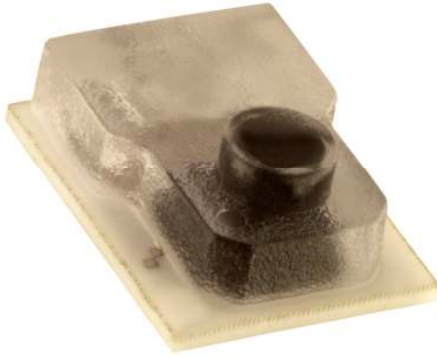


Model 1620



- Disposable Blood Pressure Sensor
- AAMI Specifications
- Low Cost Disposable
- Dielectric Gel Barrier
- Fully Tested & Calibrated

DESCRIPTION

The Model 1620 is a fully piezoresistive silicon pressure sensor for use in invasive blood pressure monitoring. The sensor is designed to be used with automated assembly equipment and can be dropped directly into a customer's disposable blood pressure housing. The sensor is designed to meet the requirements as described in the Association for the Advancement of Medical Instrumentation (AAMI) specification for Blood Pressure Transducers.

The pressure sensor consists of a pressure sensing element mounted on a ceramic substrate. Thick film resistors on the ceramic substrate are laser trimmed for compensation and calibration. A plastic cap is attached to the ceramic substrate to provide an easy method of attachment to the customer's assembly and protection for the sensing element. A dielectric gel is placed over the sensor to provide electrical and fluid isolation.

The Model 1620 pressure sensors are batch manufactured in a 10x12 element array on a ceramic substrate (120 units per substrate). The products are shipped in anti-static shipping containers. They can also be shipped on a tape and reel. Performance characteristics and packaging can be easily tailored on a special order basis to meet the requirements of specific customers.

FEATURES

- Low Cost, Medical Applications
- Small Size and Reliable Performance
- Gel Isolation for Liquids
- Operates from 5°C to 45°C
- Compatible for Automated Assembly
- 1% Accuracy for Replacements
- 5.0 uV/V/mmHg Sensitivity
- Customization for OEM Applications

APPLICATIONS

- Surgical Procedures
- Intensive Care Units
- Infusion Pumps
- Kidney Dialysis Machines
- Vacuum Assisted Birth
- Intrauterine Monitoring

STANDARD RANGES

Range	mmHg
-50 to 300	•

Model 1620

PERFORMANCE SPECIFICATIONS

Supply Voltage: 6.0 Vdc

Ambient Temperature: 23°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Operating Pressure Range	-50		300	mmHg	
Over Pressure	125			psi	
Zero Pressure Offset	-20		20	mmHg	
Sensitivity	4.95	5.00	5.05	uV/V/mmHg	
Calibration	97.5	100	102.5	mmHg	1
Linearity and Hysteresis (-30 to 100 mmHg)	-1		1	mmHg	2
Linearity and Hysteresis (100 to 200 mmHg)	-1		1	% Output	2
Linearity and Hysteresis (200 to 300 mmHg)	-1.5		1.5	% Output	2
Input Impedance	1200		3200	Ω	
Output Impedance	285		315	Ω	
Output Symmetry	0.95		1.05	Ratio	3
Supply Voltage	2	6	10	Vdc or Vac rms	
Risk Current (@ 120 Vac rms, 60Hz)			2	uA	
Warm-Up Time		5		Seconds	
Frequency Response		1200		Hz	
Offset Drift			2	mmHg	4
Thermal Span Shift	-0.1		0.1	%/°C	5
Thermal Offset Shift	-0.3		0.3	mmHg/°C	5
Phase Shift (@ 5KHz)			5	Degrees	
Light Sensitivity (3000 Foot Candle)		1		mmHg	
Defibrillator withstand (400 joules)	5			Discharges	6
Sterilization (ETO)	3			Cycles	7
Operating Temperature	10		40	°C	
Storage Temperature	-25		+70	°C	
Operating Product Life			168	Hours	
Shelf Life	3			Years	
Dielectric Breakdown		10,000		Vdc	
Humidity (External)	10-90% (non-condensing)				
Media Interface	Dielectric Gel				

