GaAs Hyperabrupt Varactor Diodes 0.75 Constant Gamma

Features

- 0 to 18 V Tuning Voltage
- Tuning Ratios up to 10
- Screening Available per: MIL-PRF-19500 and MIL-PRF-35834
- RoHS* Compliant
- Also Available in 1.0 and 1.25 Constant Gamma Families: MGV100-x and MGV125-x

Description

The MGV series of hyperabrupt varactor diodes feature passivated mesa construction for low leakage and excellent post tuning drift. Available in three constant gamma families of 0.75, 1.0 and 1.25.

These diodes will find application in tunable filters and oscillators up to 40 GHz. Optimum performance is obtained using die however packaged devices are available as well screened per MIL-PRF-19500 and MIL-PRF-38534.

	Total Capacitance (pF)			Tuning Ratio			Q
Model	V _R = 4 V, 1 MHz			V _R = 2 to 12		V _R = 2 to 18	V_R = 4 V, 50 MHz
	Min.	Nom.	Max.	Min.	Тур.	Тур.	Min.
MGV075-08	0.25	0.30	0.35	2.2	2.8	3.5	4,000
MGV075-09	0.35	0.40	0.45	2.2	2.8	3.5	4,000
MGV075-10	0.45	0.50	0.55	2.2	2.8	3.5	3,000
MGV075-11	0.63	0.70	0.77	2.2	2.8	3.5	3,000
MGV075-12	0.72	0.80	0.88	2.2	2.8	3.5	3,000
MGV075-13	0.90	1.00	1.10	2.2	2.8	3.5	3,000
MGV075-14	1.08	1.20	1.32	2.2	2.8	3.5	3,000
MGV075-15	1.35	1.50	1.65	2.2	2.8	3.5	3,000
MGV075-16	1.62	1.80	1.98	2.2	2.8	3.5	3,000
MGV075-17	1.80	2.00	2.20	2.2	2.8	3.5	3,000

Chip (C01A) Electrical Specifications: $T_A = +25^{\circ}C$, $V_B = 18$ V min., $I_R = 100$ nA max.

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

1

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Rev. V1







Packaged (E28, 28X, H20, P55, 0805-2) Electrical Specifications: $T_A = +25^{\circ}$ C, $V_B = 18$ V min., $I_R = 100$ nA max.

Model	Total Capacitance (pF)			Tuning Ratio			Q	
	V _R = 4 V, 1 MHz			$V_{\rm R}$ = 2 to 12 $V_{\rm R}$ = 2 to 7			18 V _R = 4 V, 50 MHz	
	Min.	Nom.	Max.	Min.	Тур.	Тур.	Min.	
MGV075-08-E28 / 28 X	0.32	0.38	0.44	1.4	2.2	2.7	4,000	
MGV075-08H20	0.41	0.48	0.56	0.4	1.4	1.7	4,000	
MGV075-08-P55	0.36	0.43	0.50	0.9	1.8	2.2	4,000	
MGV075-08-0805-2	0.30	0.36	0.42	1.6	2.3	2.9	4,000	
MGV075-09-E28 / 28 X	0.42	0.48	0.54	1.6	2.3	2.9	4,000	
MGV075-09-H20	0.51	0.58	0.66	0.9	1.7	2.1	4,000	
MGV075-09-P55	0.46	0.53	0.60	1.3	2.0	2.5	4,000	
MGV075-09-0805-2	0.40	0.46	0.52	1.8	2.4	3.0	4,000	
MGV075-10-E28 / 28 X	0.52	0.58	0.64	1.8	2.4	3.0	3,000	
MGV075-10-H20	0.61	0.68	0.76	1.2	1.9	2.4	3,000	
MGV075-10-P55	0.56	0.63	0.70	1.5	2.1	2.7	3,000	
MGV075-10-0805-2	0.50	0.56	0.62	1.9	2.5	3.1	3,000	
MGV075-11-E28 / 28 X	0.70	0.78	0.86	1.9	2.5	3.1	3,000	
MGV075-11-H20	0.79	0.88	0.98	1.5	2.1	2.7	3,000	
MGV075-11-P55	0.74	0.83	0.92	1.7	2.3	2.9	3,000	
MGV075-11-0805-2	0.68	0.76	0.84	2.0	2.6	3.2	3,000	
MGV075-12-E28 / 28 X	0.79	0.88	0.97	1.9	2.5	3.2	3,000	
MGV075-12-H20	0.88	0.98	1.09	1.6	2.2	2.8	3,000	
MGV075-12-P55	0.83	0.93	1.03	1.7	2.4	3.0	3,000	
MGV075-12-0805-2	0.77	0.86	0.95	2.0	2.6	3.3	3,000	
MGV075-13-E28 / 28 X	0.97	1.08	1.19	2.0	2.6	3.2	3,000	
MGV075-13-H20	1.06	1.18	1.31	1.7	2.3	2.9	3,000	
MGV075-13-P55	1.01	1.13	1.25	1.8	2.5	3.1	3,000	
MGV075-13-0805-2	0.95	1.06	1.17	2.0	2.6	3.3	3,000	
MGV075-14-E28 / 28 X	1.15	1.28	1.41	2.0	2.6	3.3	3,000	
MGV075-14-H20	1.24	1.38	1.53	1.8	2.4	3.0	3,000	
MGV075-14-P55	1.19	1.33	1.47	1.9	2.5	3.2	3,000	
MGV075-14-0805-2	1.13	1.26	1.39	2.1	2.7	3.3	3,000	
MGV075-15-E28 / 28 X	1.42	1.58	1.74	2.1	2.7	3.3	3,000	
MGV075-15-H20	1.51	1.68	1.86	1.9	2.5	3.1	3,000	
MGV075-15-P55	1.46	1.63	1.80	2.0	2.6	3.2	3,000	
MGV075-15-0805-2	1.40	1.56	1.72	2.1	2.7	3.4	3,000	
MGV075-16-E28 / 28 X	1.69	1.88	2.07	2.1	2.7	3.4	3,000	
MGV075-16-H20	1.78	1.98	2.19	1.9	2.5	3.2	3,000	
MGV075-16-P55	1.73	1.93	2.13	2.0	2.6	3.3	3,000	
MGV075-16-0805-2	1.67	1.86	2.05	2.1	2.7	3.4	3,000	
MGV075-17-E28 / 28 X	1.87	2.08	2.29	2.1	2.7	3.4	3,000	
MGV075-17-H20	1.96	2.18	2.41	1.9	2.6	3.2	3,000	
MGV075-17-P55	1.91	2.13	2.35	2.0	2.6	3.3	3,000	
MGV075-17-0805-2	1.85	2.06	2.27	2.1	2.7	3.4	3,000	

