

Axial Lead Abrupt Tuning Varactors

MA45300 Series

V 2.00

Features

- High Q
- Low Leakage
- Low Post Tuning Drift
- Frequency Range Through X-band
- Can Be Screened to TX, TXV Specifications

Description

The MA45300 series of silicon abrupt junction tuning varactors has been designed to obtain the highest Q possible. All diodes in this series have a high density silicon dioxide passivation which results in low leakage currents, low phase noise and low post tuning drift. These diodes are available in axial lead glass packages.

Applications

This series of silicon abrupt tuning varactors is designed for applications through S-band. Silicon abrupt junction tuning varactors are useful for transistor VCOs and tunable filters, phase shifters or pre-selectors.

Environmental Performance

All tuning varactors in the MA45300 series are capable of meeting the performance tests dictated by the methods and procedures of the latest revisions of MIL-S-19500 MIL-STD-202 and MIL-STD-750 which specifies mechanical, electrical, thermal and other environmental tests common to semiconductor products.

High Reliability Parts

All diodes in the MA45300 series may be screened to TX or TX-V specifications.

Maximum Ratings

Reverse Voltage	30 V
Operating Temperature	-65°C to +150°C
Storage Temperature	-65°C to +150°C
Temperature Coefficient	300ppm/°C at -4 Volts
Power Dissipation (Derate linearly to zero at 150°C)	200mW

Case Style 54



Specifications @ T_A = +25°C

30 Volt Axial Lead Silicon Tuning Varactors

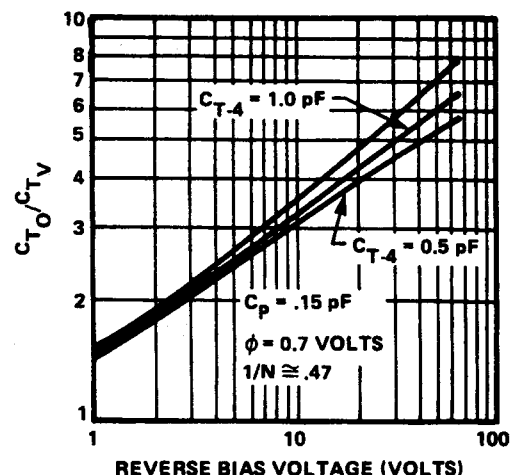
Model ¹ Number	Total ² Capacitance (pF)	Minimum Capacitance Ratio C _{T0} /C _{TV}	Typical ³ "Q" (@ -4 Volts)
MA45330	4.7	4.5	1800
MA45331	5.6	4.5	1700
MA45334	10	4.6	1300
MA45336	15	4.6	1200
MA45337	18	4.6	1100
MA45338	22	4.6	1000

Notes:

1. All silicon abrupt junction varactors in this series are available as standard products in the axial lead glass package, case style 54. See appendix for complete dimensions.
2. Standard capacitance tolerances are ± 10%. A tighter tolerance (± 5%) may be obtained by adding the suffix "A" to the diode model number.
3. Diode Q is calculated at -4 volts and 50 MHz using values of R_S measured at 500 MHz and values of junction capacitance measured at 1 MHz.

Typical Performance Curves

TYPICAL CAPACITANCE CHANGE RATIO FOR
SILICON TUNING VARACTORS



Specifications Subject to Change Without Notice.