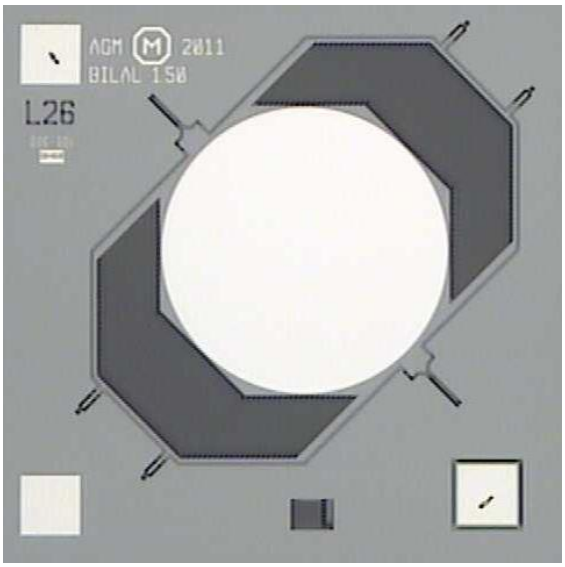
Low Voltage and High Voltage MEMS chips for Electrostatic Variable Optical Attenuator (ESVOA)

The AGM ESVOA family of products includes Low Voltage and High Voltage MEMS chips for Electrostatic Variable Optical Attenuators (ESVOA). These chips provide superior optical performance for fully packaged VOA products, while allowing for smaller package size and lower production costs. The chips are shipped to customers on industry standard Gelpaks. Performance specifications for the Low Voltage and High Voltage ESVOA chips are given below.



Part Numbers:

LV ESVOA MEMS chip:
AGM Part Number 786001
HV ESVOA MEMS chip:
AGM Part Number 786002
Protected by US Patent Nos.
7,863,799 and 7,986,073

Key Specifications:

Item	Parameter	Chip Type	Conditions	Value			Unit
				Min	Typ	Max	
1.	Excess Insertion Loss	LV, HV	Excess Insertion Loss of chip relative to perfect mirror			0.3	dB
2.	Chip Dimension	LV, HV	Length			1.7	mm
			Width			1.7	mm
3.	Operating temperature	LV, HV		-5		70	deg C
4.	Reflectivity	LV, HV	S, C, L band	95			%

5.	Radius of curvature	LV, HV		0.5			m
6.	Mirror diameter	LV, HV		840			um
7.	Max tilt angle	LV, HV		0.6			deg
8.	Voltages	LV	0.18 deg, 20dB	3.8		4.8	V
			0.37 deg, 45dB			6.5	V
		HV	0.33 deg, 40dB	11.2		14.2	V
9.	Resistance	LV, HV	Between Drive & Ground bondpads	5			MΩ
10.	Bondpad size	LV, HV	Square shape	150			um
11.	Mirror roughness	LV, HV				10	nm
12.	Attenuation change during in-situ vibration	LV, HV	20 - 2000 Hz, 5g acceleration, 20dB level, all axes	-0.2		+0.2	dB
13.	Attenuation change during in-situ shock	LV, HV	50g acceleration, 0.5 ms pulse, 20 dB level, all axes	-1.5		+1.5	dB
14.	Temperature Dependent Loss	LV, HV	-5 to 70C at 20 dB level	-1.2		+1.2	dB
15.	Time response	LV, HV	Switching between 0, 20 dB, 10% - 90%			2	ms
16.	Optical Power handling	LV, HV	CW in C or L band			500	mW
17.	Repeatability	LV, HV	Attenuation difference at 20 dB between voltage ramping up and down.			0.1	dB
18.	ESD	LV, HV	Standard electrostatic discharge testing			500	V