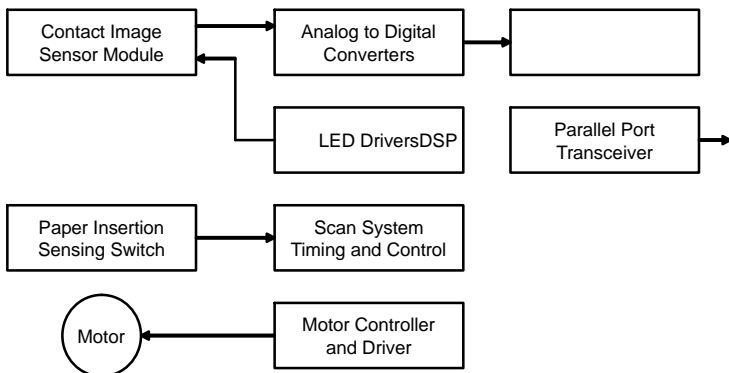




- Light Source, Lens and Sensor are Integrated Into a Single Module
- 216 mm Scanning Width at 7.9 dots per mm Resolution
- 90  $\mu$ sec/Line Scanning Speed @ 5.0 MHz Pixel Rate
- Four Parallel Analog Video Outputs
- Supports A4 Paper Size at up to 286 Pages per Minute
- White LED Light Source
- Wide Dynamic Range
- Compact 232.1 mm x 19.2 mm x 13.7 mm Module Housing
- Low Power
- Light Weight 2.5 oz Packaging
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

**Applications**

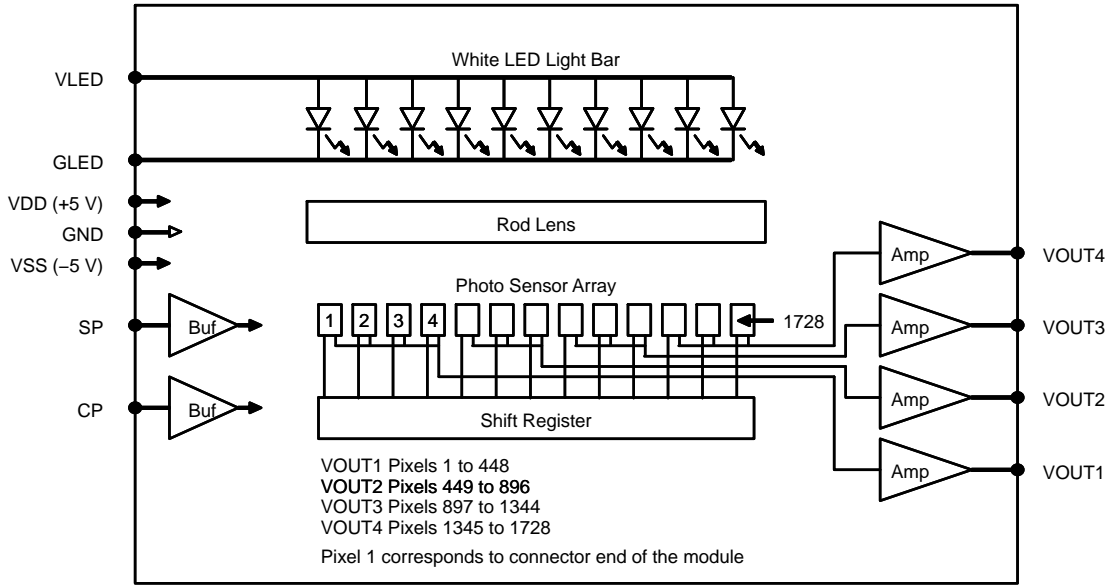
- Currency Verification
- Document Scanning
- Mark Readers Including Balloting, Test Scoring and Gaming Machines
- Office Automation Equipment



# NOM02A4-MW60G

**Table 1. ORDERING INFORMATION**

Part Number	Package	Shipping Configuration
NOM02A4-MW60G	(Pb-free)	100 per packing carton



**Figure 2. Simplified Block Diagram**

**Table 2. PIN FUNCTION DESCRIPTION**

Pin	Pin Name	Description

# NOM02A4–MW60G

**Table 3. ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Value	Unit
Power supply voltage	$V_{DD}$	7	V
	$V_{SS}$	-15	V
	$V_{LED}$	6	V
Power supply current	$I_{LED}$	550	mA
Input voltage range for SP, CP	$V_{in}$	-0.5 to $V_{DD} + 0.5$	V
Storage Temperature	$T_{STG}$	-20 to 75	°C
Storage Humidity, Non-Condensing	$H_{STG}$	10 to 90	%
ESD Capability, Contact Discharge (Note 1)	$ESD_{HBM}$	± 2	kV

Stresses

Typ	Unit
216	mm
27	arrays
728	elements
448	elements
384	elements

Typ	Max	Unit
125		μm
180	210	μm
0	40	μm
0.24 0.23	0.305 0.31	

Value	Unit
5.0	V
-5.0	V
5.0	V
5.0	MHz
25	%
90	μs
26	ms
356	ms

# NOM02A4–MW60G

**Table 8. ELECTRO–OPTICAL CHARACTERISTICS** (Unless otherwise specified, these specifications were achieved with the test conditions defined in Table 7)

