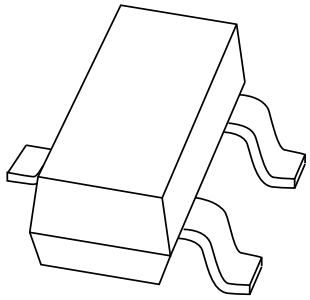
DATA SHEET



BBY40
VHF variable capacitance diode

Product specification
Supersedes data of November 1993

1996 May 03

VHF variable capacitance diode BBY40

FEATURES

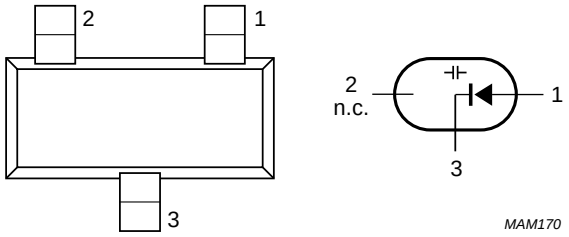
- Excellent linearity
- Small plastic SMD package
- C25: 4.6 pF; ratio: 5.5.

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.



Marking code: S2.

Fig.1 Simplified outline (SOT23), pin configuration and symbol.

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 °C; unless otherwise specified.

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

Note

1. V_R is the value at which C_d = 25 pF.

GRAPHICAL DATA

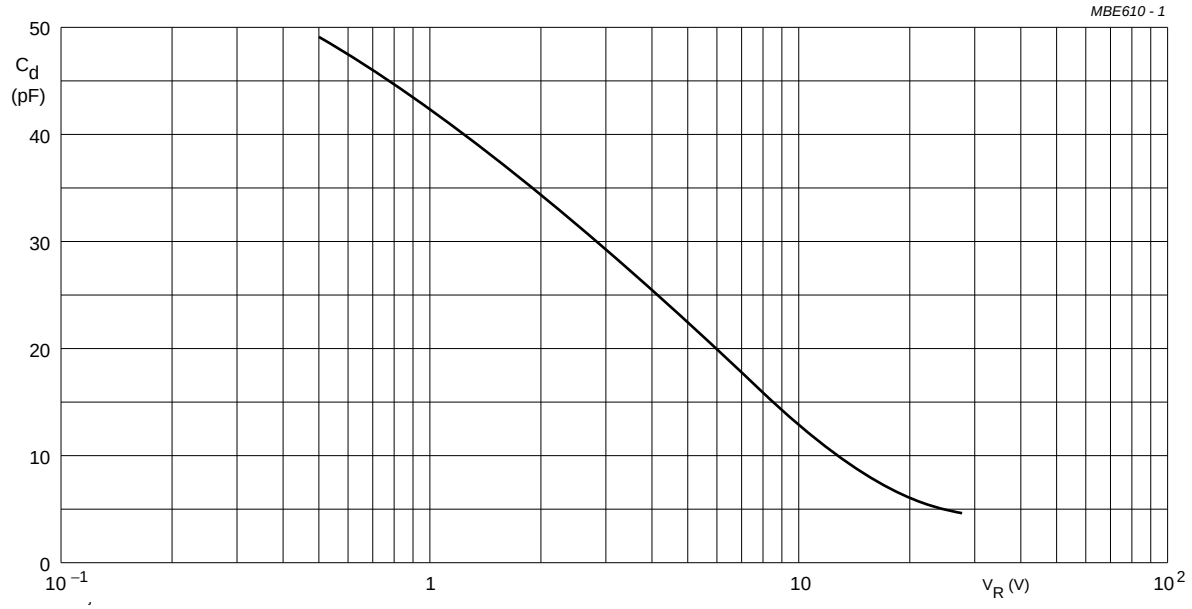


Fig.2 Diode capacitance as a function of reverse voltage; typical values.

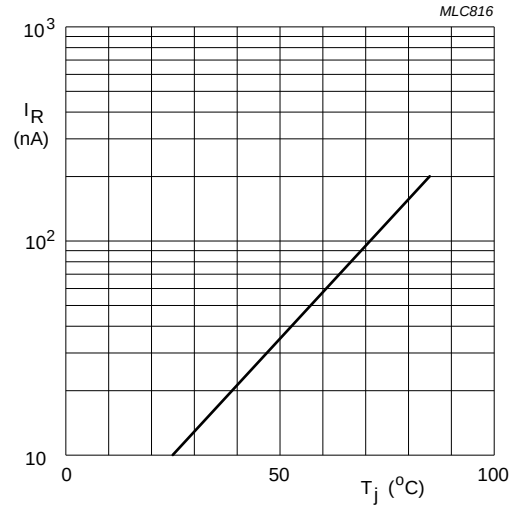


Fig.3 Reverse current as a function of junction temperature; maximum values.

