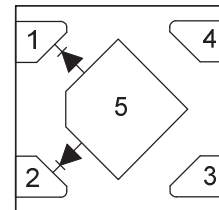


Features

- High capacitance ratio: $C_{0V} / C_{5V} = 3.4$ (typ.)
- Low series resistance for low phase noise
- Designed for high volume commercial applications
- Available in tape and reel packaging
- Industry Standard DFN1x1-4L Package



Functional Block Diagram

Product Description

The YVC126P034RD device is GaAs hyperabrupt junction varactor diodes specifically designed for 3 V platforms. The specified high capacitance ratio and low R_S of these varactors make them attractive for low phase noise VCOs in wireless systems up to and beyond 2.5GHz. Applications include low-noise and wideband UHF and VHF VCO for GSM, PCS, CDMA and analog phones.

Absolute Maximum Ratings

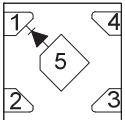
Characteristic	Rating	Unit
Reverse voltage (V_R)	15	V
Forward current (I_F)	20	mA
Power dissipation (P_D)	250	mW
Storage temperature (T_{ST})	-55 to +150	°C
Operating temperature (T_{OP})	-55 to +125	°C
ESD human body model	Class1B	

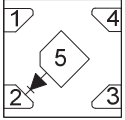
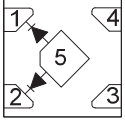


Caution!

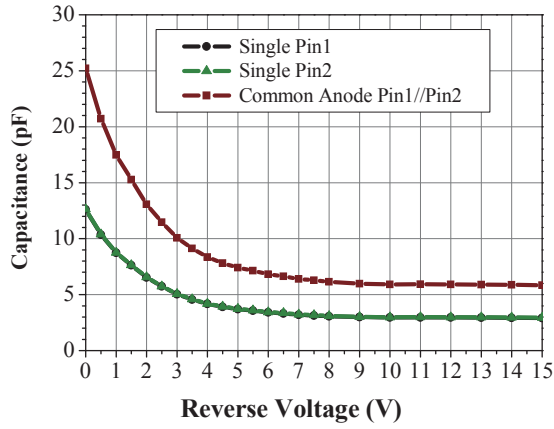
Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability.

Electrical Specifications@25 °C

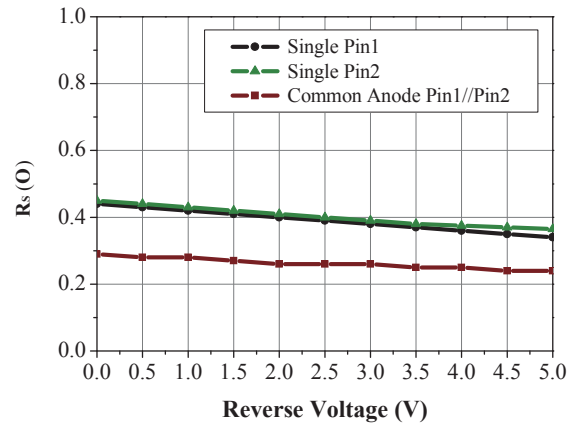
Applications	Parameter	Condition	Specification			Unit
			Min.	Typ.	Max.	
Single Pin1 	Reverse Current (I_R)	$V_R = 15\text{ V}$			20	nA
	Capacitance (C_T)	$C_T @ 0.5\text{ V}, V_R = 0.5\text{ V}, F = 10\text{ MHz}$		10.36		pF
	Capacitance (C_T)	$C_T @ 5\text{ V}, V_R = 5\text{ V}, F = 10\text{ MHz}$		3.7		pF
	Capacitance Ratio (C_{TR})	$C_T(0.5\text{ V})/C_T(5\text{ V})$		2.8		
	Series Resistance (R_S)	$V_R = 1\text{ V}, F = 100\text{ MHz}$			0.42	Ω
	Breakdown Voltage (V_{BR})	$I_R = 10\ \mu\text{A}$	20			V

