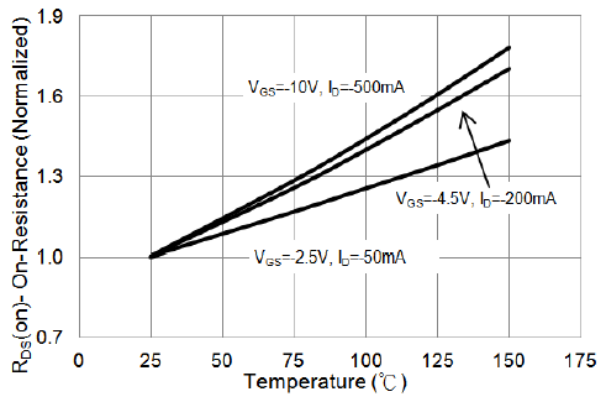


Fig 5 On-Resistance vs. Junction Temperature

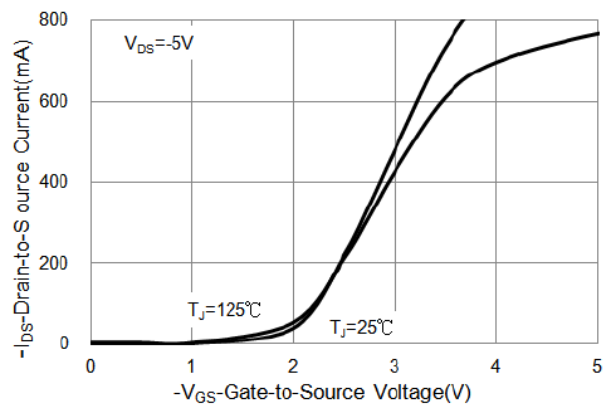
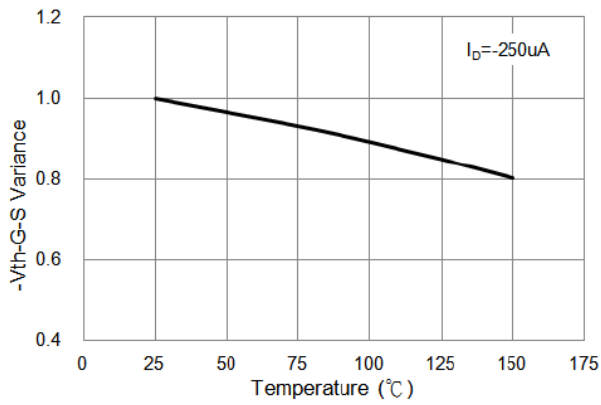
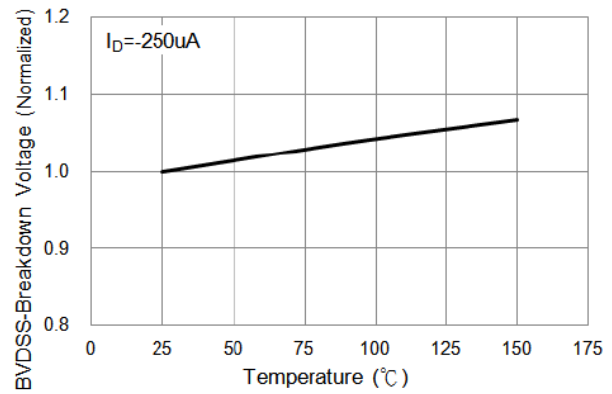
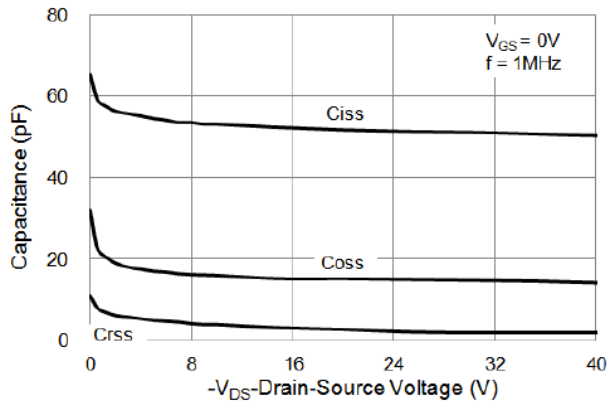
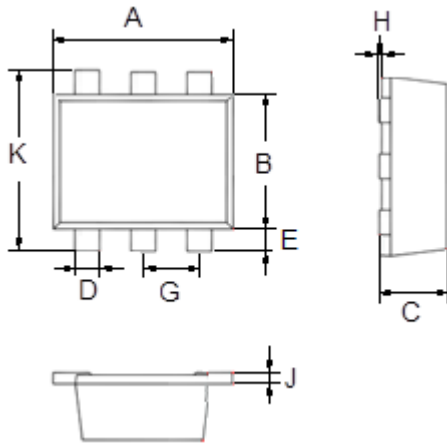


Fig 6 Transfer Characteristics



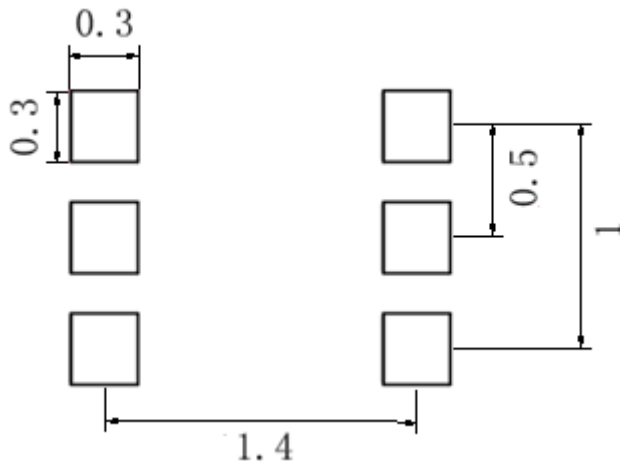
Package Outline Dimensions (Unit: mm)



SOT-563		
Dimension	Min.	Max.
A	1.500	1.700
B	1.100	1.300
C	0.525	0.600
D	0.170	0.270
E	0.100	0.300
G	0.450	0.550
H	0.000	0.050
J	0.090	0.160
K	1.500	1.700

Mounting Pad Layout (Unit: mm)

SOT-563



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