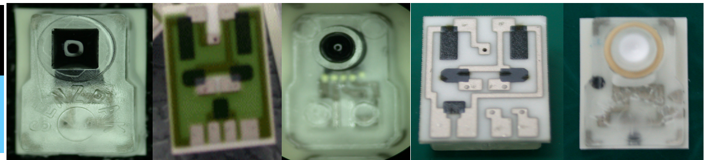
MPS-200G

Transducer Medical Pressure Sensor



Disposable Blood Pressure Sensor (AAMI Standard)

The MPS-200G pressure sensor is specifically designed to meet the requirements as described in the Association for the Advancement of Medical Instrument (AAMI) specification for Invasive Blood Pressure Transducers.

The sensor consists of a pressure sensing element mounted on a ceramic substrate. Thick-film resistors on the ceramic substrate are laser-trimmed for calibration. A plastic cap is attached to the ceramic substrate to provide protection for the sensor, and to aid in assembly. An opaque dielectric gel is placed over the sensor for electrical and fluid isolation.

Medical grade materials are chosen to ensure compatibility with all medical tests and packaging is designed for automated assembly.

FEATURES

- Low cost
- Top Side Pressure Entry
- Fully Tested and Calibrated
- Dielectric Gel Barrier
- Biomedically Approved Materials

THE MAIN FIELD OF APPLICATIONS

✓ Disposable Blood Pressure Monitor
✓ Kidney Dialysis Machine
✓ Medical Instrumentation
✓ Infusion Pumps

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Technical Data

This data is for product F. 6 standard product configuration options type A – F exist, as outlined below.

Maximum ratings

Specification	Min.	Typ.	Max.	Unit
Operating Temperature	15	-	+45	°C
Storage Temperature	-30	-	70	°C
Over Pressure (note 1)	125	-	-	psi
Supply Voltage	1	6	10	V

Data

Temperature=22±2°C, Relative humidity=45±5%

Specification	Min.	Typ.	Max.	Unit
Operating pressure range	-30	-	300	mmHg
Zero pressure offset voltage (note 1)	-20	0	20	mmHg
Sensitivity (note 1)	4.95	5	5.05	µV/V/mmHg
Input impedance (note 1)	1200	-	2200	Ω
Output impedance	285	300	315	Ω
Cal factor (150k Ω @ 0mmHg) (note 1)	97.5	100	102.5	mmHg
Non-linearity (note 2)	0	0.5	1	% span max
Output symmetry	-5	0	5	%
Warm up time (note 3)	-	60	180	s
Drift time over 4 hrs after warmup (note 4)	-	-	1	mmHg
Temperature coefficient of offset, TCO	-	-	0.3	mmHg/C
Temperature coefficient of sensitivity, TCS (note 1)	-	-	0.1	%/C
Light sensitivity	-	1	-	mmHg
Defibrillator withstand (360 J/ 5 mins)	5	-	-	cycles

Notes

1: This parameter may vary from product to product based on the product configuration.
2: Follows AAMI BP22 accuracy standards
3: Time period is typical of minimum setup / debubbling times of the end applications
4: Drift applies at fixed temperature, orientation and lighting conditions.

Standard product configurations

Product Option	A	B	C	D	E
Overpressure	125psi	125psi	90psi	90psi	125psi
Zero Pressure Offset	±20 mmHg	±20 mmHg	±20 mmHg	±20 mmHg	±20 mmHg
Sensitivity	4.95 – 5.05 µV/V/mmHg	4.95 – 5.05 µV/V/mmHg	4.95 – 5.05 µV/V/mmHg	4.95 – 5.05 µV/V/mmHg	4.95 – 5.05 µV/V/mmHg
Input Impedance	1200 – 3200 Ω	1800 – 3200 Ω	325 – 375 Ω	800-2200 Ω	1200-2200 Ω
Cal factor (150kΩ)	97.5 – 102.5 mmHg	97.5 – 102.5 mmHg	97.5 – 102.5 mmHg	97.5 – 102.5 mmHg	97.5 – 102.5 mmHg
TCS	0.1%/C	0.15%/C	0.1%/C	0.1%/C	0.1%/C
Cap	Option 2	Option 2	Option 1	Option 1	Option 1
Oring	X	X	✓	✓	✓
Pad	Option 2	Option 2	Option 1	Option 1	Option 2
Gel	Black Silicone	Black Silicone	TiO2- filled	TiO2- filled	Black Silicone
Sterilization	EtO	EtO	EtO	EtO	EtO