Applications	Parameter	Condition	Specification			Unit
			Min.	Typ.	Max.	
Single Pin2 	Reverse Current (I_R)	$V_R = 15\text{ V}$			20	nA
	Capacitance (C_T)	$C_T @ 0.5\text{ V}, V_R = 0.5\text{ V}, F = 1\text{ MHz}$		10.4		pF
	Capacitance (C_T)	$C_T @ 5\text{ V}, V_R = 5\text{ V}, F = 1\text{ MHz}$		3.73		pF
	Capacitance Ratio (C_{TR})	$C_T (0.5\text{ V})/C_T (5\text{ V})$		2.79		
	Series Resistance (R_S)	$V_R = 1\text{ V}, F = 100\text{ MHz}$			0.43	Ω
	Breakdown Voltage (V_{BR})	$I_R = 10\ \mu\text{A}$	20			V
Applications	Parameter	Condition	Specification			Unit
			Min.	Typ.	Max.	
Common Anode Pin1//Pin2 	Reverse Current (I_R)	$V_R = 15\text{ V}$			20	nA
	Capacitance (C_T)	$C_T @ 0.5\text{ V}, V_R = 0.5\text{ V}, F = 1\text{ MHz}$		20.7		pF
	Capacitance (C_T)	$C_T @ 5\text{ V}, V_R = 5\text{ V}, F = 1\text{ MHz}$		7.4		pF
	Capacitance Ratio (C_{TR})	$C_T (0.5\text{ V})/C_T (5\text{ V})$		2.8		
	Series Resistance (R_S)	$V_R = 1\text{ V}, F = 100\text{ MHz}$			0.28	Ω
	Breakdown Voltage (V_{BR})	$I_R = 10\ \mu\text{A}$	20			V

