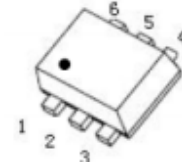
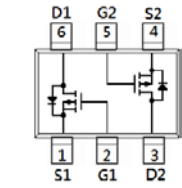


Features

- $R_{DS(ON)}$ @ $V_{GS} = -10V, I_D = -0.5A < 4\Omega$
- $R_{DS(ON)}$ @ $V_{GS} = -4.5V, I_D = -0.2A < 6\Omega$
- $R_{DS(ON)}$ @ $V_{GS} = -2.5V, I_D = -0.05A < 13\Omega$
- 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 (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	-60	V
Gate -Source Voltage	V_{GSS}	± 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	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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	$V_{GS} = 0V, I_D = -250\mu A$	-60	-	-	V
I_{DSS}	Drain to Source Leakage Current	$V_{DS} = -48V, V_{GS} = 0V$	-	-	-1	μA
I_{GSS}	Gate-body Leakage	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	± 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	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.5	-2.5	V
Dynamic Characteristics *3						
C_{ISS}	Input Capacitance	$V_{GS} = 0V$	-	51	-	pF
C_{OSS}	Output Capacitance	$V_{DS} = -25V$	-	15	-	
C_{RSS}	Reverse Transfer Capacitance	$f = 1.0MHz$	-	2.2	-	
Switching Characteristics *3						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD} = -25V, I_D = -0.1A$ $V_{GS} = -10V, R_G = 6\Omega$ *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:

