

VARIABLE CAPACITANCE DIODE

FEATURES

- Very Wide Operating Voltage Range (1 to 6.5 V)
- Excellent Linearity (CV Curve)
- Large Capacitance Ratio (A = 17 minimum)
- Two Diodes in a 3 Lead Through-Hole Discrete Package (TO92-3)
- Very Small Capacitance Deviation at Tape/Reel

APPLICATIONS

- AM Radio
- Voltage Controlled Oscillator

DESCRIPTION

The KV1590NT variable capacitance diode was specially developed for use as tuning elements in car radios, radio cassettes, and other consumer radios. Single package construction includes an antenna and oscillating tuning element.

The KV1590NT is available in a TO92-3 package.

CLASSIFICATION

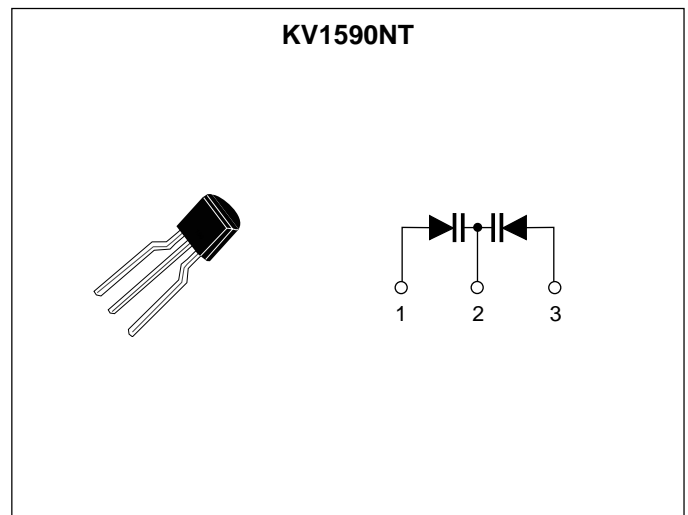
(Unit: pF)

C		RANK		
		1	2	3
C ₁	MIN	433.00	457.00	481.00
	MAX	463.00	487.00	511.00

ORDERING INFORMATION

KV1590NT

Note: The KV1590NT is supplied on folded paper tape (25 pieces per fold), 1500 pcs per box.



KV1590NT

ABSOLUTE MAXIMUM RATINGS

Reverse Voltage	30 V	Storage Temperature Range	-55 to +150 °C
Forward Current	50 mA	Operating Temperature Range	-55 to +85 °C
Power Dissipation	100 mW	Lead Soldering Temperature (10 s)	235 °C

