

Features

- Advanced trench cell design
- ESD protected

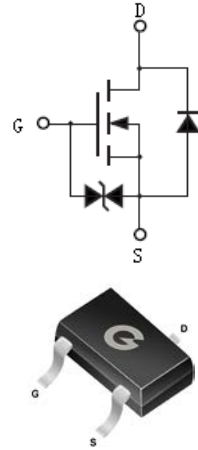
HF

APPLICATIONS

- Load switch appliances

Mechanical Data

- Case: SOT-323
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-323

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL3428W	SOT-323	3000pcs / Tape & Reel	3428

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V _{DSS}	30	V
Gate-to-Source Voltage	V _{GSS}	±10	V
Continuous Drain Current *4	I _D	0.3	A
Pulsed Drain Current *1	I _{DM}	0.6	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation(T _A = 25°C)	P _D	0.35	W
Thermal Resistance Junction-to-Air *3,4	R _{θJA}	357	°C/W
Operating Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°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	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 24V, V _{GS} = 0V	-	-	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±8V, V _{DS} = 0V	-	-	±10	μA
On Characteristics						
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} = 4.5V, I _D = 0.3A	-	-	1.2	Ω
		V _{GS} = 2.5V, I _D = 0.2A	-	-	1.6	Ω
		V _{GS} = 1.8V, I _D = 0.1A	-	-	2	Ω
		V _{GS} = 1.5V, I _D = 0.05A	-	-	3	Ω
		V _{GS} = 1.2V, I _D = 0.02A	-	-	4	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	0.4	-	1.0	V
Dynamic Characteristics ^{*5}						
C _{ISS}	Input Capacitance	V _{GS} = 0V V _{DS} = 10V f = 1.0MHz	-	45	-	pF
C _{OSS}	Output Capacitance		-	14	-	
C _{RSS}	Reverse Transfer Capacitance		-	0.8	-	
Switching Characteristics ^{*5}						
t _{d(ON)}	Turn-on Delay Time	V _{DD} = 10V V _{GS} = 4V R _G = 10Ω ^{*1, 2} I _D = 0.3A	-	8.3	-	ns
t _r	Turn-on Rise Time		-	5.7	-	
t _{d(OFF)}	Turn-Off Delay Time		-	35	-	
t _f	Turn-Off Fall Time		-	12	-	
Q _G	Total Gate-Charge	V _{DD} = 10V V _{GS} = 4.5V I _D = 0.3A	-	0.9	-	nC
Q _{GS}	Gate to Source Charge		-	0.3	-	
Q _{GD}	Gate to Drain (Miller) Charge		-	0.2	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} = 0.3A, V _{GS} = 0V	-	-	1.3	V
I _S	Diode Forward Current		-	-	0.3	A

Notes:

- The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- Essentially independent of operating temperature typical Characteristics
- $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper
- The maximum current rating is package limited
- Guaranteed by design, not subject to production testing