Notes

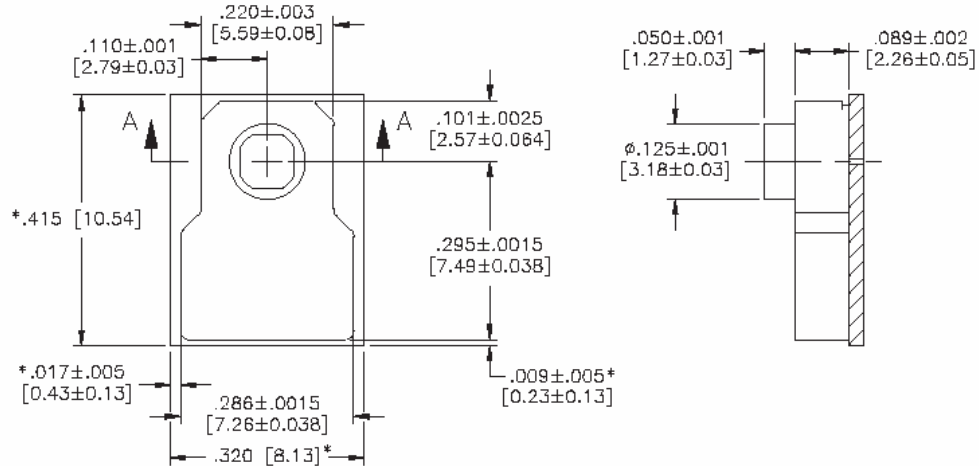
- Output of sensor with no pressure applied and a 150K Ohms resistor placed across +SUPPLY to +OUTPUT.
- Best fit straight line.
- Defined as common mode symmetry between any output and supply terminal.
- Over an 8 hour time period after a 10 minute warm-up.
- Over operating temperature range 10-40°C with respect to 23°C.
- One discharge per minute performed by customer.
- Sterilization performed by customer.

Model 1620

DIMENSIONS

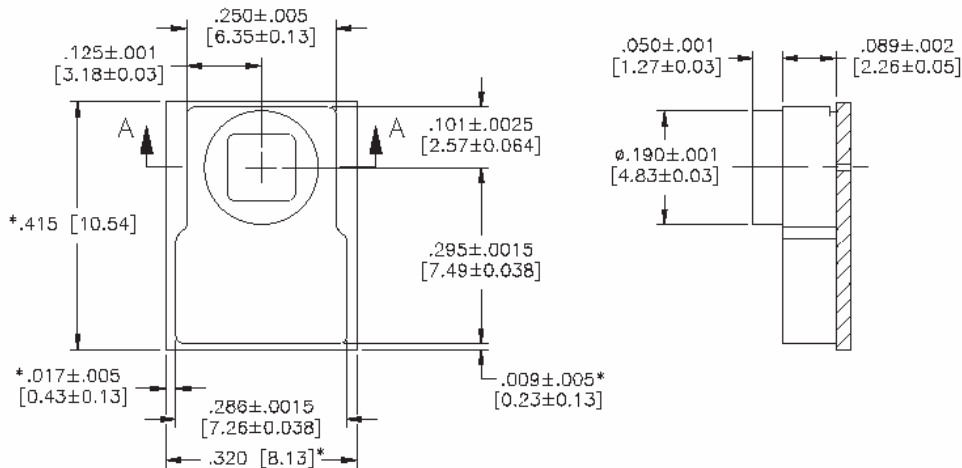
All dimensions are in inches [millimeters].

BODY STYLE N



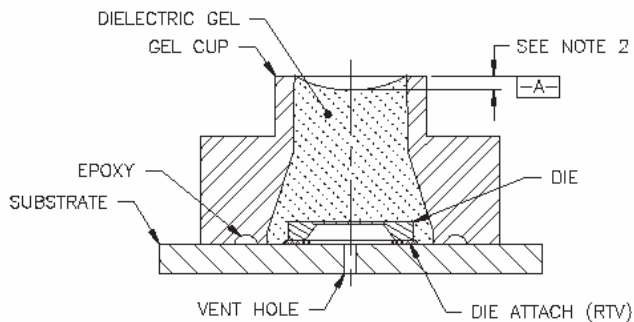
* Dimensions indicated do not include flares.