ELECTRICAL CHARACTERISTICS

Test conditions: $T_A = 25\text{ °C}$

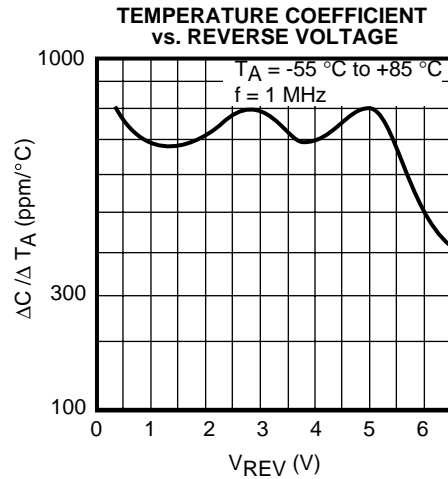
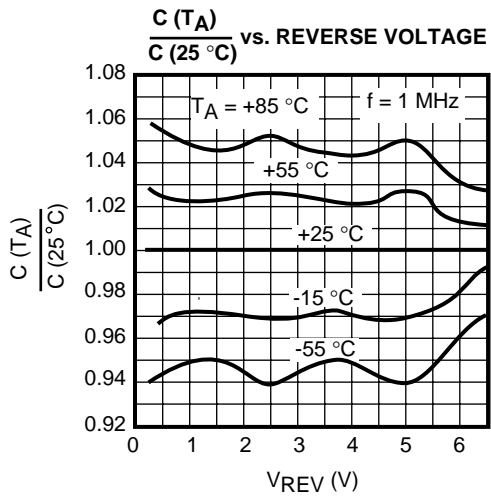
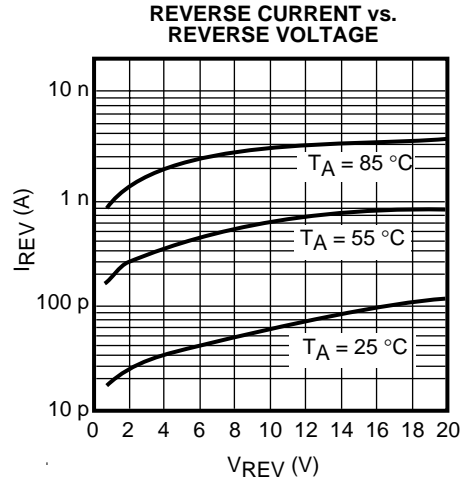
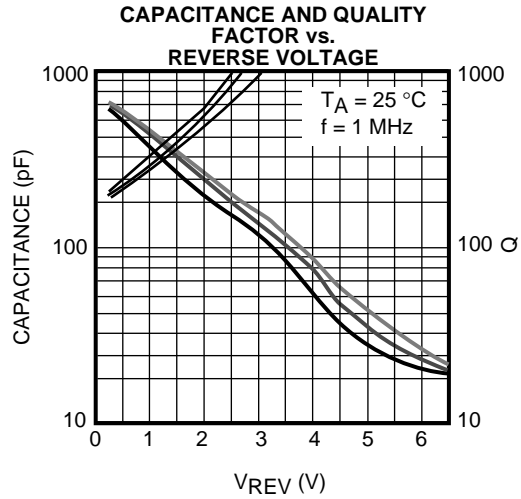
SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{REV}	Reverse Voltage	$I_{REV} = 10\ \mu\text{A}$	20			V
I_{REV}	Reverse Current	$V_{REV} = 16.0\ \text{V}$			50	nA
C_1	Diode Capacitance 1	$V_{REV} = 1.0\ \text{V}, f = 1\ \text{MHz}$	433.00	472.00	511.00	pF
$C_{6.5}$	Diode Capacitance 6.5	$V_{REV} = 6.5\ \text{V}, f = 1\ \text{MHz}$	21.00	24.00	27.00	pF
$\Delta C_{1.0}$	Capacitance Tolerance (Note 2)	$V_{REV} = 1.0\ \text{V}, f = 1\ \text{MHz}$			1.0	%
$\Delta C_{3.0}$		$V_{REV} = 3.0\ \text{V}, f = 1\ \text{MHz}$			2.0	%
$\Delta C_{6.5}$		$V_{REV} = 6.5\ \text{V}, f = 1\ \text{MHz}$			2.0	%
Q	Quality Factor	$V_{REV} = 1.0\ \text{V}, f = 1\ \text{MHz}$	200			
A	Capacitance Ratio	$C_1 / C_{6.5}$	17.00	17.50		

Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, ± 5 mVrms).