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

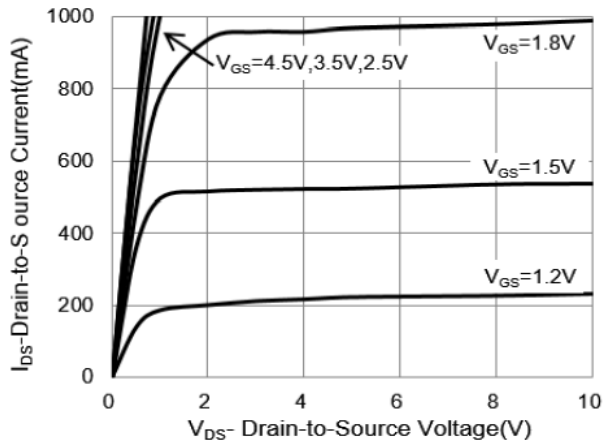


Fig 1 On-Region Characteristics

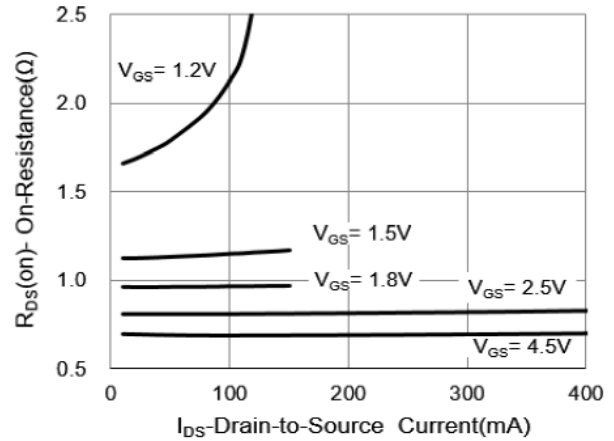


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

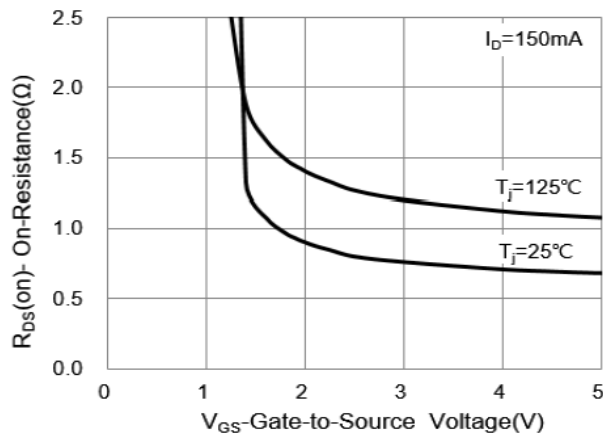


Fig 3 On-Resistance vs. Gate-Source Voltage

