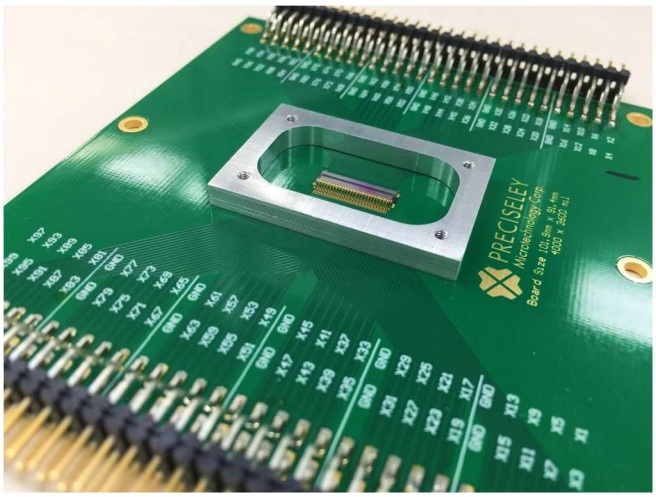
MA1 Evaluation Board Pinout

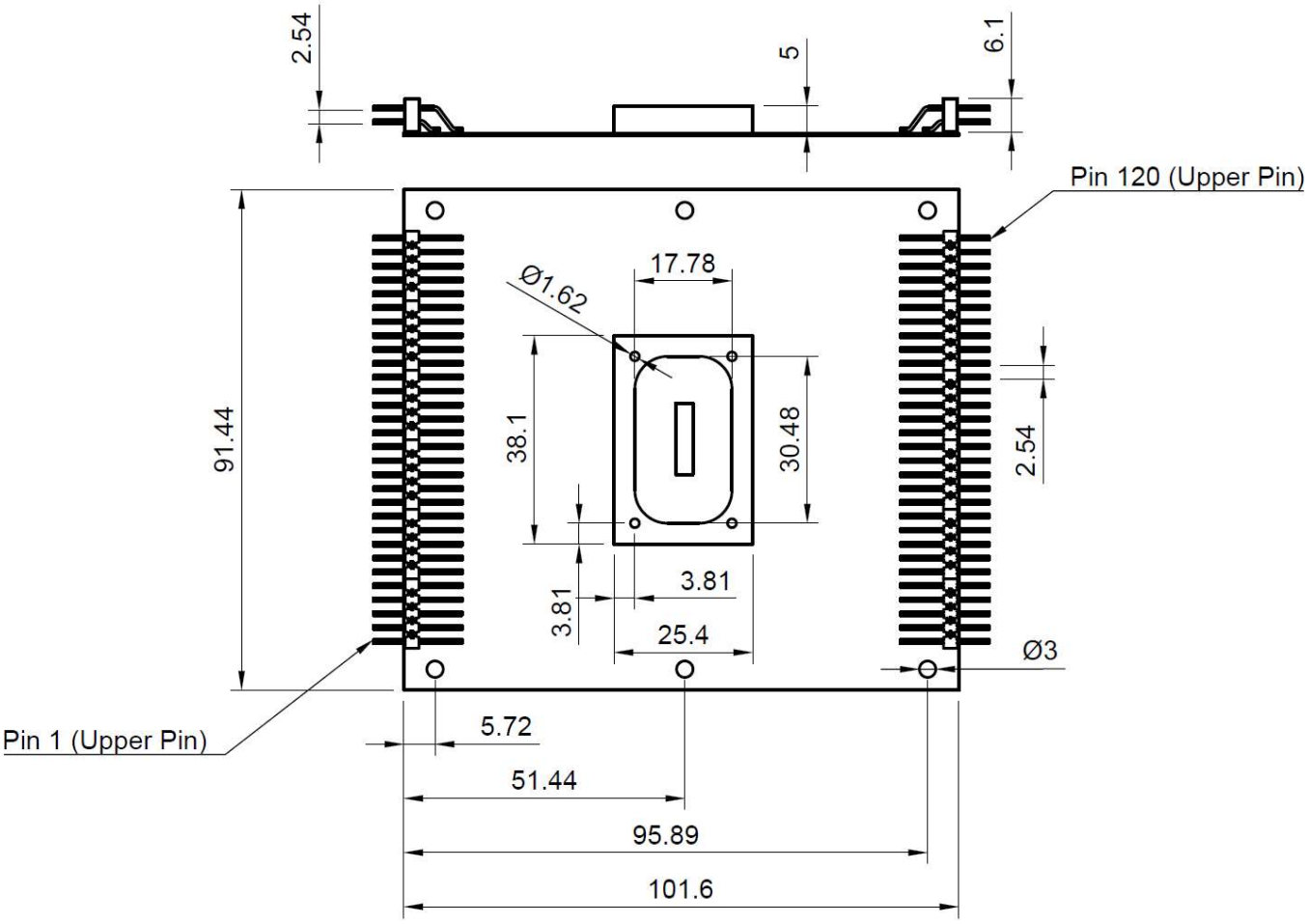
MEMs Evaluation board for MA1 Mirror Array

