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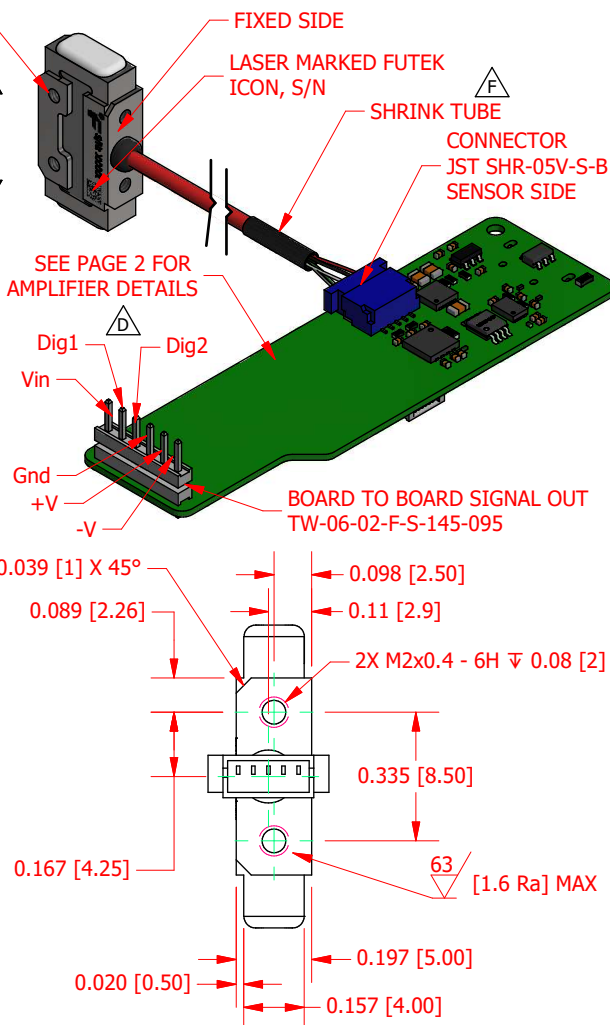
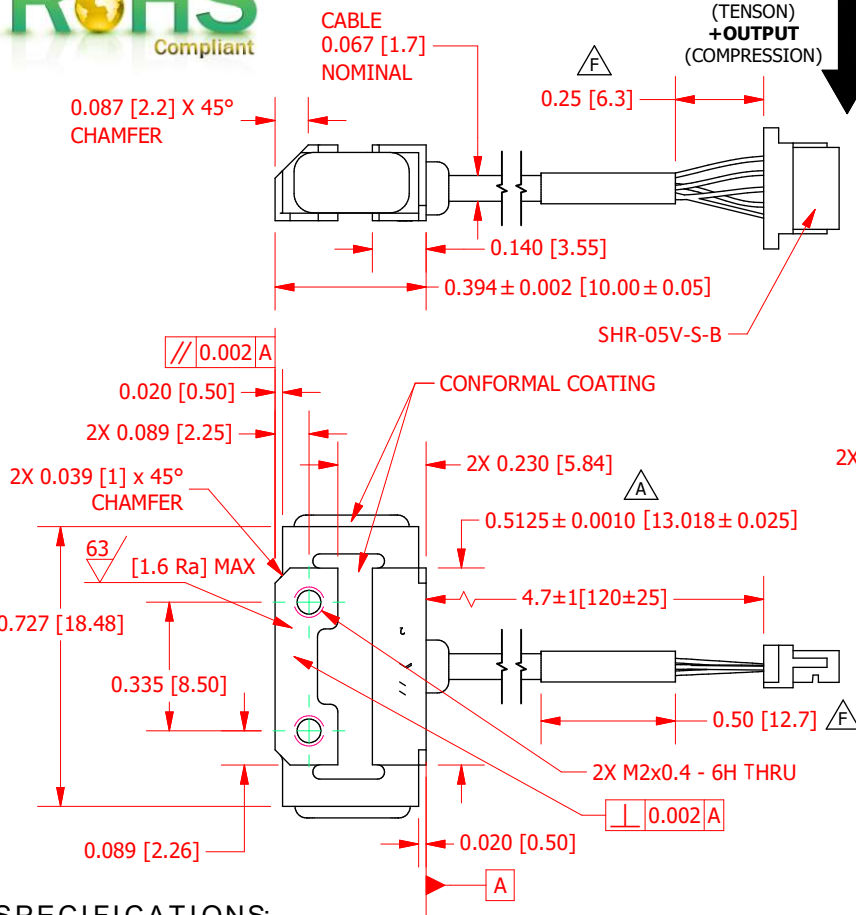
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FUTEK MODEL QLA417

