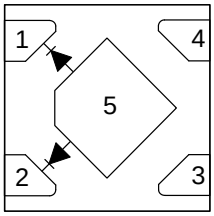
YVC126P034RD

Hyperabrupt Junction Tuning Varactor

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

Package: DFN 1x1-4L
Mark: D6



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.

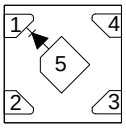
Absolute Maximum Ratings

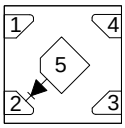
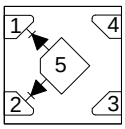
Characteristic	Rating	Unit
Reverse voltage (V_R)	15	V
Forward current (I_F)	20	mA
Power dissipation (P_D)	250	mW
Storage temperature (T_{ST})	-55 to +150	°C
Operating temperature (T_{OP})	-55 to +125	°C
ESD human body model	Class1B	

Caution!

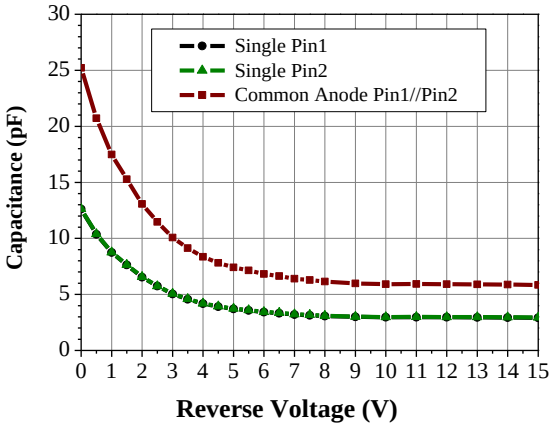
Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability.

Electrical Specifications@25℃

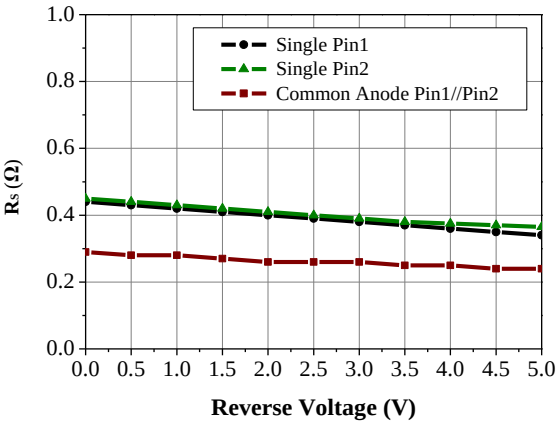
Applications	Parameter	Condition	Specification			Unit
			Min.	Typ.	Max.	
Single Pin1 	Reverse Current (I_R)	V_R = 15 V			20	nA
	Capacitance (C_T)	C_T @ 0.5 V, V_R = 0.5 V, F = 10 MHz		10.36		pF
	Capacitance (C_T)	C_T @ 5 V, V_R = 5 V, F = 10 MHz		3.7		pF
	Capacitance Ratio (C_{TR})	C_T (0.5 V)/C_T (5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

