

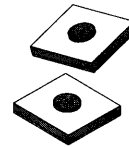
# GaAs Abrupt Junction Varactor Diodes



GMV7801 to GMV7805

## Features

- Low Series Resistance – High Q
- Low Capacitance Values for Applications at Millimeter Wave Frequencies
- Available in Chips and Package Diodes



## Description

Gallium arsenide abrupt junction varactor diodes changes capacitance as a function of applied reverse bias voltage, following the square root law ( $\gamma \approx 0.5$ ). The high electron mobility of gallium arsenide translates into a very low series resistance and very high Q for the gallium arsenide varactor. For example, Q of a gallium arsenide abrupt junction varactor is two to three times higher than its silicon counterpart. However, in certain applications the gallium arsenide varactor exhibits a higher surface noise, in comparison to silicon varactor.

## Maximum Ratings

Reverse Voltage, $V_R$ :	25V
Forward Current, $I_F$ :	100 mA
Power Dissipation at 25°C:	250 mW
Operating Temperature:	-55 to 150°C
Storage Temperature:	-65 to 200°C

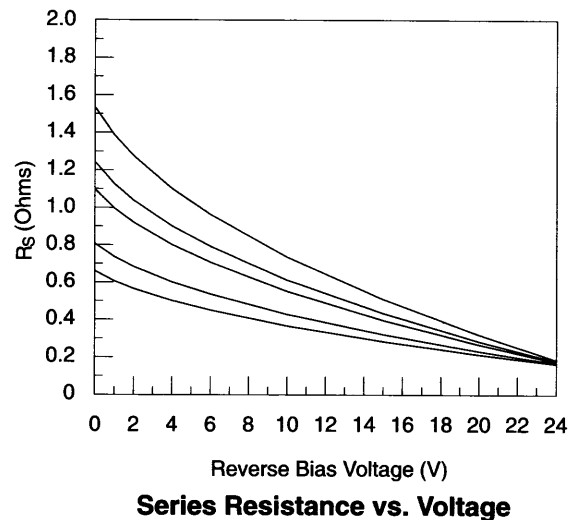
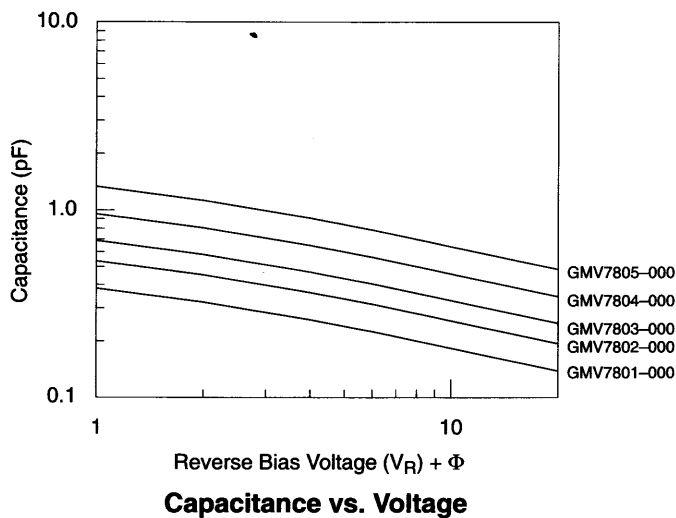
## Electrical Specifications at 25°C

### GaAs Varactor Chips

Part Number	$V_{BR}$ (10 $\mu$ A) (V)	$I_R$ (20V) (nA)	Junction Capacitance Ratio $C_J(0) / C_J(25)$	Junction Capacitance $C_J$ @ 0V (pF)		Series Resistance $R_S$ @ 4V 50 MHz ( $\Omega$ )	Q @ 4V 50 MHz	Outline Chip Number
	Min.	Max.	Min.	Min.	Max.	Max.	Min.	
▶ GMV7801-000	25	100	3.7	0.4	0.6	1.1	15,000	150-808
▶ GMV7802-000	25	100	3.7	0.6	0.8	0.9	12,000	150-808
GMV7803-000	25	100	3.7	0.8	1.0	0.8	10,000	150-807
GMV7804-000	25	100	3.7	1.0	1.5	0.7	8,500	150-807
GMV7805-000	25	100	3.7	1.5	2.0	0.6	7,000	150-807

▶ Available through distribution.

## Performance Data



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## Package Outlines

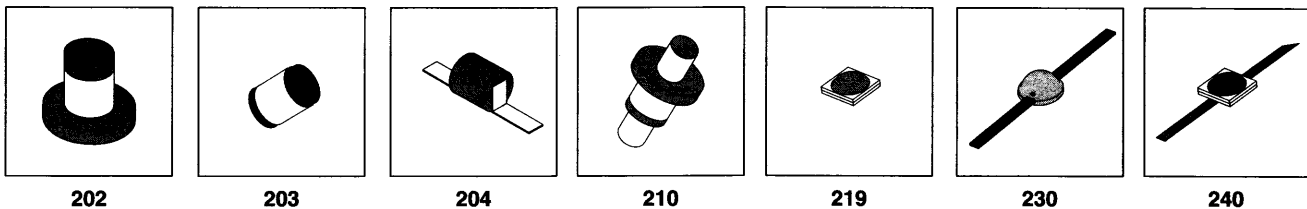
GaAs diodes are available as dice and in a variety of package outlines. Consult the factory for availability. The packages are designed to facilitate the handling of devices and circuit placement. However, the package may influence the device's performance. Please refer to Outline Drawings section for catalog package outlines, their characteristics, and their effect on electrical parameters of the diode.

## Ordering Information

The following packages are also available. To order a part in a different package just replace the dash number with a package style listed below. For example, GMV7801-000 becomes GMV7801-210.

**Available Package Outlines:** 202, 203, 204, 210, 219, 230, 240

Refer to the Outline Drawings section in this catalog for the total selection of outline (package) dimensions.



## Outline Dimensions

### 150-807, 150-808