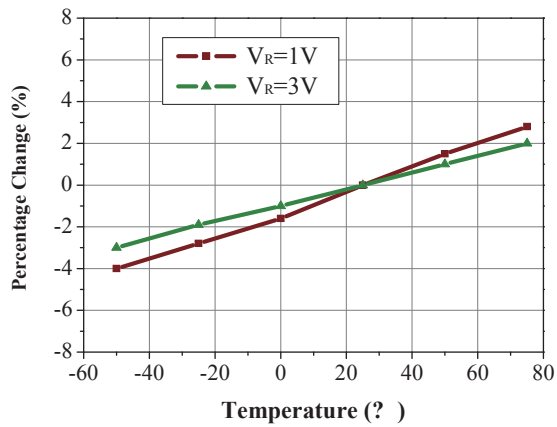
Typical Performance Data



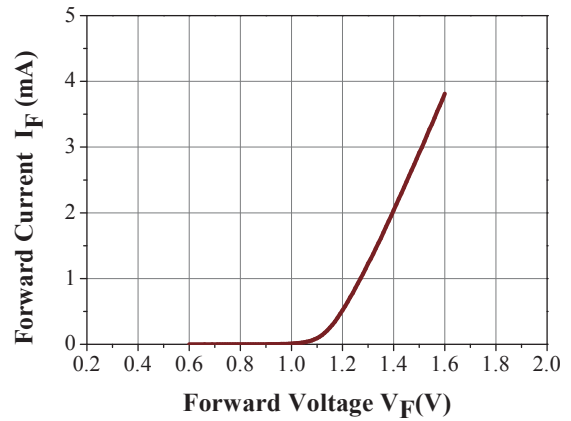
Capacitance vs. Reverse Voltage



Series Resistance vs. Reverse Voltage @ 100 MHz



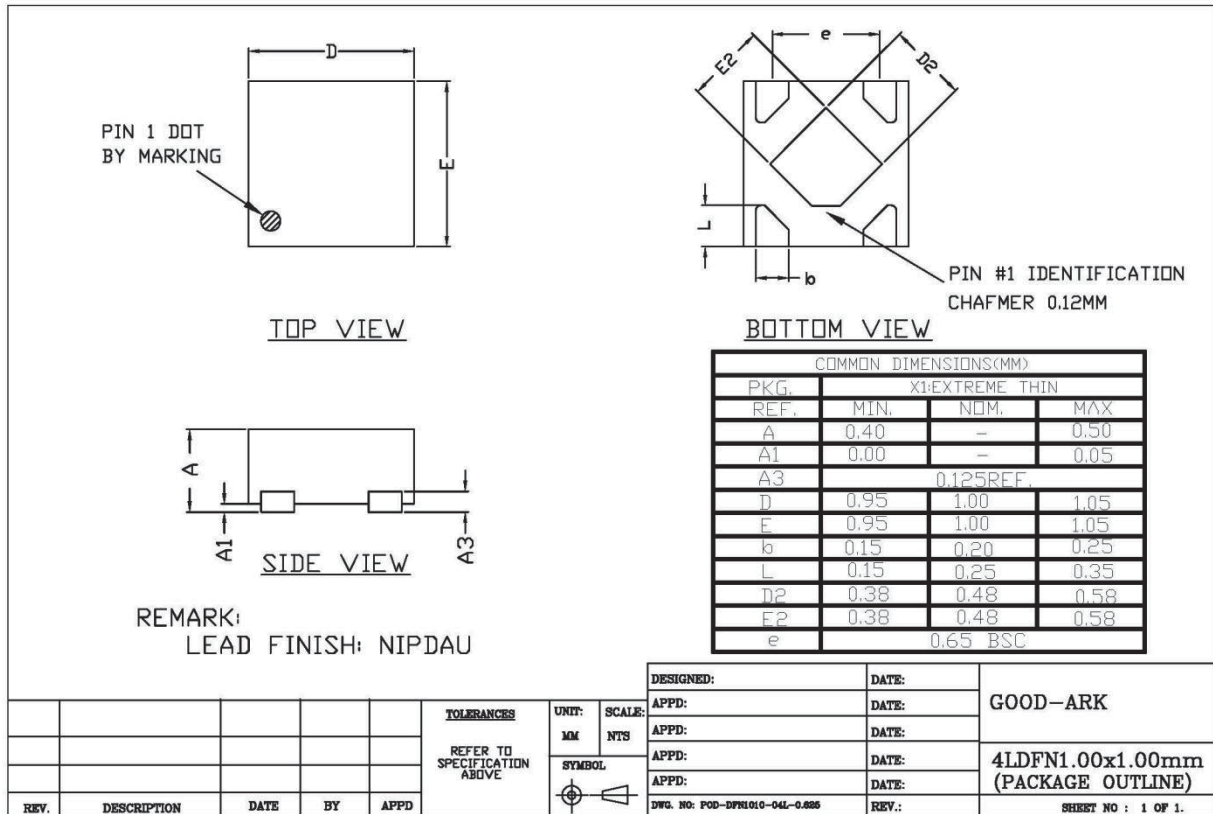
Relative Capacitance Change vs. Temperature



Forward I-V characteristic curve

Package Diagram

(Units: millimeters)



Part Number Naming Conventions:

(e.g.) **Y** **VC** **126** **P** **034** **R** **(D)**

① ② ③ ④ ⑤ ⑥ ⑦

- ① Company: INNOTION
- ② Product ID: (**VC**=Variable Capacitance Diode)
- ③ Capacitance (C_T)@ $V_R=0V$ is expressed by three-digit alphanumeric (e.g. **063**=6.3pF, **126**=12.6pF)
- ④ Capacitance Unit: pF
- ⑤ Capacitance ratio: C_{0V} / C_{5V} is expressed by three-digit alphanumeric (e.g. **034** is $C_{0V} / C_{5V} = 3.4$)
- ⑥ Ratio
- ⑦ There are two varactors inside, which can be used in parallel. For a single Varactor product, this letter is omitted.