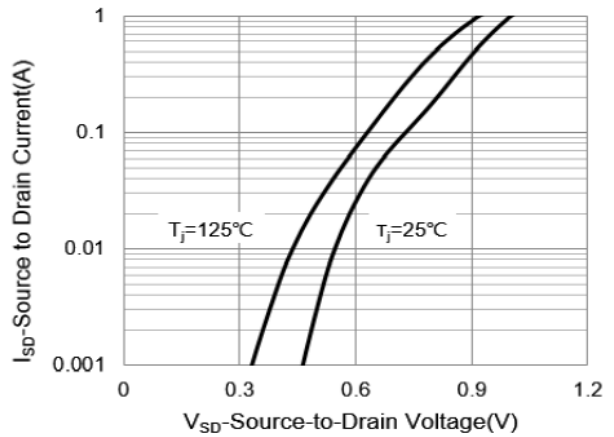


Fig 4 Body-Diode Characteristics

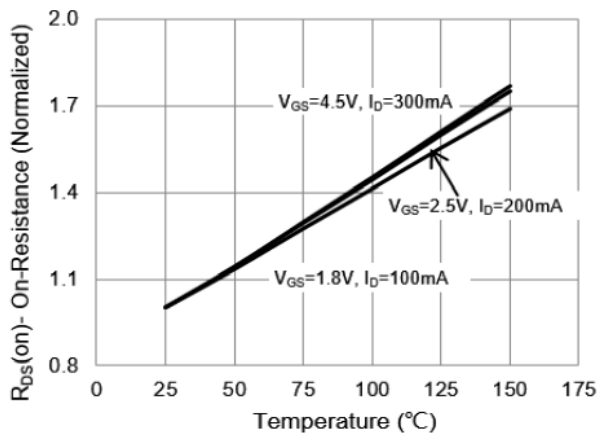


Fig 5 On-Resistance vs. Junction Temperature

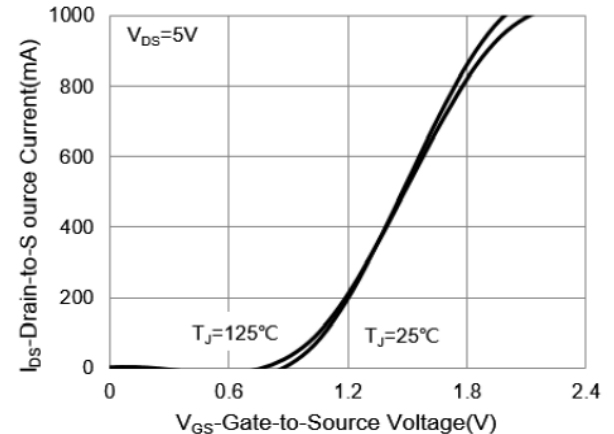


Fig 6 Transfer Characteristics

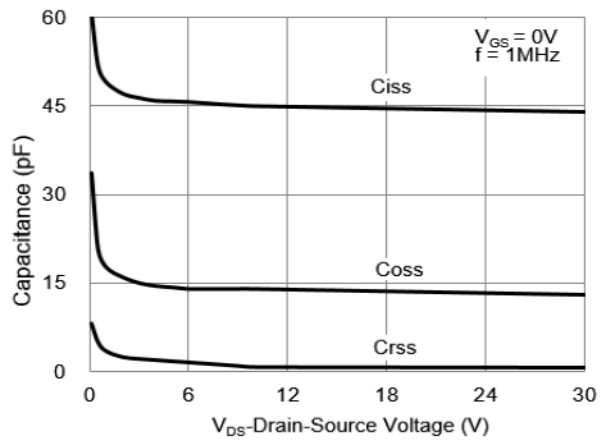