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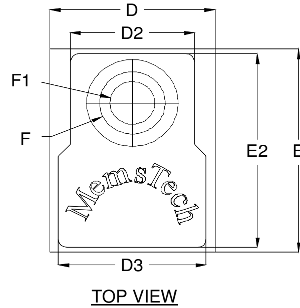
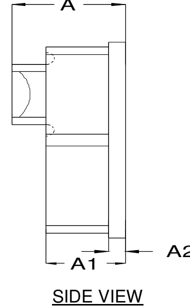
MECHANICAL DIMENSIONS



TOP VIEW

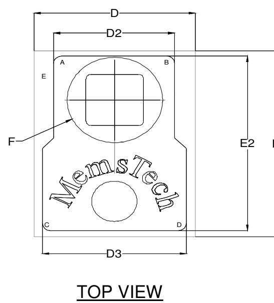
Option 1



SIDE VIEW

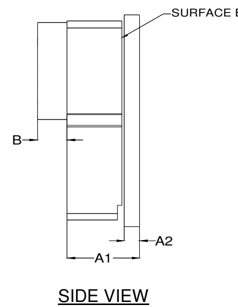
SYMBOL	MILLIMETERS			INCHES		
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM
A	4.191	4.242	4.343	0.1650	0.1670	0.1710
A1	2.921	2.972	3.073	0.1150	0.1170	0.1210
A2	0.572	0.635	0.699	0.0225	0.0250	0.0275
D	8.115	8.128	8.229	0.3195	0.3200	0.3240
D2	6.045	6.121	6.198	0.2380	0.2410	0.2440
D3	7.188	7.264	7.341	0.2830	0.2860	0.2890
E	10.528	10.541	10.643	0.4145	0.4150	0.4190
E2	9.957	10.033	10.109	0.3920	0.3950	0.3980
F	3.175	3.226	3.226	0.1250	0.1270	0.1270
F1	2.159	2.210	2.210	0.0850	0.0870	0.0870

Notes:
Oring is an option for the configuration



TOP VIEW

Option 2



SIDE VIEW

SYMBOL	MILLIMETERS			INCHES		
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM
A1	3.030	3.100	3.150	0.1193	0.1220	0.1240
A2	0.590	0.660	0.730	0.0230	0.0260	0.0290
B	1.245	1.270	1.295	0.0490	0.0500	0.0510
D	8.115	8.128	8.230	0.3195	0.3200	0.3240
D2	6.045	6.121	6.198	0.2380	0.2410	0.2440
D3	7.188	7.264	7.341	0.2830	0.2860	0.2890
E	10.528	10.541	10.643	0.4145	0.4150	0.4190
E2	9.830	9.881	9.931	0.3870	0.3890	0.3910
F	4.801	4.826	4.876	0.1890	0.1900	0.1920

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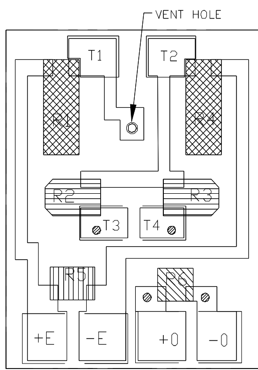
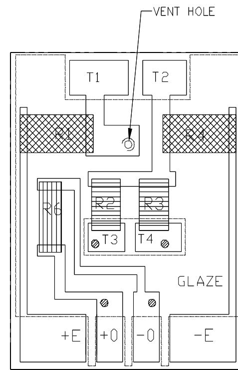
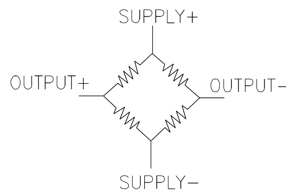
ELECTRICAL & PIN LAYOUT