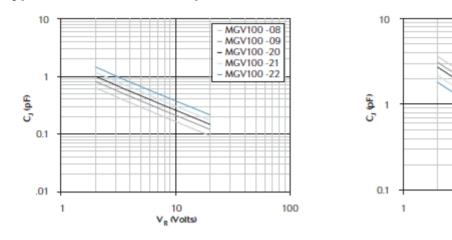
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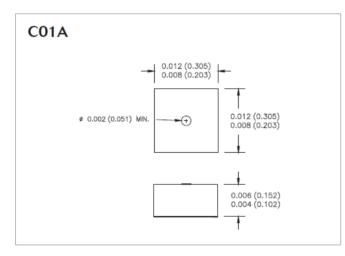
Rev. V1

GaAs Hyperabrupt Varactor Diodes 0.75 Constant Gamma

Typical Performance, Chips



Chip Outline Drawings



3

Rev. V1



MGV100 -23 MGV100 -24

MGV100 -25

MGV100 -26

MGV100 -27

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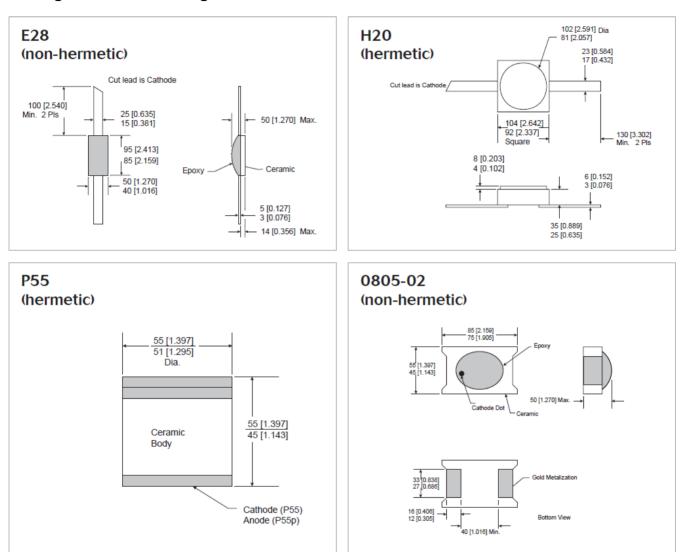
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10

V_R (Volts)

GaAs Hyperabrupt Varactor Diodes 0.75 Constant Gamma

Packaged Outline Drawings



Package Style	Capacitance @ 1 GHz	Inductance @ 1 GHz
E28 / 28X	0.08	0.40
H20	0.18	0.50
P55	0.13	0.35
0805-2	0.06	0.40

4

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Rev. V1

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Rev. V1

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