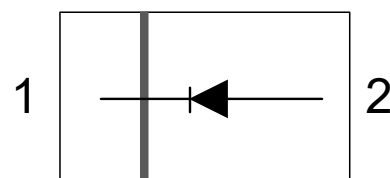


### Features

- 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 DFN1x0.6-2L Package



Functional Block Diagram

### Product Description

The YVC063P034RD 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	



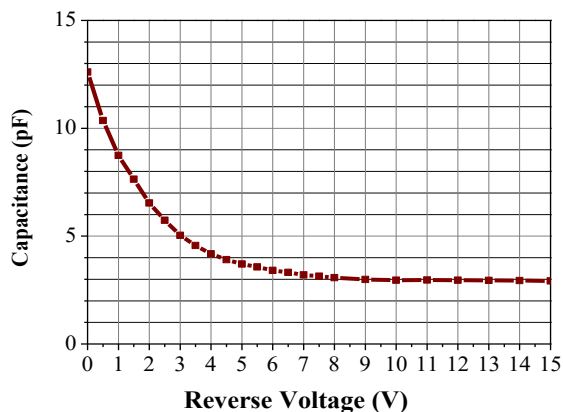
#### Caution!

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.

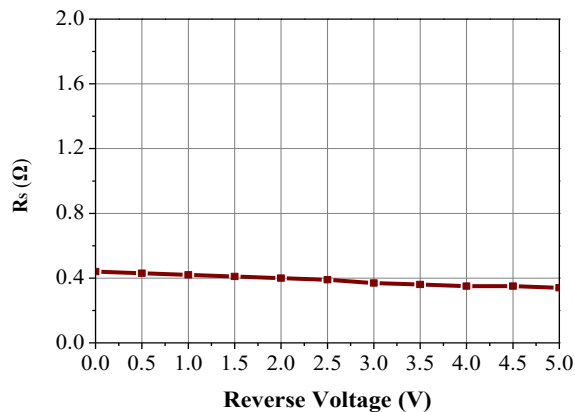
### Electrical Specifications@25 °C

Parameter	Condition	Specification			Unit
		Min.	Typ.	Max.	
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		10.36		pF
Capacitance ( $C_T$ )	$C_T @ 5$ V, $V_R = 5$ V, $F = 1$ 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	$\Omega$
Breakdown Voltage ( $V_{BR}$ )	$I_R = 10$ $\mu$ A	20			V

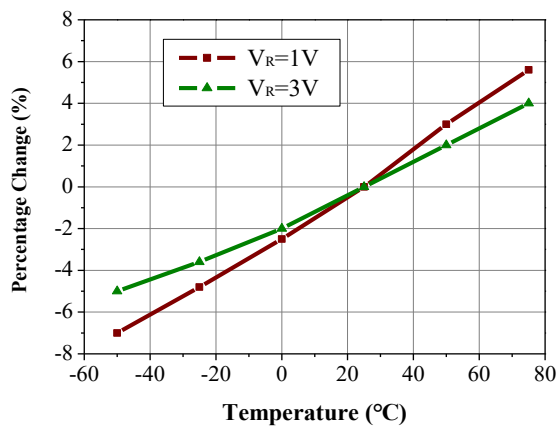
### Typical Performance Data



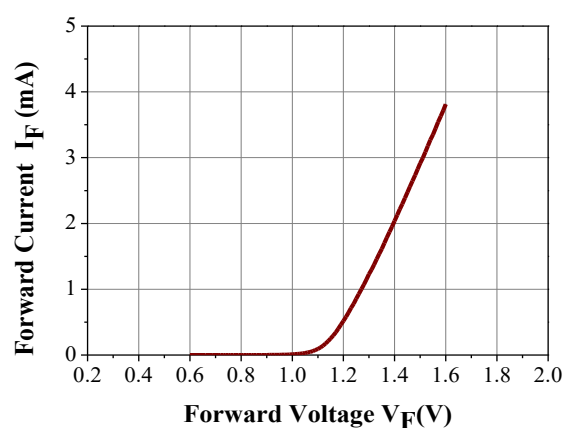
**Capacitance vs. Reverse Voltage**



**Series Resistance vs. Reverse Voltage  
@ 100 MHz**



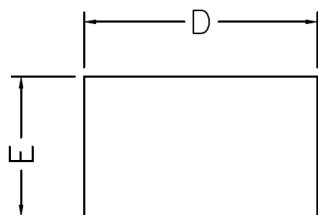
**Relative Capacitance Change  
vs. Temperature**



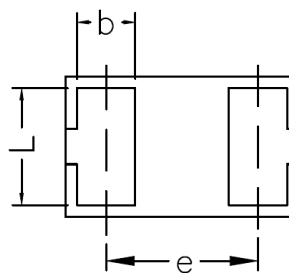
**Forward I-V characteristic curve**

### Package Diagram

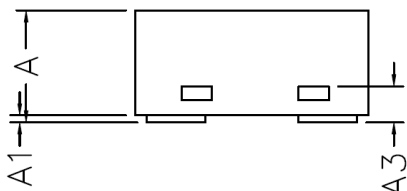
(Units: millimeters)



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSIONS(MM)			
PKG.	X1: EXTREME THIN		
REF.	MIN.	NOM.	MAX
A	>0.4	—	0.50
A1	0.00	—	0.05
A3	0.125REF.		
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.20	0.25	0.30
L	0.45	0.50	0.55
	—	—	—
	—	—	—
e	0.65 BSC		

### Part Number Naming Conventions:

(e.g.) **Y** **VC** **063** **P** **034** **R** **(D)** - **5** **S/D**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- 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, **228**=22.8pF)
- 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
- ⑧ Internal part number
- ⑨ S: single Varactor product is used. D: two varactors are used in parallel.