ITEM NUMBER: QSH02156 

INCH [mm] | R.O. = Rated Output

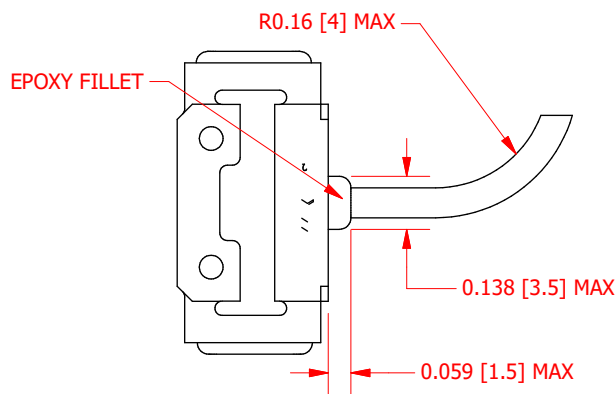
CUSTOM MINIATURE SHEAR FORCE SENSOR WITH DIFFERENTIAL AMPLIFIER



SPECIFICATIONS:

CAPACITY	50 lb. [222N]
SAFE OVERLOAD	300 % of R.O.
NONLINEARITY	±0.1% of R.O.
HYSTERESIS	±0.1% of R.O.
NONREPEATABILITY	±0.05% of R.O.
TEMP. SHIFT ZERO*	±0.01% of R.O./°F (±0.018 of R.O./°C)
TEMP. SHIFT SPAN*	±0.02% of LOAD/°F (±0.036 of LOAD/°C)
COMPENSATED TEMP.*	50 to 160 °F (10 to 71 °C) 
MATERIAL (FLEXURE)	17-4 PH S.S. (H900)
ELONGATION AT BREAK	7%
DEFLECTION	0.0007 [0.020] nom.
CABLE: #32 AWG, 4 Conductor, Shielded Cable with Silicone Jacket	
IP RATING*	IP64
RoHS Lead Free	(EU) 2015/863

*SENSOR ONLY RELATED SPECIFICATION

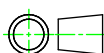


CUSTOMER APPROVAL- COMPANY:			
CUSTOMER APPROVAL- NAME / DATE:			
REVISIONS: (Refer to dwg # revision sheet)			
A	3/13/2020	E	6/22/2020
B	3/30/2020	F	9/17/2021
C	4/03/2020		
D	6/17/2020		

OUTLINE DRAWING

STANDARD NOTES: (Unless Otherwise Specified)
ALL DIMENSIONS ARE IN INCHES
DRAWING INTERPRETATION DIMS. PER ASME-Y14.5
REMOVE BURRS AND BREAK SHARP EDGES .005 - .015
THREADS PER HANDBOOK H-28
DIMENSIONS ARE SHOWN AFTER PLATING

3rd ANGLE PROJ.



ANGLE:
± 1/2°

CHAMFER:
± 5°

TOLERANCE:
.X ± 0.1"
.XX ± 0.01"
.XXX ± 0.005"

