

CONTROLLED GAMMA TUNING DIODES

Series
GA3120-GA3930
GA4120-GA4630
GA5120-GA5530
GA6120-GA6530

The capacitance voltage exponent, γ , is specified for a prescribed voltage range in the GA series tuning diode to facilitate uses in many frequency-voltage tuning applications. Over a one volt range at an operating bias of 3.5, 4.5, 5.5 or 6.5 volts, a diode with $\gamma = 2.0$ min/2.9 max or 3.0 min/3.9 max can be selected to meet specific requirements. For ready confirmation, γ is determined by measurements of the ratio of capacitances at $\frac{1}{2}$ volt either side of the operating bias. In the example in Fig. 1 for Type No. GA3530, $C_{3.5} = 40.33$ pf and the capacitance ratio $C_3/C_4 = 2.51$ indicating the $\gamma = 3.0/3.9$ category. With familiar capacitance measurements, diodes with the required values of γ can be readily selected for incorporation into circuits to achieve the performance desired.

The GA series, supplied in axial leaded DO-7 glass, may be ordered in surface mount packages by replacing GA with 1M in the Type No.

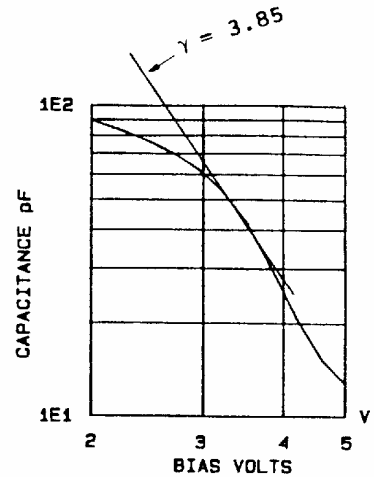


Fig. 1 - Type No. GA3530 with $\gamma = 3.85$

RATINGS

Ratings	Symbol	Value
Reverse Voltage	VR	12 Vdc min @ IR=10 uA
Reverse Voltage Leakage Current	IR	0.01 uAdc max @ VR=10V
Figure of Merit	Q2	200 min @ 2V/1MHz
Case Capacitance	Cc	0.2 pf Nominal
Series Inductance	Ls	5.0 nh Typical

ELECTRICAL CHARACTERISTICS

CT (pf) @ 3.5V/1MHz min/max	3.5 Volt Bias Operation	
	Capacitance Ratio C3/C4	
16.6/19.8	GA3120	GA3130
19.9/24.2	GA3220	GA3230
24.3/29.7	GA3320	GA3330
29.8/36.3	GA3420	GA3430
36.4/42.9	GA3520	GA3530
43.0/51.7	GA3620	GA3630
51.8/61.6	GA3720	GA3730
61.7/74.8	GA3820	GA3830
74.9/89.9	GA3920	GA3930
90.0/110.	GA3020	GA3030
$\gamma =$	2.0/2.9	3.0/3.9

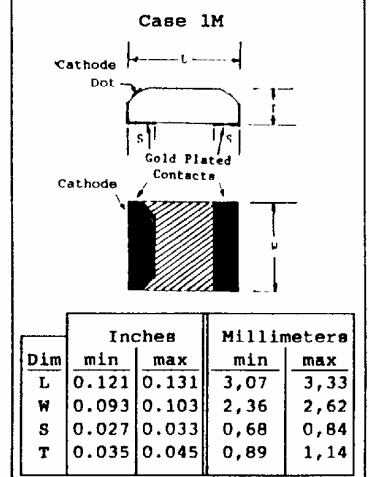
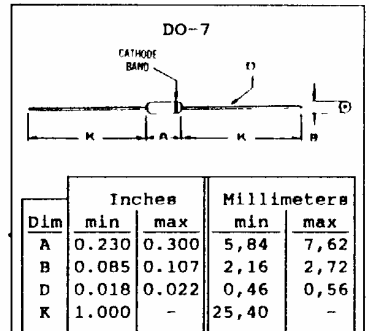
CT (pf) @ 5.5V/1MHz min/max	5.5 Volt Bias Operation	
	Capacitance Ratio C5/C6	
16.6/19.8	GA5120	GA5130
19.9/24.2	GA5220	GA5230
24.3/29.7	GA5320	GA5330
29.8/36.3	GA5420	GA5430
36.4/42.9	GA5520	GA5530
$\gamma =$	2.0/2.9	3.0/3.9

CT (pf) @ 6.5V/1MHz min/max	6.5 Volt Bias Operation	
	Capacitance Ratio C6/C7	
16.6/19.8	GA6120	GA6130
19.9/24.2	GA6220	GA6230
24.3/29.7	GA6320	GA6330
29.8/36.3	GA6420	GA6430
32.4/42.9	GA6520	GA6530
$\gamma =$	2.0/2.9	3.0/3.9

CT (pf) @ 4.5V/1MHz min/max	4.5 Volt Bias Operation	
	Capacitance Ratio C4/C5	
16.6/19.8	GA4120	GA4130
19.9/24.2	GA4220	GA4230
24.3/29.7	GA4320	GA4330
29.8/36.3	GA4420	GA4430
36.4/42.9	GA4520	GA4530
43.0/51.7	GA4620	GA4630
$\gamma =$	2.0/2.9	3.0/3.9

Notes:

- Diode capacitance to closer tolerance than those tabulated above may be ordered by specifying the Type No. with the desired min/max values of CT.
- To order passivated diode chips, add "chip" after the Type No.



This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.