

## VHF variable capacitance diode

BB148

### FEATURES

- Excellent linearity
- Excellent matching to 1% DMA
- Very small plastic SMD package
- C28: 2.6 pF; ratio: 15
- Low series resistance.

### APPLICATIONS

- Electronic tuning in VHF television tuners, band B up to 460 MHz
- VCO.

### DESCRIPTION

The BB148 is variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD323 very small plastic SMD package.

The excellent matching performance is achieved by gliding matching and a direct matching assembly procedure. The diodes are delivered on tape in several matched groups and are also available unmatched upon request. The unmatched type, BB158 has the same specification.

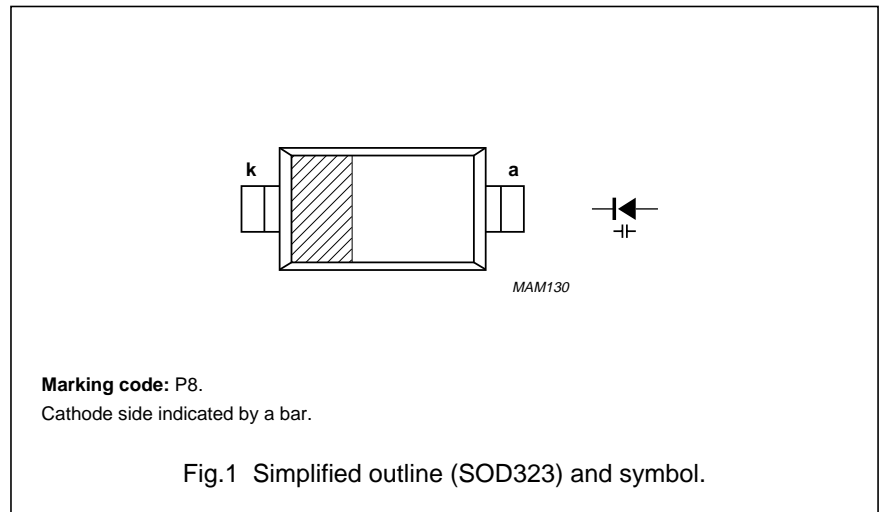
### ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_R$	reverse current	$V_R = 30\text{ V}$ ; see Fig.3	–	10	nA
		$V_R = 30\text{ V}$ ; $T_j = 85\text{ }^\circ\text{C}$ ; see Fig.3	–	200	nA
$r_s$	diode series resistance	$f = 100\text{ MHz}$ ; note 1	–	0.9	$\Omega$
$C_d$	diode capacitance	$V_R = 1\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	36.8	41.8	pF
		$V_R = 28\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	2.4	2.75	pF
$\frac{C_{d(1V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	14.5	–	
$\frac{\Delta C_d}{C_d}$	capacitance matching	$V_R = 0.5\text{ to }28\text{ V}$ ; in a sequence of 4 diodes (gliding)	–	1	%
		$V_R = 0.5\text{ to }28\text{ V}$ ; in a sequence of 20 diodes (gliding)	–	2	%

### Note

1.  $V_R$  is the value at which  $C_d = 12\text{ pF}$ .



