

## MEMS Tilting Micro-Mirror Array

### 1. Key Specifications

- Single or dual axis tilting for each mirror
- One-dimensional linear mirror array; two-dimensional mirror matrix array
- Array Size: 1x40; 1x99; 5x5; 6X6
- Mirror size:  $\varnothing 0.82$ ,  $\varnothing 1.0$  mm in diameter;  $\sim 0.11 \times 0.94$  and  $0.24 \times 0.5$  in rectangular shape
- Max. tilt angle range: X  $\pm 7.5$  deg., Y  $\pm 8.0$  deg.
- Electrostatic actuation (quasi-static actuation); visually zero power consumption

### 2. Specifications

Parameters	Conditions	Unit	Specifications		
			Min	Typical	Max
Mirror Size	Circular	mm		$\varnothing 0.82$ and $\varnothing 1.0$	
	Rectangular			$\sim 0.11 \times 0.94$ and $0.24 \times 0.5$	
Array Size	1D linear or matrix array		1x40; 1x99; 5x5; 6X6		
Mirror Flatness	ROC	m	0.8	1	5
Reflectivity (Al or Au reflector)	1260-1660 nm	%	96		99
Power Handling		mW			500
Damage Voltage	X and Y axes	V	70		210
Actuation Voltage	X axis, at room temp.	V	60		200
	Y axis, at room temp.	V	60		200
Max Tilt Angle	X	deg.	$\pm 2.5$		$\pm 7.5$
	Y	deg.	$\pm 2.5$		$\pm 8.0$
Resonant Frequency	X	Hz	800		2,500
	Y	Hz	1,100		8,500
Response Time	From neutral to max tilt angle using a step function input	ms			1
Temperature Stability	Over -5 to 75 °C	deg.			0.001
Durability	Hermetically sealed	Cycle		$10^9$	
Operating Temperature		°C	-5		75
Storage Temperature Range	5% humidity	°C	-40		85
Baking Temperature	Less than 3h	°C			110
Wire Bond Temperature	Less than 5min	°C			150