Features

- Easy to connect headers
- 99 independent single axis tilting
- M2.5 Mounting Holes
- Removable Dust Cover



Max Operating Voltage	200V
Total Pins	120
Mounting Hole Size	2.5mm
Pin Pitch	2.54mm



Preciseley Microtechnology Corporation
Innovation Center, 11421 Sask. Dr., Edmonton, Alberta, Canada T6G2M9
Tel: (780) 641 1925 Email: info@preciseley.com

Header	Mirror	Header	Mirror		Header	Mirror	Header	Mirror
60	99	*59*	97		*120*	GND	*119*	98
58	95	*57*	93		*118*	96	*117*	94
56	91	*55*	89		*116*	92	*115*	90
54	87	*53*	85		*114*	88	*113*	86
52	83	*51*	81		*112*	84	*111*	82
50	GND	*49*	GND		*110*	GND	*109*	82
48	79	*47*	77		*108*	80	*107*	78
46	75	*45*	73		*106*	76	*105*	74
44	71	*43*	69		*104*	72	*103*	70
42	67	*41*	65		*102*	68	*101*	66
40	GND	*39*	GND		*100*	GND	*99*	GND
38	63	*37*	61	Mirror Postion	*98*	64	*97*	62
36	59	*35*	57		*96*	60	*95*	58
34	55	*33*	53		*94*	56	*93*	54
32	51	*31*	49		*92*	52	*91*	50
30	GND	*29*	GND		*90*	GND	*89*	GND
28	47	*27*	45		*88*	48	*87*	46
26	43	*25*	41		*86*	44	*85*	42
24	39	*23*	37		*84*	40	*83*	38
22	35	*21*	33		*82*	36	*81*	34
20	GND	*19*	GND		*80*	GND	*79*	GND
18	31	*17*	29		*78*	32	*77*	30
16	27	*15*	25		*76*	28	*75*	26
14	23	*13*	21		*74*	24	*73*	22
12	19	*11*	17		*72*	20	*71*	18
10	GND	*9*	GND		*70*	GND	*69*	GND
8	15	*7*	13		*68*	16	*67*	14
6	11	*5*	9		*66*	12	*65*	10
4	7	*3*	5		*64*	8	*63*	6
2	3	*1*	1		*62*	4	*61*	2

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MA1

Single Axis MEMS Micro-mirror Array

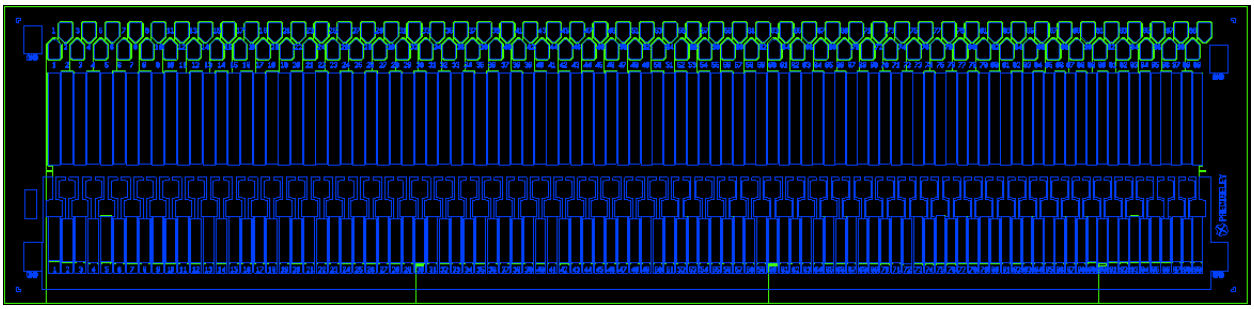
1.0 Application

Wavelength selective switch (WSS), display, optical tunable filter, wavelength blocker, Spectrometer

