

## **MEMS STEERING MIRROR**

### **OVERVIEW**

The **sercalo** MEMS 3D mirrors are used for precise optical beam steering. To avoid an optical feed back loop, the micromirror is designed to minimize effects such as drift, hysteresis and temperature dependent performance. The angle is set using electrostatic actuation.

### **FEATURES**

- Low drift
- 2 independent axis
- Continuous tilting
- Single mirror
- 1 mm diameter mirror
- High fill factor

### **APPLICATIONS**

- Optical Beam Steering
- Reconfigurable Add-Drop Multiplexer
- Vibration control in free space optics
- Optical Processor

#### **ORDERING INFORMATION**

TM-10                      *Ø1.0 mm mirror*

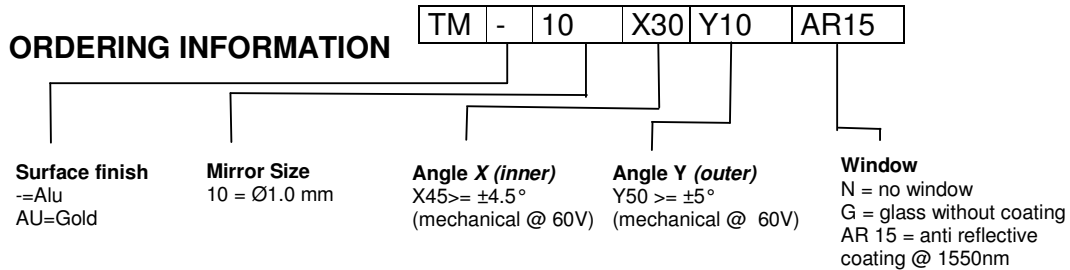
**Contact:**

Sercalo microtechnology ltd  
Landstrasse 151, 9494 Schaan  
Principality of Liechtenstein  
Tel. +423 237 57 97 Fax. +423 237 57 48  
www.sercalo.com  
e-mail:info@sercalo.com

## TYPICAL SPECIFICATIONS (All designs)

	Unit	Min	Typ	Max
Max. Actuation Voltage	V		60	70
Surface Finish	-		Al or Au	
Reflectivity (900-2000 nm)	%		95	
Mirror Size – X	μm	1000		
Mirror Size – Y	μm	1000		
Mirror Radius of Curvature	m	1.0		
Tilt Angle – X (Mechanical) @ 60 V	°		±4.5	
Tilt Angle – Y (Mechanical) @ 60 V	°		±4.5	
Resonant Frequency - X	Hz		640	
Resonant Frequency - Y	Hz		290	
Package		TO46		
ESD	Unprotected = VERY SENSITIVE Overvoltage above 70 V can permanently damage the device.			

## ORDERING INFORMATION



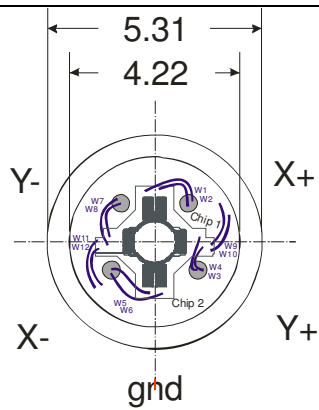


Figure 1: Pin layout of Ø1.0 mm micro-mirror chip on TO46

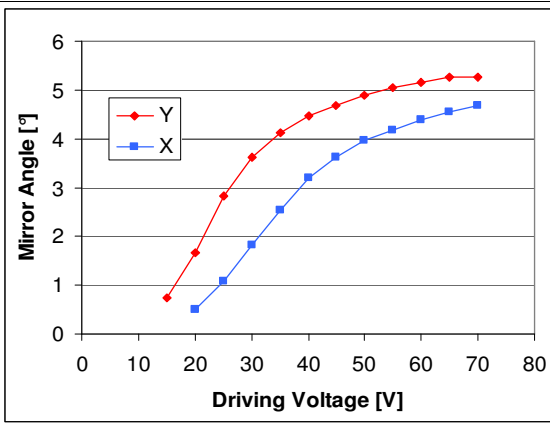


Figure 2: Typical tilt angle vs. applied voltage

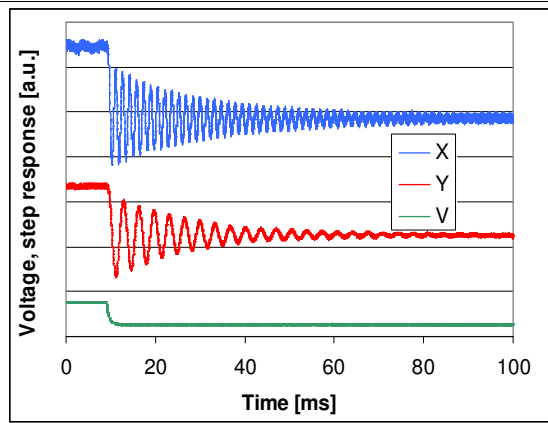


Figure 3: Typical step response