Option 1



Option 2



Symbol	Description
+E	Supply +
+O	Output +
-O	Output -
-E	Supply +

Notes:
Pad layout shows interconnections viewed from the bottom of the substrate.

R6 and / or R5 may not be printed.

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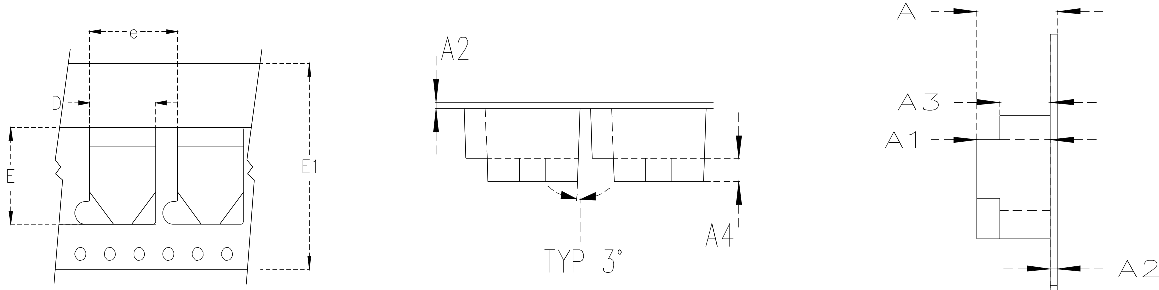
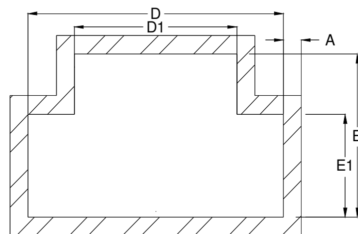
TAPE AND REEL PACKAGING OPTIONS



DIMENSION	MILLIMETERS			INCHES		
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM
A	5.18	5.20	5.25	0.204	0.205	0.207
A1	4.73	4.75	4.80	0.186	0.187	0.189
A2	0.43	0.45	0.50	0.017	0.018	0.020
A3	3.23	3.25	3.30	0.127	0.128	0.130
A4	1.48	1.50	1.55	0.058	0.059	0.061
D	8.98	9.00	9.05	0.353	0.354	0.356
E	11.18	11.20	11.25	0.440	0.441	0.443
E1	23.75	23.80	23.85	0.937	0.935	0.939
e	---	12.00	---	---	0.472	---

Notes:
1. Cover tape is clear.
2. Backing is black.
3. Non-conductive

TUBE PACKAGING OPTIONS



SYMBOLS	MILIMETERS			INCHES		
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM
A	0.50	0.60	0.70	0.0197	0.0236	0.0276
D	8.50	8.50	8.55	0.3346	0.3346	0.3366
D1	5.40	5.40	5.45	0.2126	0.2126	0.2146
E	5.30	5.30	5.35	0.2087	0.2087	0.2106
E1	3.35	3.35	3.40	0.1319	0.1319	0.1339
L	437.00	438.00	439.00	17.2047	17.2441	17.2835