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

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

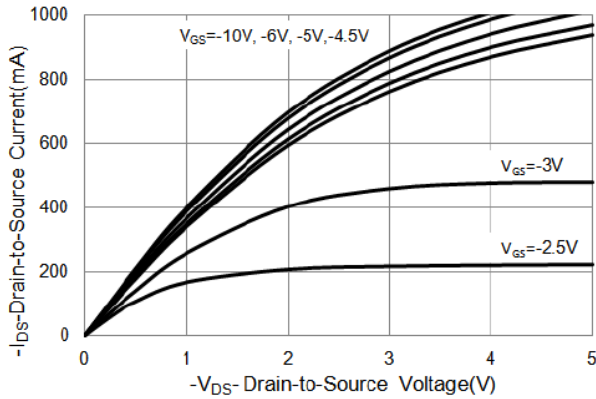


Fig 1 On-Region Characteristics

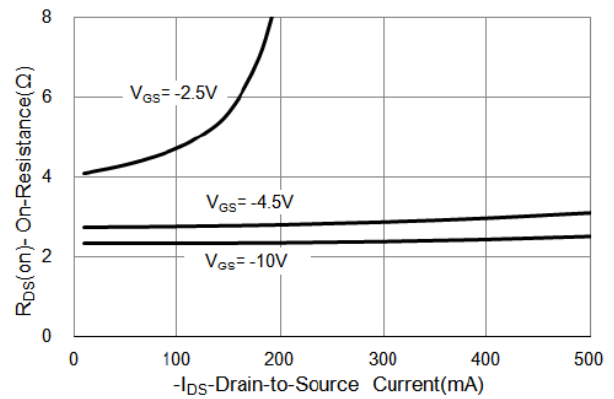


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

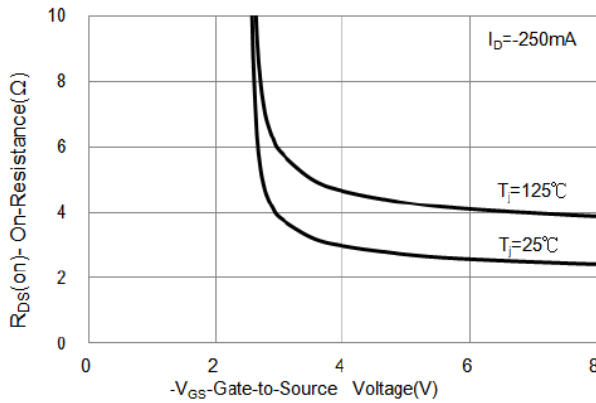


Fig 3 On-Resistance vs. Gate-Source Voltage

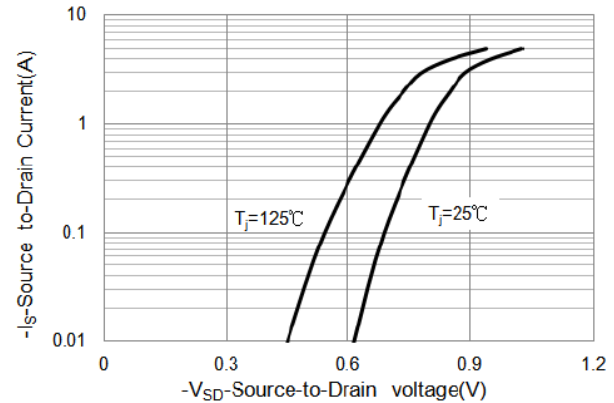


Fig 4 Body-Diode Characteristics

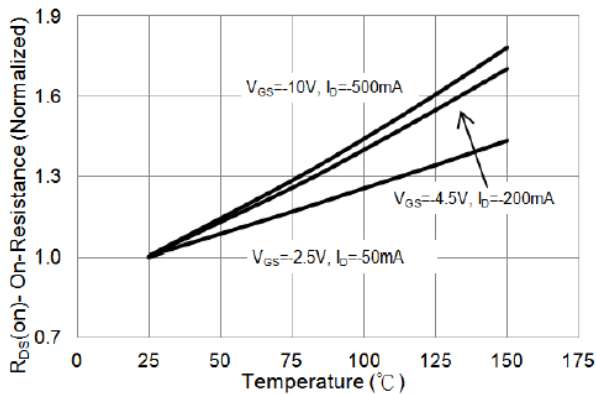


Fig 5 On-Resistance vs. Junction Temperature