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

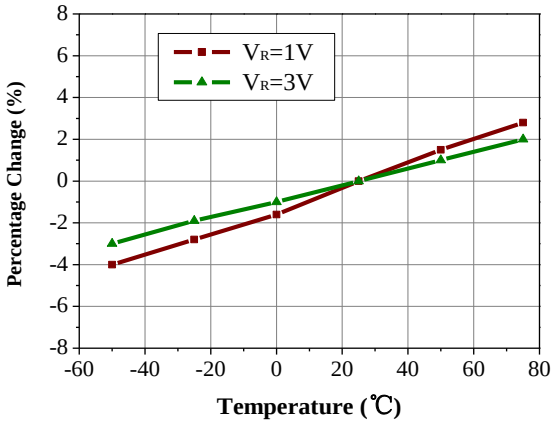
Typical Performance Data



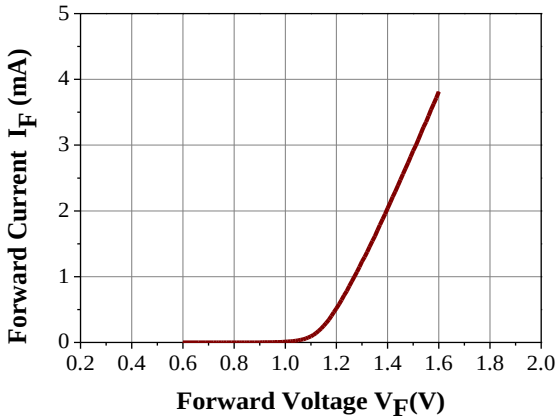
Capacitance vs. Reverse Voltage



Series Resistance vs. Reverse Voltage @ 100 MHz



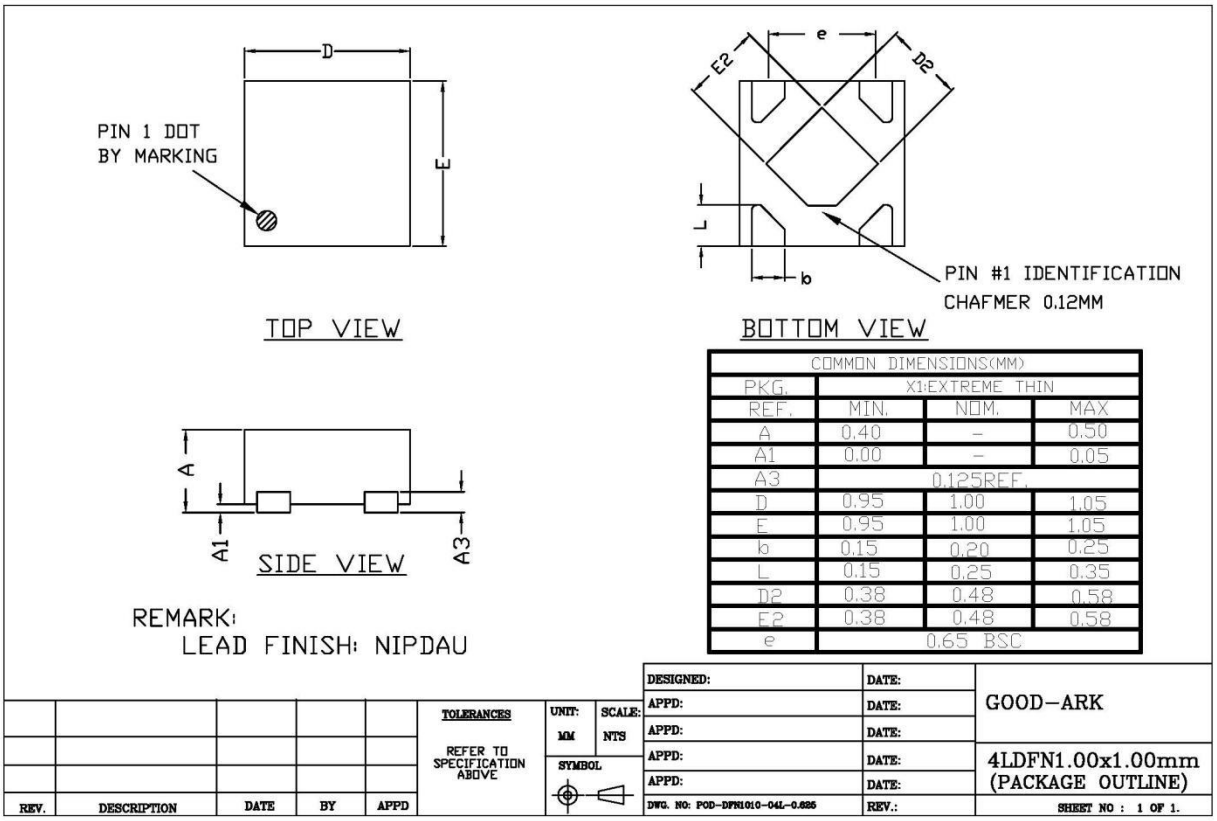
Relative Capacitance Change vs. Temperature



Forward I-V characteristic curve

Package Diagram

(Units: millimeters)



COMMON DIMENSIONS(MM)			
PKG.	X1:EXTREME THIN		
REF.	MIN.	NOM.	MAX.
A	0.40	–	0.50
A1	0.00	–	0.05
A3	0.125REF.		
D	0.95	1.00	1.05
E	0.95	1.00	1.05
b	0.15	0.20	0.25
L	0.15	0.25	0.35
D2	0.38	0.48	0.58
E2	0.38	0.48	0.58
e	0.65 BSC.		

REV.	DESCRIPTION	DATE	BY	APPD

TOLERANCES: REFER TO SPECIFICATION ABOVE
UNIT: MM
SCALE: NTS
SYMBOL

DESIGNED:	DATE:
APPD:	DATE:
APPD:	DATE:
APPD:	DATE:
APPD:	DATE:
DWG. NO: POD-DFN1010-04L-0.325	REV.:

GOOD-ARK

4LDFN1.00x1.00mm
(PACKAGE OUTLINE)

SHEET NO : 1 OF 1.

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.