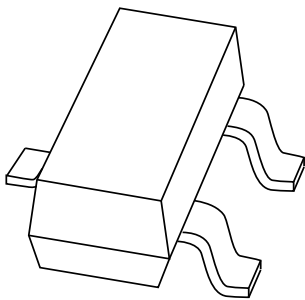


DATA SHEET



BBY40

VHF variable capacitance diode

Product specification
Supersedes data of November 1993

1996 May 03



VHF variable capacitance diode

BBY40

FEATURES

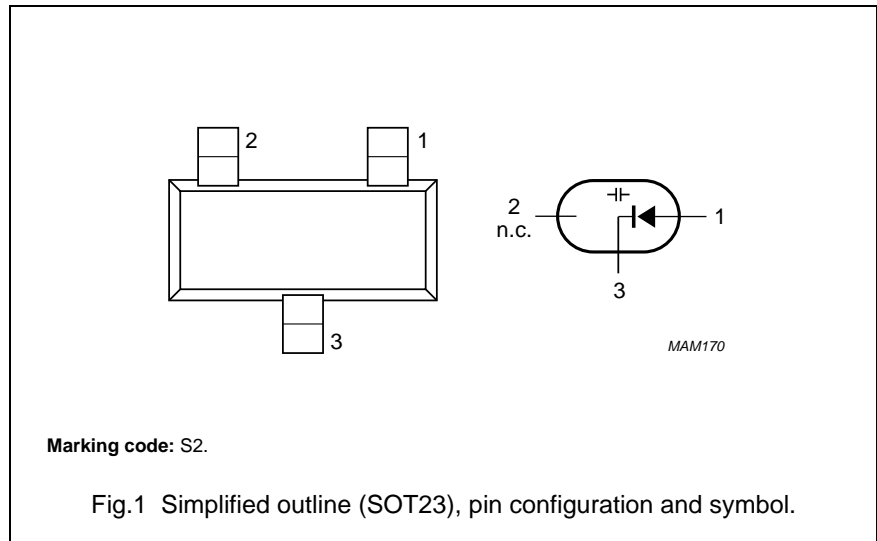
- Excellent linearity
- Small plastic SMD package
- C25: 4.6 pF; ratio: 5.5.

APPLICATIONS

- Electronic tuning in VHF television tuners, band A up to 160 MHz.

DESCRIPTION

The BBY40 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOT23 small plastic SMD package.



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_R	continuous reverse voltage	–	30	V
I_F	continuous forward current	–	20	mA
T_{stg}	storage temperature	–55	+150	°C
T_j	operating junction temperature	–55	+125	°C

ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ °C}$; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_R	reverse current	$V_R = 28\text{ V}$; see Fig.3	–	–	10	nA
		$V_R = 28\text{ V}$; $T_j = 85\text{ °C}$; see Fig.3	–	–	200	nA
r_s	diode series resistance	$f = 200\text{ MHz}$; note 1	–	–	0.7	Ω
C_d	diode capacitance	$V_R = 3\text{ V}$; $f = 1\text{ MHz}$; see Figs 2 and 4	26	–	32	pF
		$V_R = 25\text{ V}$; $f = 1\text{ MHz}$; see Figs 2 and 4	4.3	–	6	pF
$\frac{C_{d(3V)}}{C_{d(25V)}}$	capacitance ratio	$f = 1\text{ MHz}$	5	–	6.5	