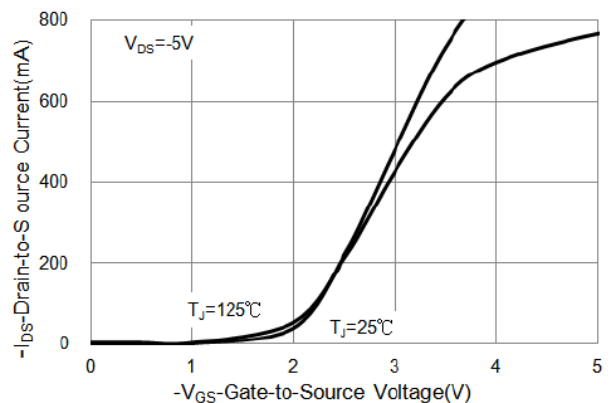


Fig 6 Transfer Characteristics

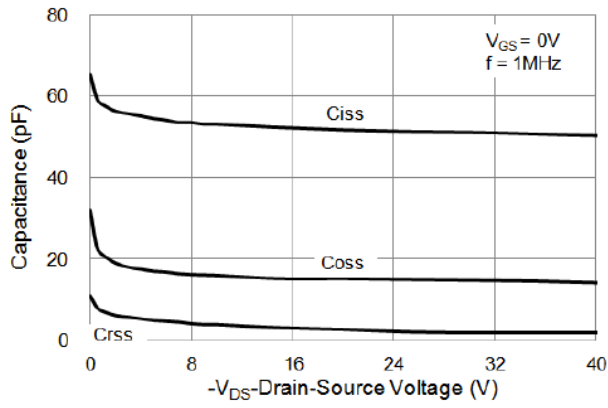


Fig 7 Capacitance Characteristics

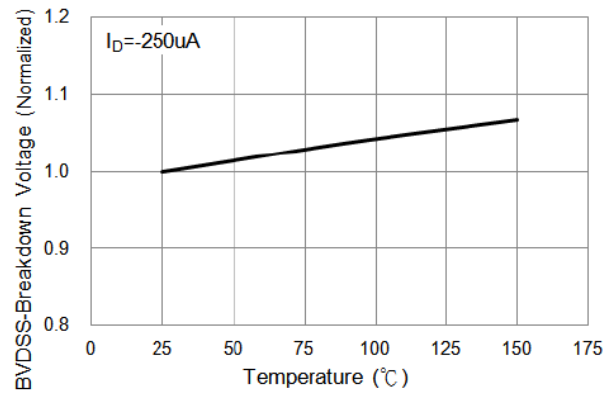


Fig 8 Drain-Source vs. Junction Temperature

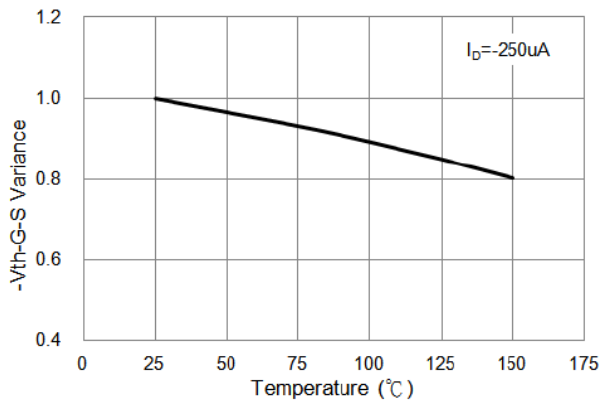
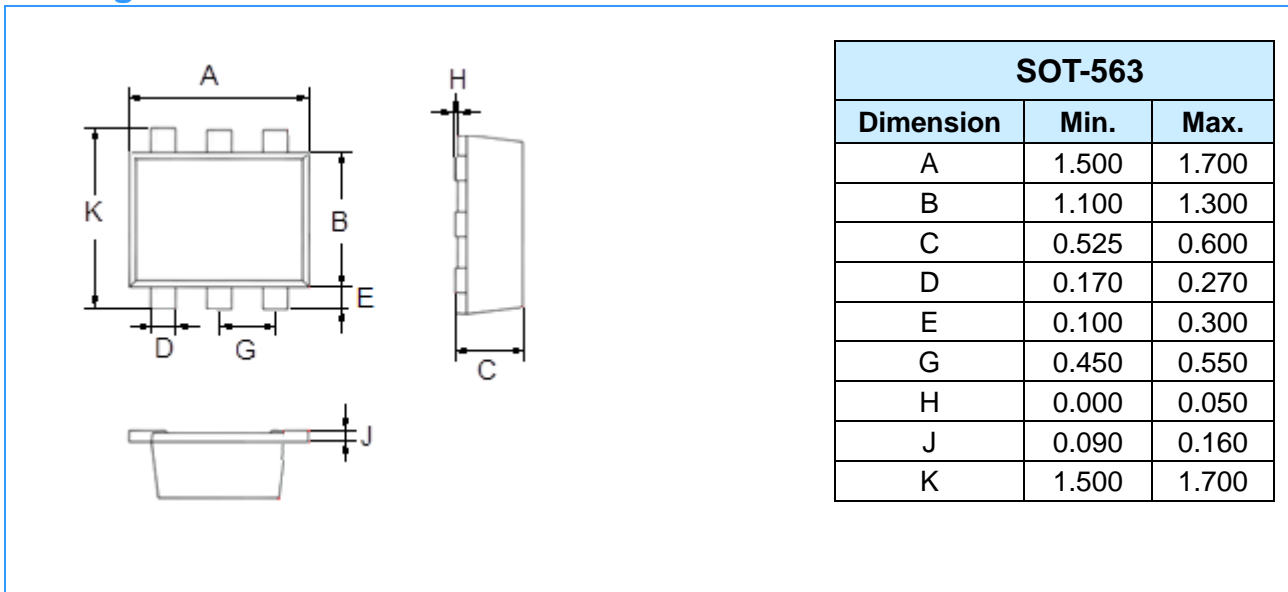
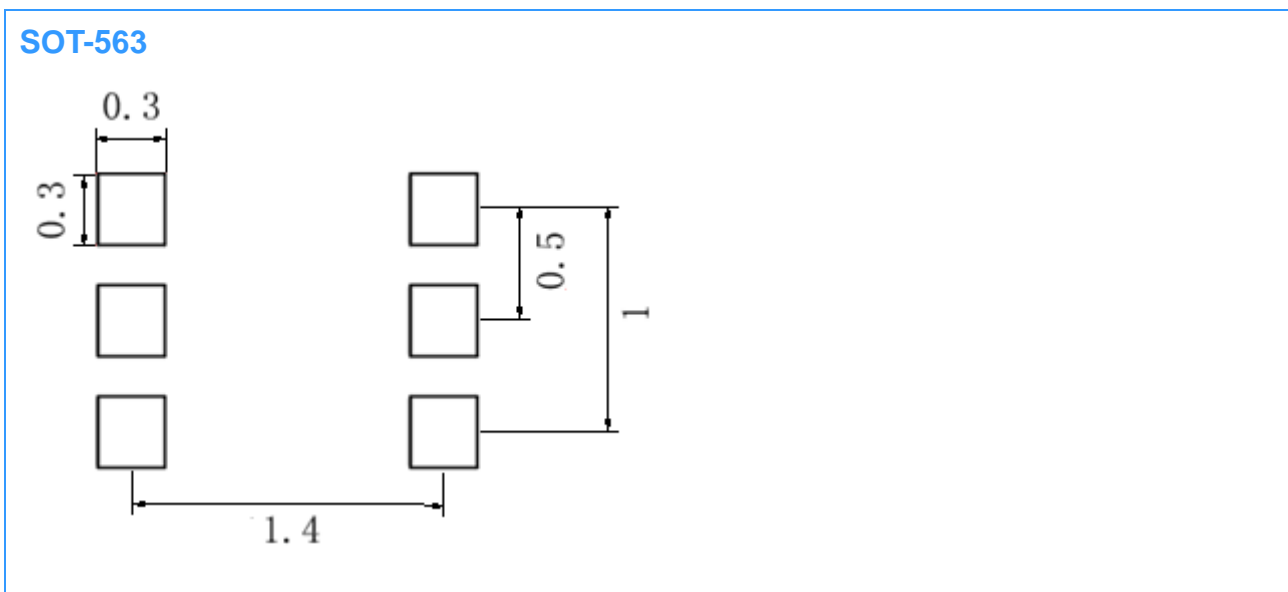


Fig 9 Gate Voltage vs. Junction Temperature

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



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