BODY STYLE W



* Dimensions indicated do not include flares.

SECTION A-A



Notes

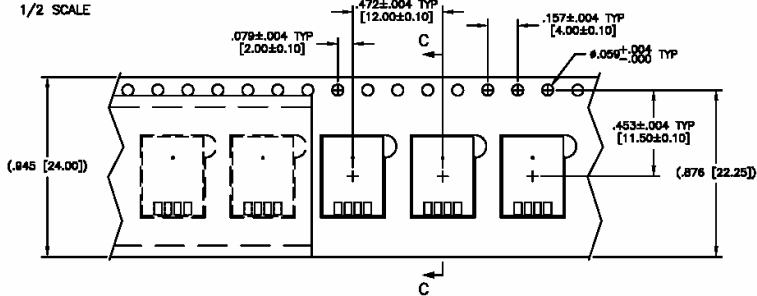
- Materials Used:
Substrate: 96% Alumina
Transducer (Die): Silicon
Die Attach Adhesive: Room Temperature Vulcanizer
Lid Adhesive: Medical Grade UV Curing Adhesive
Conductor And Contact Pads: Platinum-Silver Alloy
Wire Bonds And Bond Pads: Gold
Resistor: Ruthenium-Based Thick Film Paste
Solder Dams: Green Glass
Protective Gel Lid: Rad-Stable Polycarbonate Resin
- Miscellaneous of Gel:
Max dimension below surface A = $.035$ " [0.89].
Max dimension above surface A = $.000$ " [0.000].
- All dimensions taken at maximum draft.
- All unspecified fillets and radii are $.015$ " [0.38].
- All draft angles 1° maximum.

Model 1620

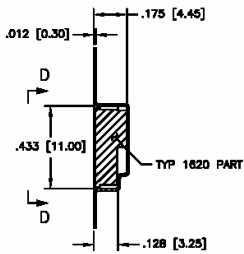
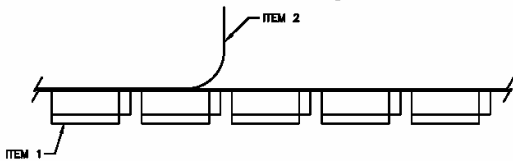
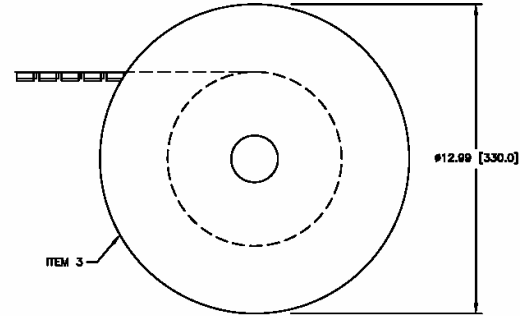
SHIPPING INFORMATION

SHIPPING CONFIGURATION OPTION: TAPE AND REEL

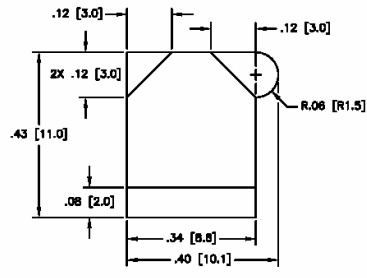
TAPE SPECIFICATIONS
1/2 SCALE



REEL SPECIFICATIONS
1/8 SCALE



SECTION C-C
SCALE: 2X



VIEW D-D
SCALE: 4X
SHOWN WITHOUT PART
FOR CLARITY

TAPE AND REEL INFO

A) MATERIAL:

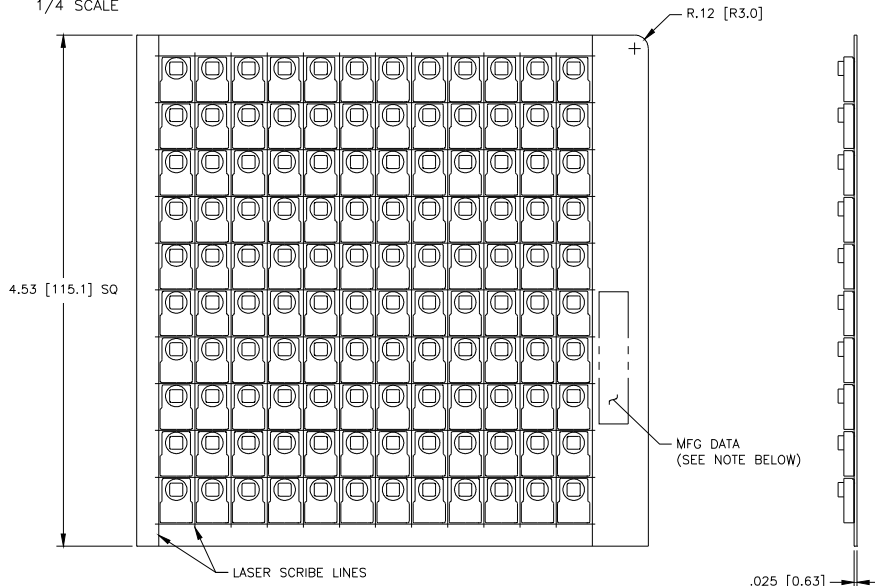
- ITEM 1, CARRIER TAPE: POLYCARBONATE
- ITEM 2, COVER TAPE: POLYCARBONATE, HEAT PRESSURE SEAL
- ITEM 3, PACKAGING TRAY: PLASTIC

B) TOTAL PEEL STRENGTH SHOULD BE 10 TO 130 GRAMS.

C) REFERENCE DOC: ANSI/EIA-481-C; 8mm THROUGH 200mm EMBOSSED CARRIER TAPING, 8mm AND 12mm PUNCHED CARRIER TAPING OF SURFACE MOUNT COMPONENTS FOR AUTOMATIC HANDLING.

SHIPPING CONFIGURATION OPTION: FULL PANEL

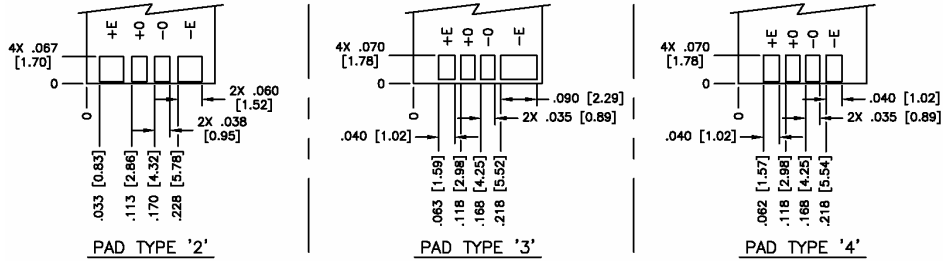
1/4 SCALE



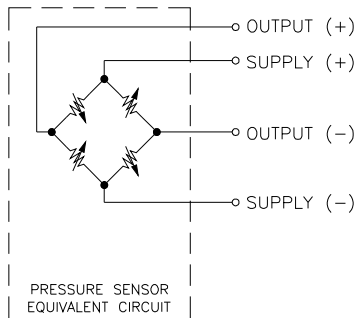
NOTE: MFG DATA CONSISTS OF LOT NUMBER, MODEL NUMBER AND QUANTITY OF GOOD UNITS PER SUBSTRATE PANEL.

Model 1620

STANDARD PAD CONFIGURATIONS

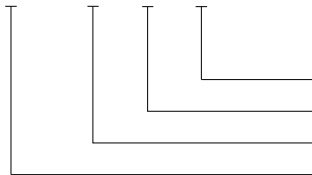


CONNECTIONS



ORDERING INFORMATION

1620 - 4 - N - T



Blank = 120 UP snapstrate, T = Tape and Reel
 Body Style (N = Narrow, W = Wide)
 Pad Configuration (2, 3, 4)
 Model

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