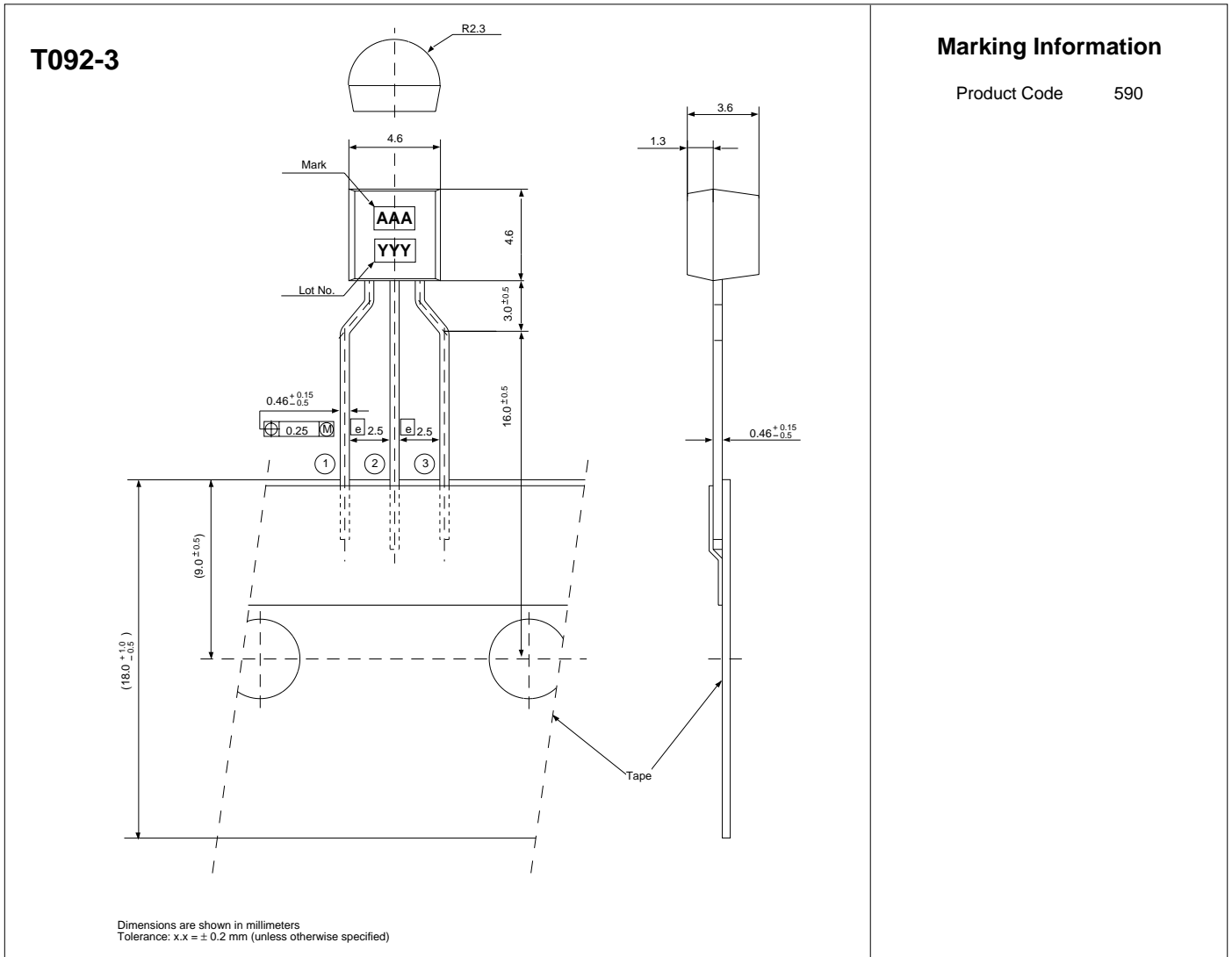
Note 2: $\Delta C = \frac{C_{\text{max}}(D_1, D_2) - C_{\text{min}}(D_1, D_2)}{C_{\text{min}}(D_1, D_2)} \times 100$ * D_1, D_2 : Please refer to the Pin Layout shown below.

	Symbol	Anode Pin	Cathode Pin
Diode 1	D_1	①	②
Diode 2	D_2	③	②

TYPICAL PERFORMANCE CHARACTERISTICS



PACKAGE OUTLINE



Toko America, Inc. Headquarters
 1250 Feehanville Drive, Mount Prospect, Illinois 60056
 Tel: (847) 297-0070 Fax: (847) 699-7864

TOKO AMERICA REGIONAL OFFICES

Midwest Regional Office
 Toko America, Inc.
 1250 Feehanville Drive
 Mount Prospect, IL 60056
 Tel: (847) 297-0070
 Fax: (847) 699-7864

Western Regional Office
 Toko America, Inc.
 2480 North First Street, Suite 260
 San Jose, CA 95131
 Tel: (408) 432-8281
 Fax: (408) 943-9790

Eastern Regional Office
 Toko America, Inc.
 107 Mill Plain Road
 Danbury, CT 06811
 Tel: (203) 748-6871
 Fax: (203) 797-1223

Semiconductor Technical Support
 Toko Design Center
 4755 Forge Road
 Colorado Springs, CO 80907
 Tel: (719) 528-2200
 Fax: (719) 528-2375

Visit our Internet site at <http://www.tokoam.com>

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