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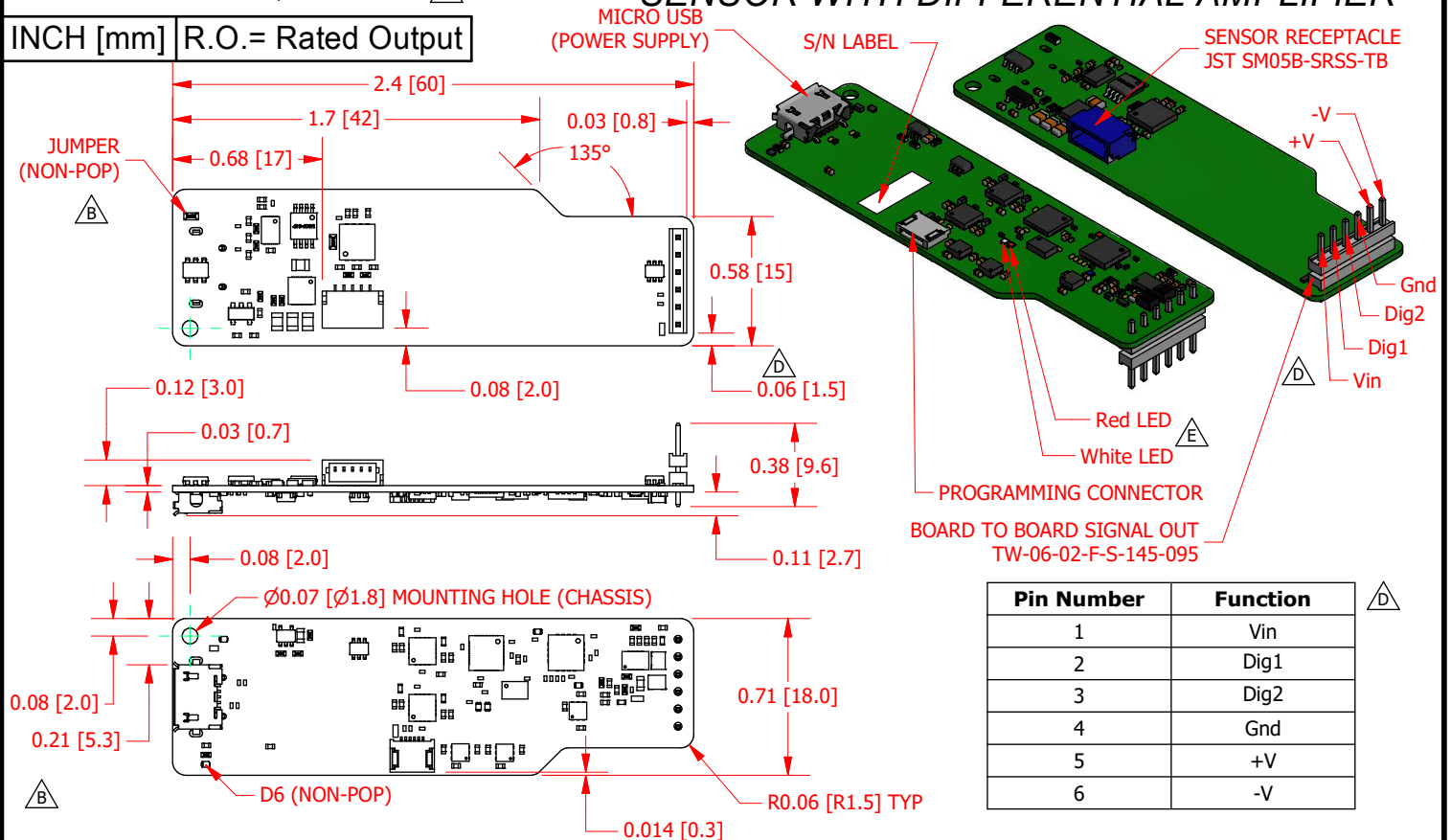
MODEL: QLA417	DWG No.: FO1519-F
DRAWN BY: M. LISIAK	CREATED DATE: 11/21/2019
APPROVED BY: S. VOSOUGH	APPROVED DATE: 2/11/2020
CHECKED BY:	CAGE: 1X8M6 SHEET: 1 OF 2

FUTEK MODEL QLA417

ITEM NUMBER: QSH02156 

CUSTOM MINIATURE SHEAR FORCE SENSOR WITH DIFFERENTIAL AMPLIFIER

INCH [mm] R.O. = Rated Output



AMPLIFIER SPECIFICATION:

Analog Output:

- Rated Output: ± 3 VDC
- Bandwidth: 10 kHz
- Noise: 9 mV p-p

Power:

- 4.5 - 5.5 VDC
 - 20-40mV peak-to-peak ripple in passband
 - 20MHz bandwidth (cutoff 40dB @ 20MHz)
- Power Consumption: 250mW
- Inrush Current: ~ 1 A

LED:

- Red: Indicates that there is an open/short at the input and/or the temperature is not within 10°C to 45°C.
- White: Indicates normal operation mode when blinking.

Digital Output:

- VOH: 3.3V
- VOL: 0V
- Pin 2/Dig1 goes low if there is an open/short at the input.
- Pin 3/Dig2 goes low if the temperature is not within 10°C to 45°C.

Features:

- Differential Input
- Differential Output
- On-Board Temperature Measurement
- Short/Open Circuit Detection
- Over Temperature Fault Detection 

NOTES:

- There are 2 non-pop components, specified as Jumper and D6 to keep the Chassis (Mounting hole) floating
- There is a differential filter in the output of amplifier with a bandwidth of 10kHz.

CUSTOMER APPROVAL- COMPANY:

CUSTOMER APPROVAL- NAME / DATE:

REVISIONS: (Refer to dwg # revision sheet)

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B	3/30/2020	F	9/17/2021
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OUTLINE DRAWING

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DRAWING INTERPRETATION DIMS. PER ASME-Y14.5

REMOVE BURRS AND BREAK SHARP EDGES .005 - .015

THREADS PER HANDBOOK H-28

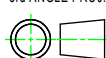
DIMENSIONS ARE SHOWN AFTER PLATING

ANGLE:
 $\pm 1/2^\circ$

CHAMFER:
 $\pm 5^\circ$

TOLERANCE:
.X ± 0.1 "
.XX ± 0.01 "
.XXX ± 0.005 "

3rd ANGLE PROJ.



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MODEL: **QLA417**

DRAWN BY: M. LISIAK

APPROVED BY: S. VOSOUGH

CHECKED BY:

DWG No.: **FO1519-F**

CREATED DATE: 11/21/2019

APPROVED DATE: 2/11/2020

CAGE: 1X8M6 SHEET: 2 OF 2