



GC83000 – GC83006

Binary Digital MNS Capacitor Arrays

GENERAL DESCRIPTION

The GC83000 series of binary digital MNS Capacitor Arrays provide a convenient, cost effective, high performance solution to the problem of capacitance value adjustment in today's high density microwave hybrid circuitry. They consist of single monolithic die with 4 gold bonding pads with binary capacitance values. Any combination of pads can be bonded in parallel to achieve 16 bits of adjustment range with 1 bit resolution. The die has a common gold backside metalization which is suitable for solder or conductive epoxy die attach. The bonding pads have gold metalization for thermocompression, thermosonic or ball bonding. The dielectric is low loss silicon dioxide and is sealed with our tough MIL-spec silicon nitride passivation. Six different sets of binary arrays are available with single bit capacitance values that range from 0.25 pF to 8.0 pF. Custom value sets are also available-contact our applications engineering department for details and Availability.

APPLICATIONS

Capacitance value trimming, select-at test capacitance values, bread boarding, or adjustable signal path coupling in hybrid circuitry such as VCO.s, VCXO.s, switches, limiters, phase shifters, amplifiers, etc.

KEY FEATURES

- 16 Bits / 4 Binary Value Bonding Pads Per Chip
- Values for VHF to 18 GHz
- Gold Metalization for Chip and Wire Assembly
- Ultra Stable Silicon Oxide/Nitride Dielectric
- Much Lower Parasitics then Ceramic Arrays
- Typical Losses of 0.1 dB to 18 GHz
- RoHS Compliant

ABSOLUTE MAXIMUM RATINGS @ 25°C

Rating	Symbol	Value	Unit
Operating Temperature	T _{OP}	-55 to +150	°C
Storage Temperature	T _{STG}	-65 to +200	°C
Breakdown Voltage @10μA	V _B	100 Min.	V
Temperature Coefficient	ppm	190 Max.	°C

For the most current data, consult MICROSEMI's website: www.MICROSEMI.com
Specifications are subject to change, consult the RFIS factory at (978) 442-5600 for the latest information.



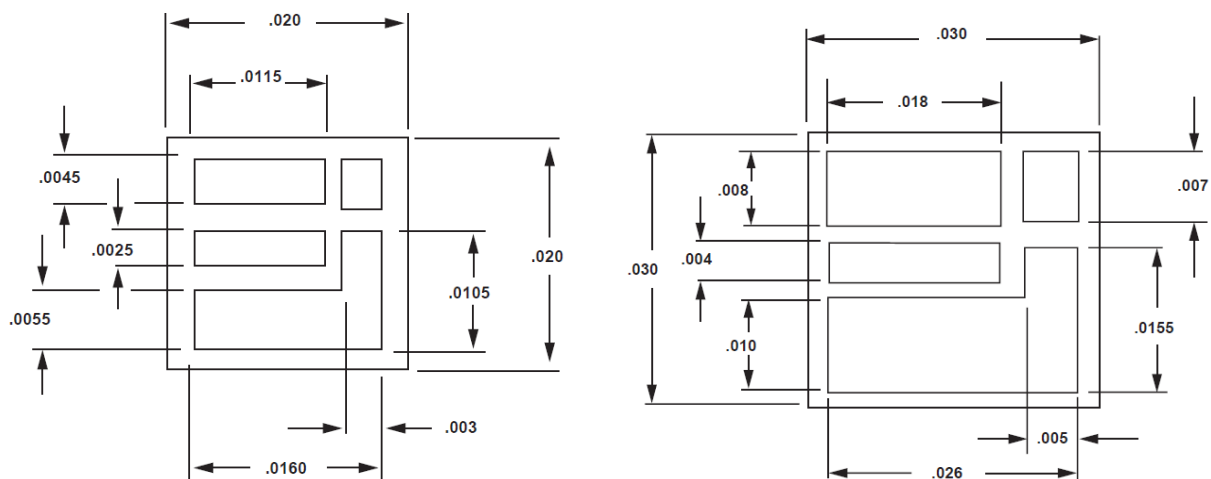
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DEVICE ELECTRICAL PARAMETERS AT 25°C

Model Number	SINGLE BIT ±10% (pF)	FULL VALUE ±10% (pF)	DIE SIZE ±2 (MILS)
GC83001	0.25	3.75	20 x 20 x 7
GC83002	0.50	7.50	20 x 20 x 7
GC83003	1.00	15.00	20 x 20 x 7
GC83004	2.00	30.00	20 x 20 x 7
GC83005	4.00	60.00	30 x 30 x 7
GC83006	8.00	120.00	30 x 30 x 7

BINARY DIGITAL MNS CAPACITOR ARRAYS



Dimensions in inches ± 0.002

Revision History

Revision Level / Date	Para. Affected	Description
1 / 10-15-2014	-	Initial Release

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