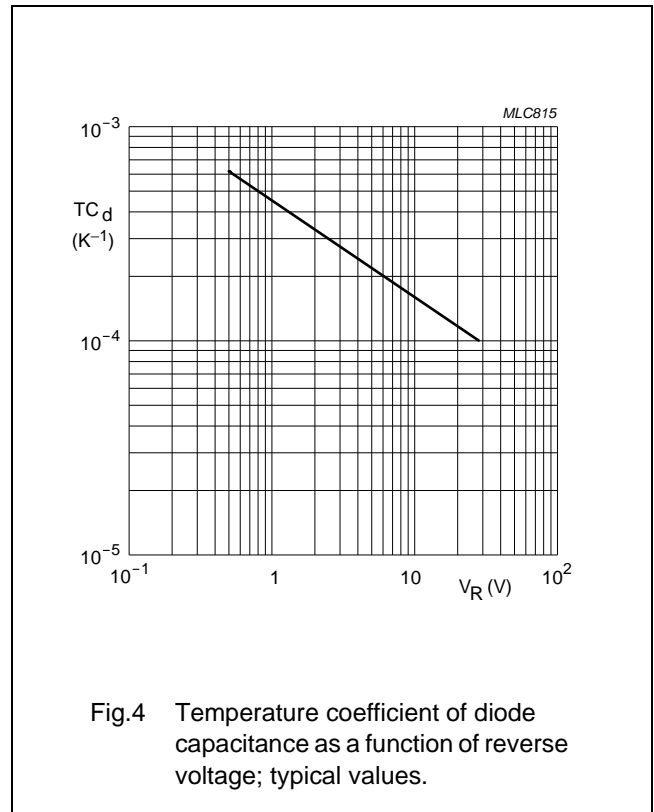
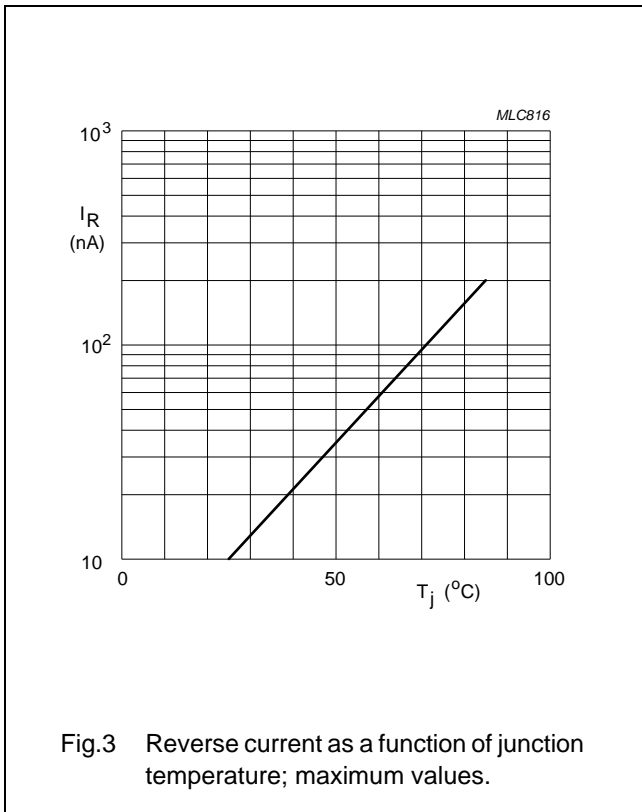
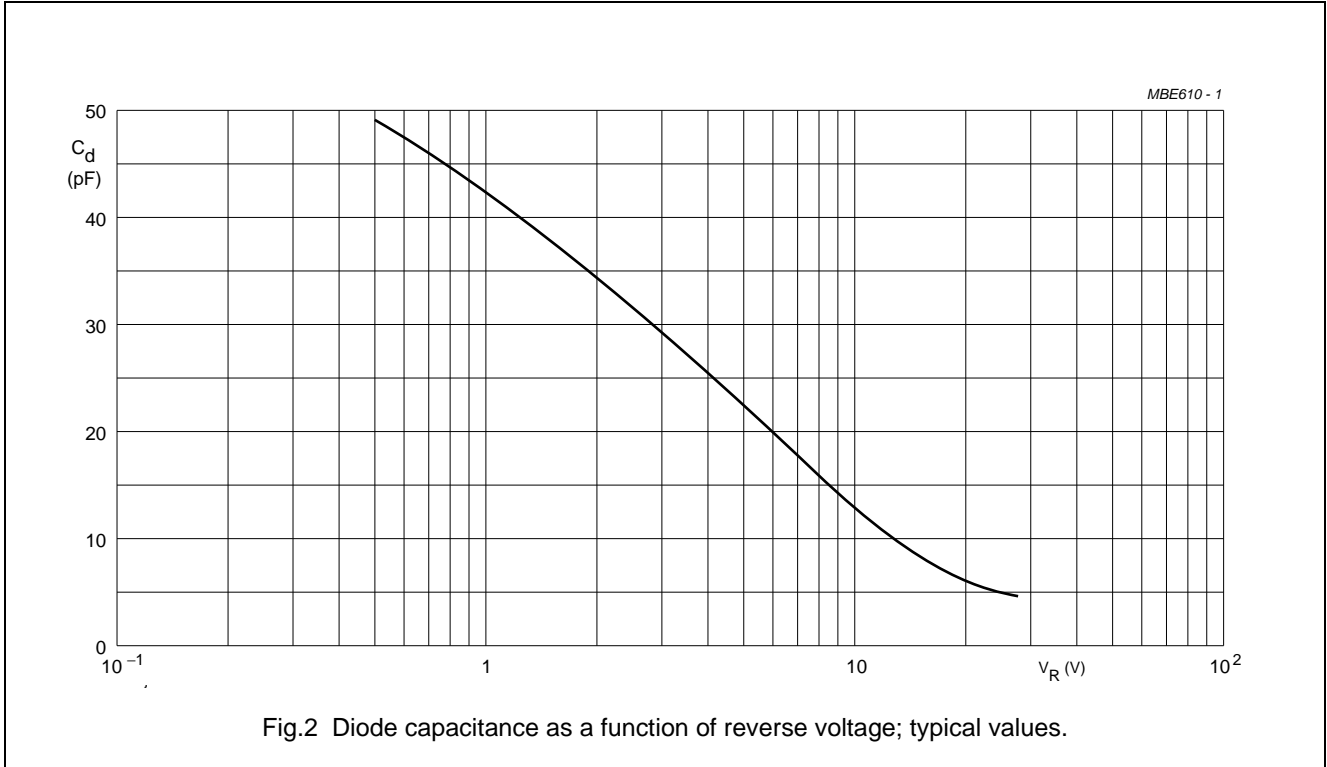
Note