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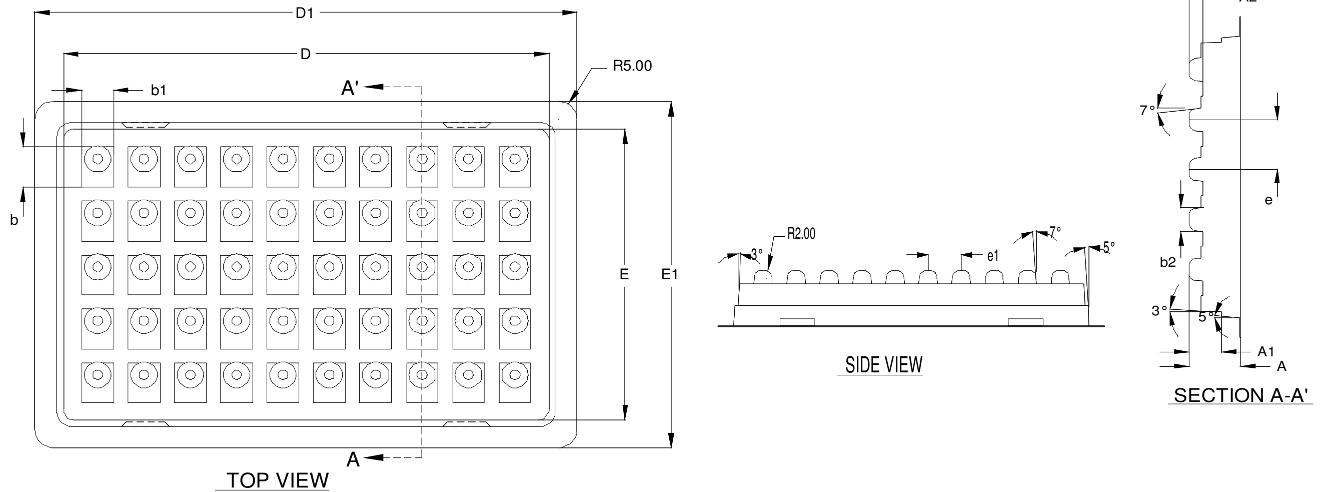
TRAY PACKAGING OPTIONS



SYMBOL	COMMON DIMENSION (mm)			COMMON DIMENSION (inch)		
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM
A	14.08	14.18	14.28	0.5543	0.5583	0.5622
A1	8.70	8.80	8.90	0.3425	0.3465	0.3504
A2	3.70	3.80	3.90	0.1457	0.1496	0.1535
b	11.00	11.00	11.05	0.4331	0.4331	0.4350
b1	8.50	8.50	8.55	0.3346	0.3346	0.3366
b2	7.10	7.10	7.15	0.2795	0.2795	0.2815
D	129.40	129.90	130.40	5.0945	5.1142	5.1339
D1	144.00	145.00	146.00	5.6693	5.7087	5.7480
e	14.78	14.80	14.82	0.5819	0.5827	0.5835
e1	12.38	12.40	12.42	0.4874	0.4882	0.4890
E	79.30	79.80	80.30	3.1220	3.1417	3.1614
E1	94.00	95.00	96.00	3.7008	3.7402	3.7795