Fig 7 Capacitance Characteristics

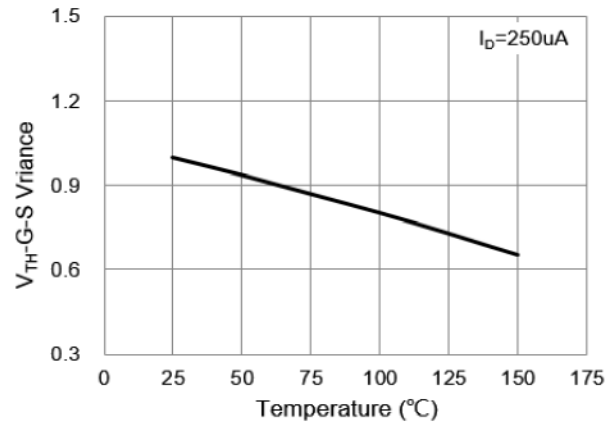
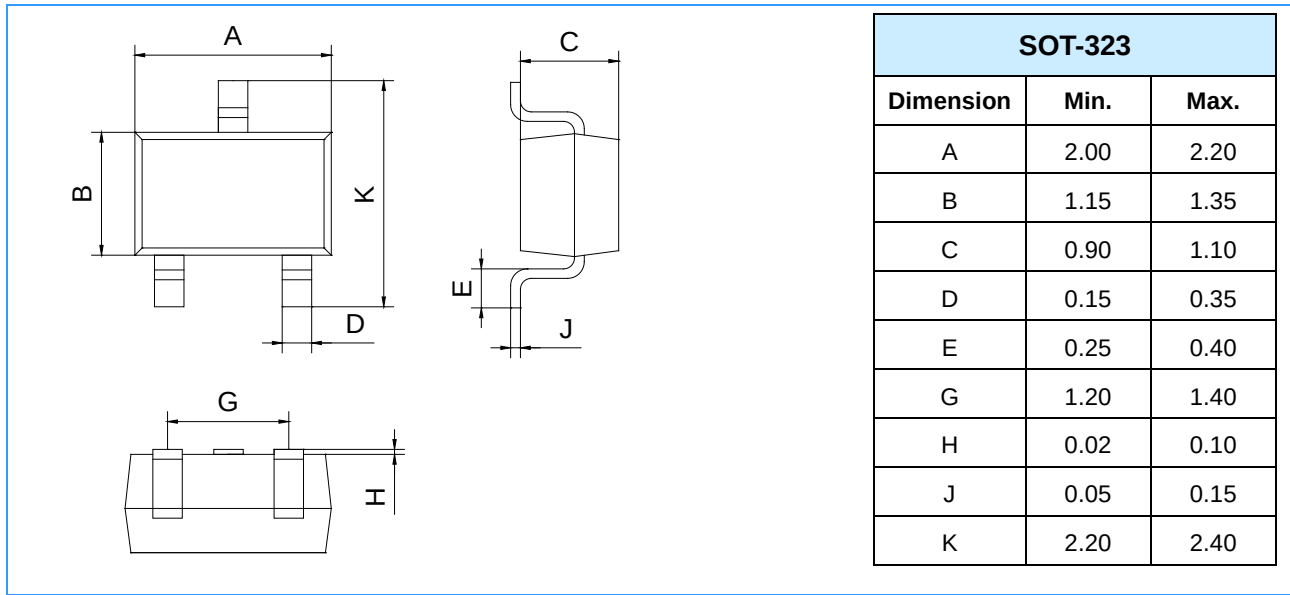
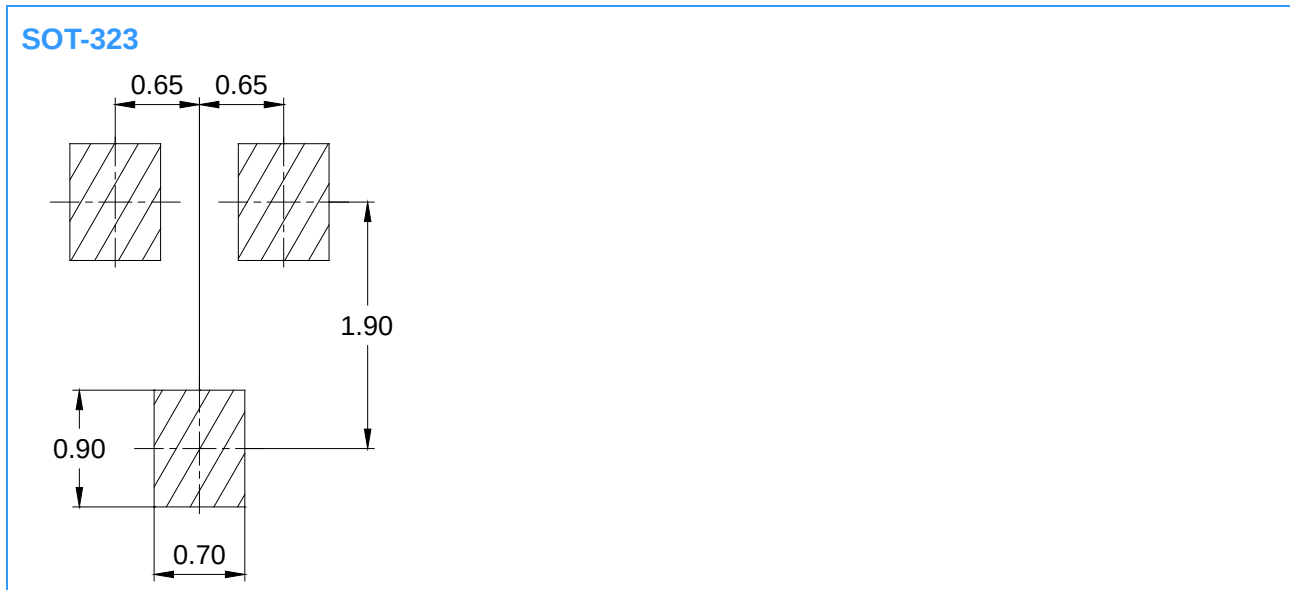


Fig 8 Gate Voltage vs. Junction Temperature

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



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