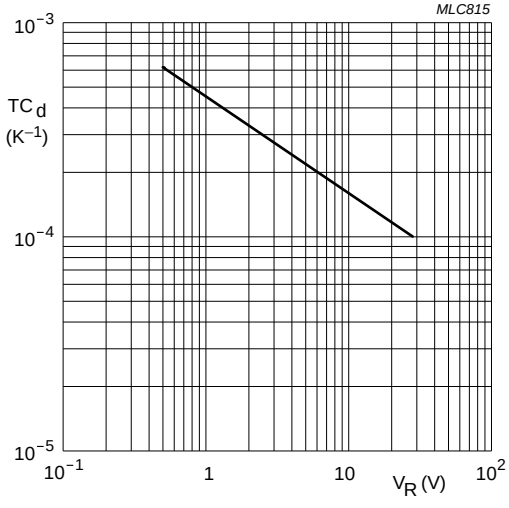
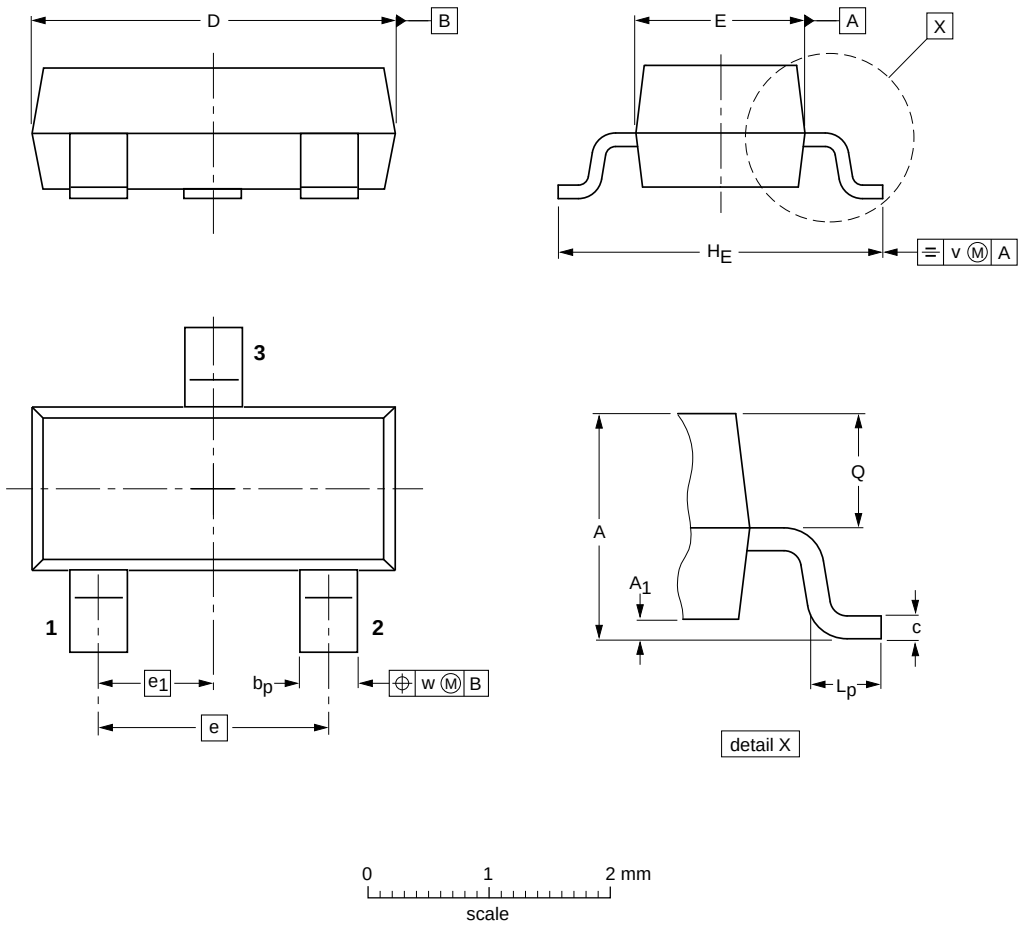


Fig.4 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads **SOT23**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max.	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT23		TO-236AB				~~04-11-04~~ 06-03-16

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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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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