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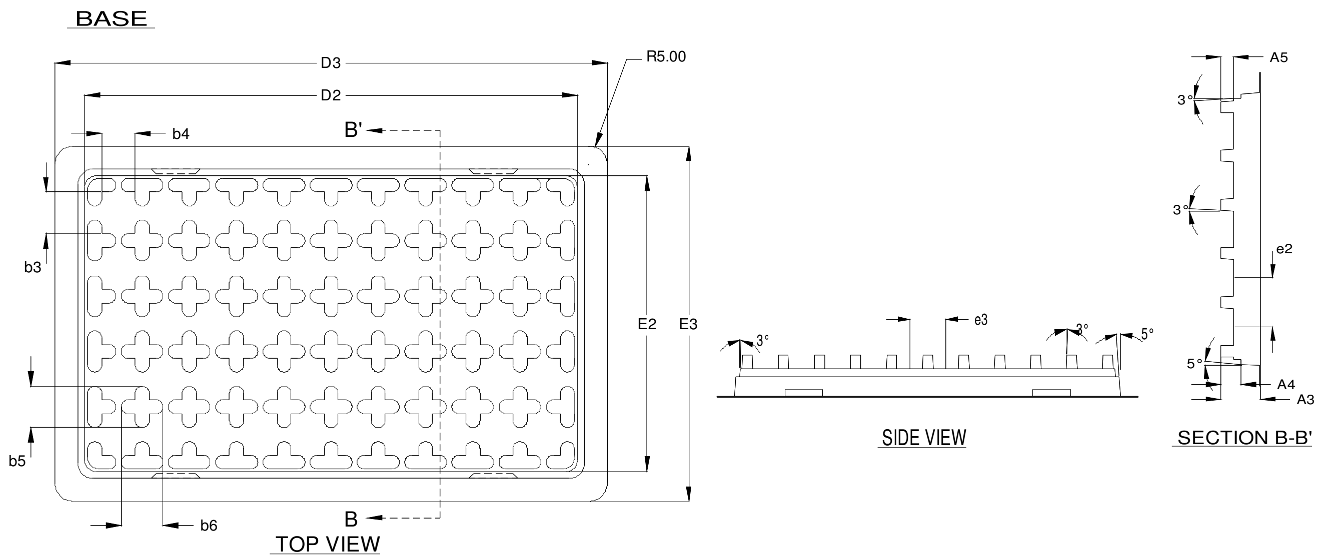

SYMBOL	COMMON DIMENSION (mm)			COMMON DIMENSION (inch)		
	MINIMUM	NOMINAL	MAXIMUM	MINIMUM	NOMINAL	MAXIMUM
A3	10.76	10.86	10.96	0.4236	0.4276	0.4315
A4	5.50	5.60	5.70	0.2165	0.2205	0.2244
A5	3.50	3.60	3.70	0.1378	0.1417	0.1457
b3	11.10	11.10	11.15	0.4370	0.4370	0.4390
b4	8.70	8.70	8.75	0.3425	0.3425	0.3445
b5	11.00	11.00	11.05	0.4331	0.4331	0.4350
b6	11.00	11.00	11.05	0.4331	0.4331	0.4350
D2	128.70	129.20	129.70	5.0669	5.0866	5.1063
D3	144.00	145.00	146.00	5.6693	5.7087	5.7480
e2	14.78	14.80	14.82	0.5819	0.5827	0.5835
e3	12.38	12.40	12.42	0.4874	0.4882	0.4894
E2	78.60	79.10	79.60	3.0945	3.1142	3.1339
E3	94.00	95.00	96.00	3.7008	3.7402	3.7795

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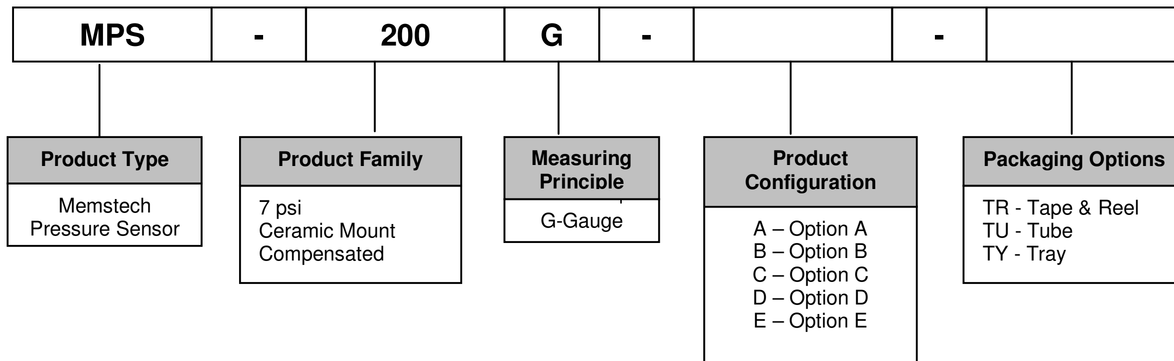
HOW TO SPECIFY PART NUMBER



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