1. V_R is the value at which $C_d = 25\text{ pF}$.

VHF variable capacitance diode

BBY40

GRAPHICAL DATA



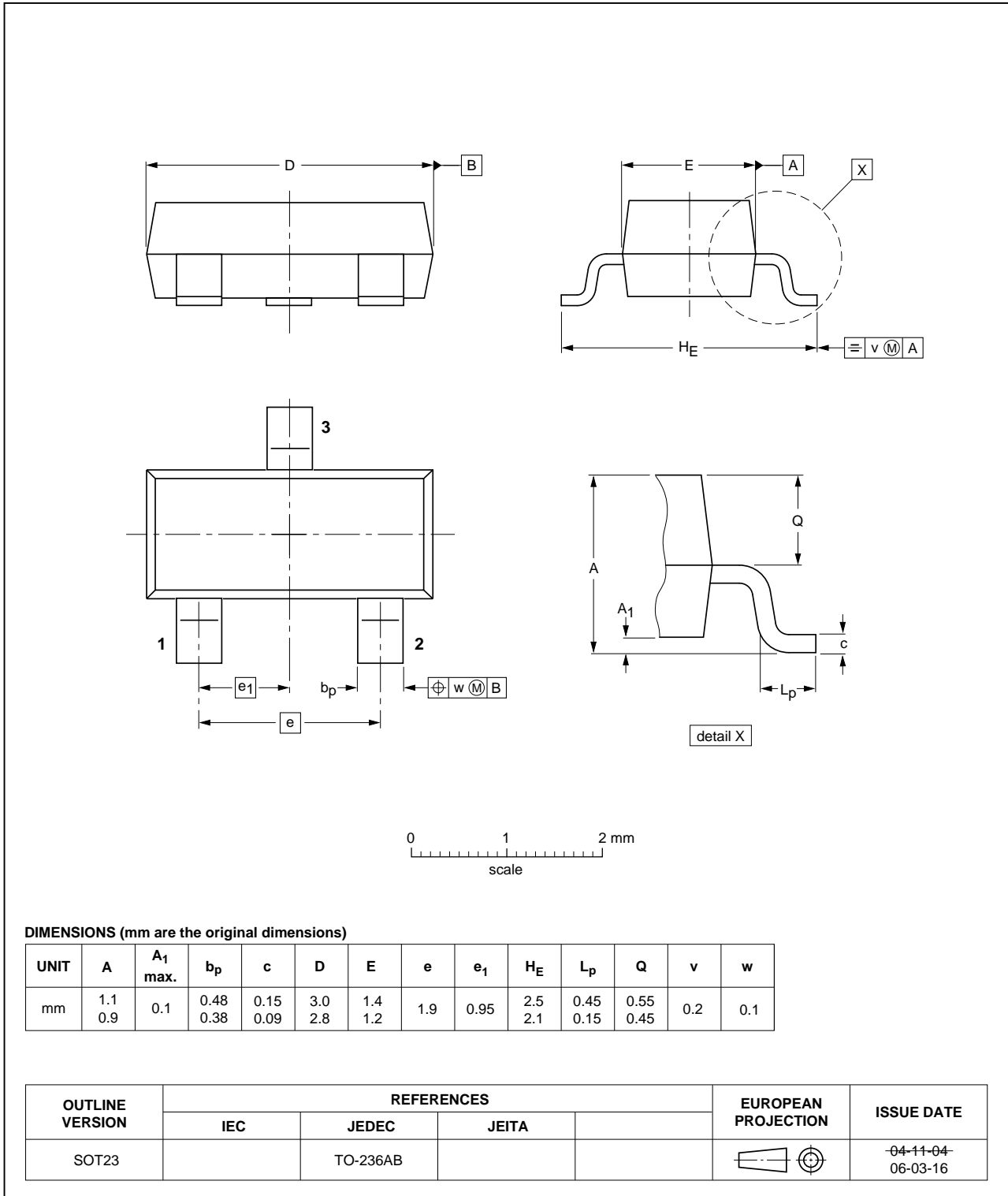
VHF variable capacitance diode

BBY40

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



VHF variable capacitance diode

BBY40

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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VHF variable capacitance diode

BBY40

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Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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Printed in The Netherlands

R77/01/pp7

Date of release:1996 May 03

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