Parameter	Symbol	Min	Typ	Max	Unit
Bright analog output voltage (Note 10)	$V_{pavg}$	0.9	1.0	1.1	

# NOM02A4–MW60G

## DESCRIPTION OF OPERATION

### Functional Description

The NOM02A4–MW60G module consists of 27 contact image sensors, each with 64 pixel elements, that are cascaded to provide 1728 photo–detectors with their associated multiplex switches and four double–buffered digital shift registers that control its sequential readout. Four buffer amplifiers amplify the video pixels from the image sensors and output the four analog video signals of the module as shown in Figure 2. In operation, the sensors

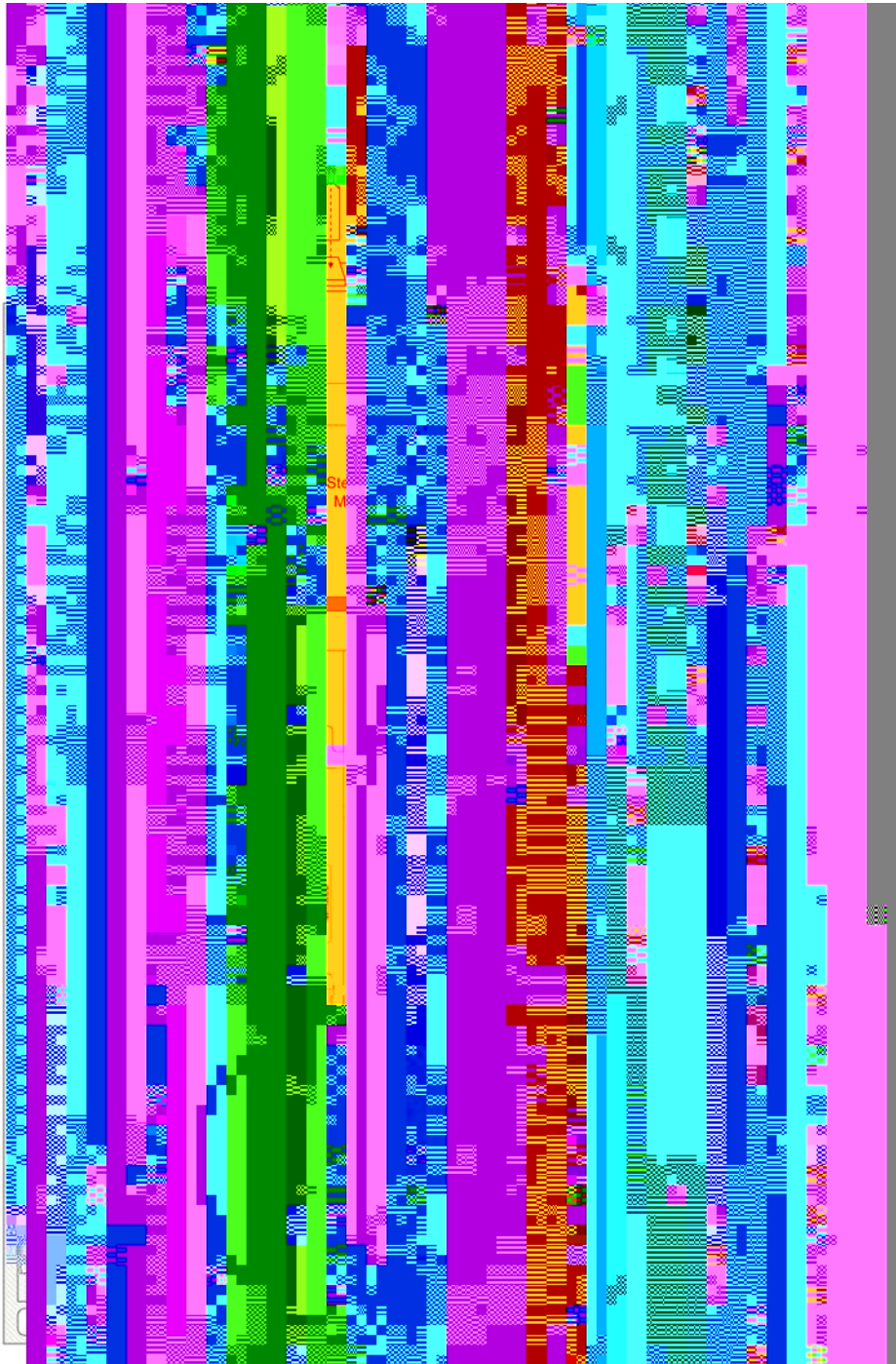


Figure 6. Typical Scanner Assembly



# **NOM02A4-MW60G**

## **PACKAGE DIMENSIONS**

### **IMAGE SENSOR MODULE A4 CASE MODAB ISSUE B**

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.