2.0 Key specification

- 99 mirrors
- Single axis tilting
- Varying mirror pitch/width
- Chip size: 13 x 3.1 mm
- Tilt angle: x: +3 deg.

3.0 Chip layout



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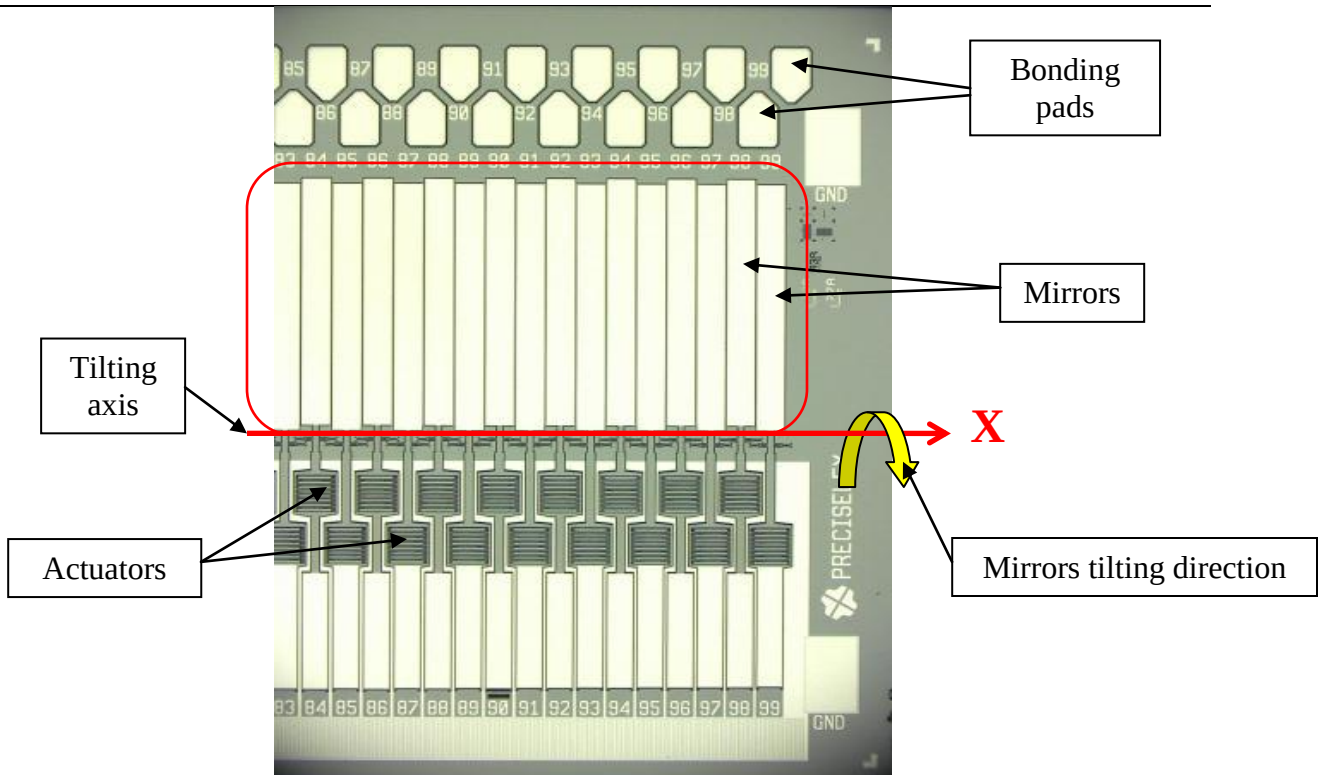
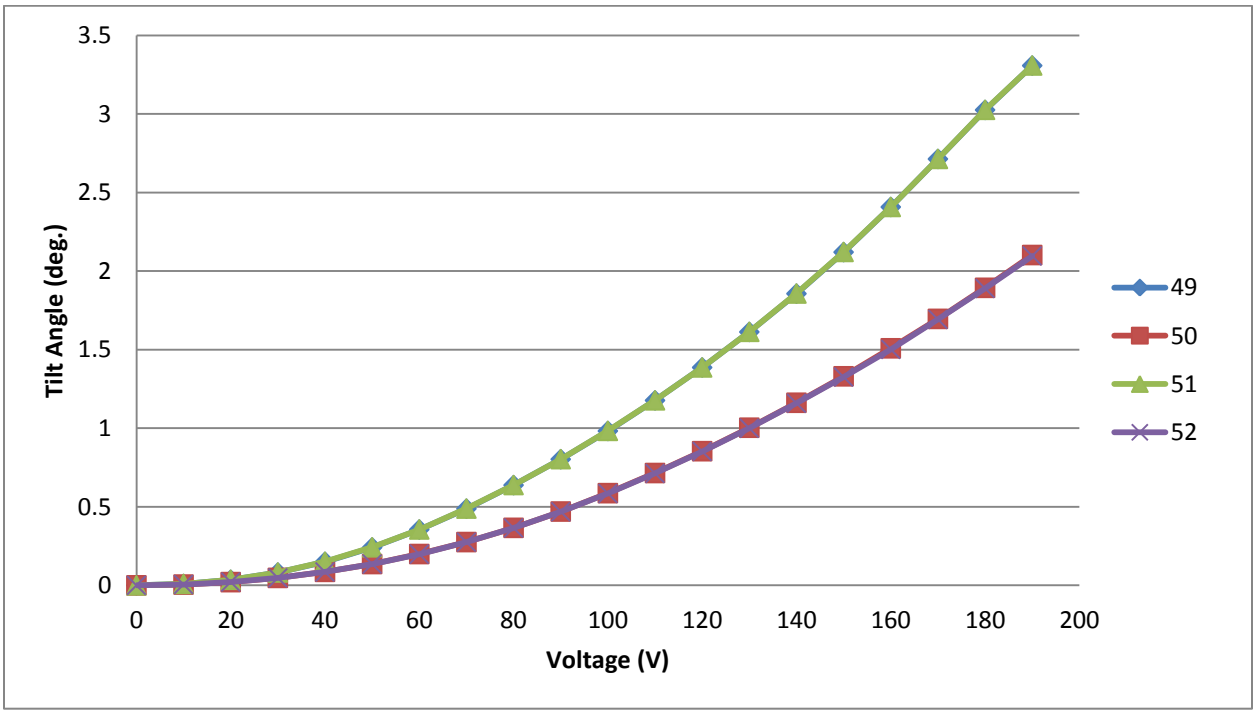


4.0 voltage actuation response (V-Theta)



5.0 Specification

Parameter	Condition	Unit	Specification		
			Min	Typical	Max
Array size	Ribbon Mirror	*no.*		99	
Chip dimension	Length	*mm*	12.8	13.0	13.2
	Width		3.08	3.1	3.12
	Thickness		0.62	0.63	0.64
Mirror dimension	Length	*µm*		960	
	Width (varying)		~100		~125
Mirror flatness	ROC	*m*	0.6	0.8	2
Reflectivity	1530 – 1625 nm (Metal reflector: Al thin film coating)	*%*	95		
Power Handling		*mW*			500
Damage voltage	At room temp.	*V*			210
Actuation voltage		*V*	*150*		200
Max. mirror tilting angle		*deg.*	2.7		3.1
Resonant frequency		*Hz*	*900*	1100	1300
Temperature Stability	Over -5 to 75 °C	*deg.*			0.001
Durability	Hermetic sealed	*Cycle*		10^9	
Operating temperature		*°C*	-5		75
Storage temperature range	5% humidity	*°C*	-40		85
Baking Temperature	Less than 3h	*°C*			110
Wirebond Temperature	Less than 5min	*°C*			150