### LIMITING VALUES

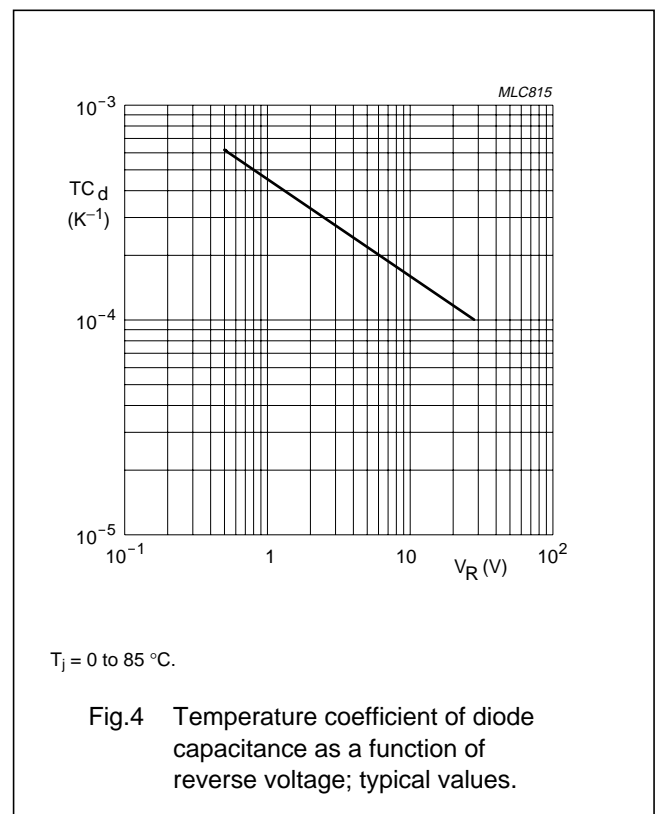
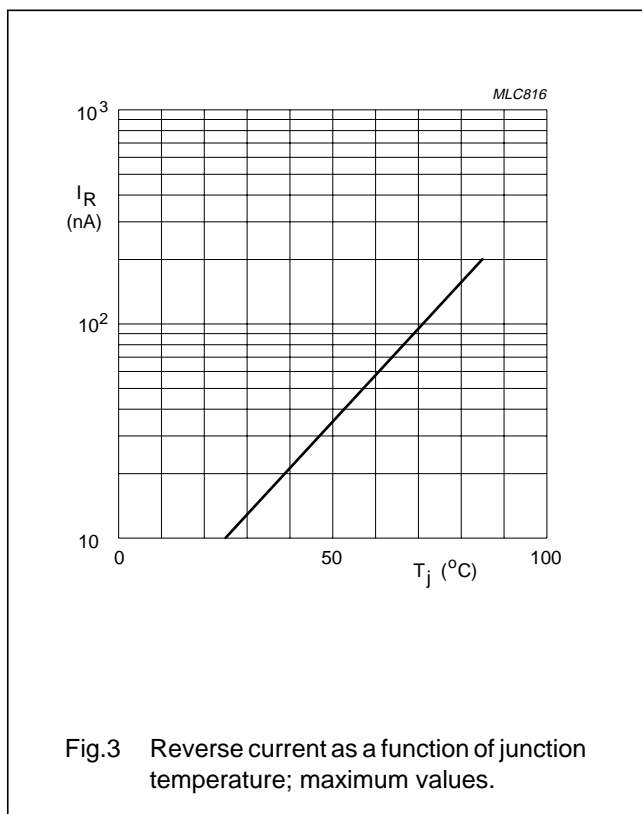
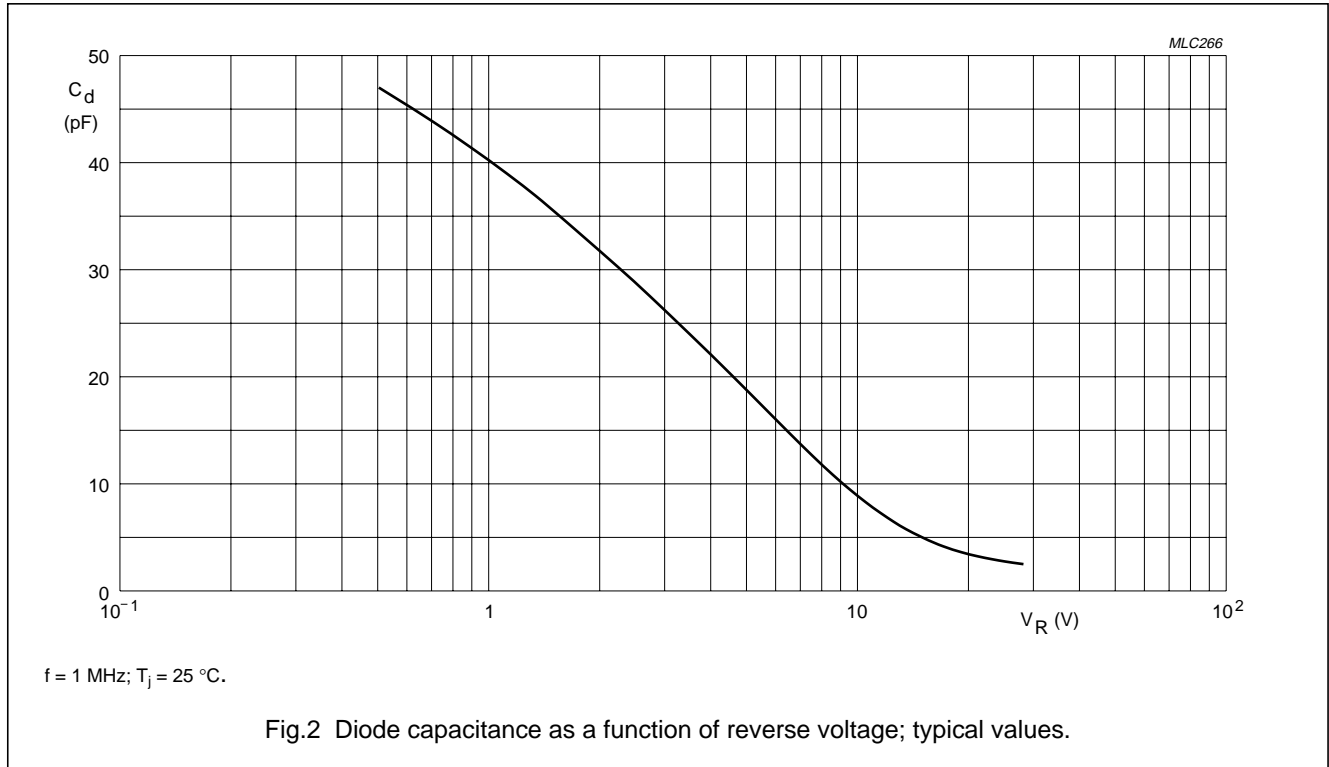
In accordance with the Absolute Maximum Rating System (IEC 134).

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	$^\circ\text{C}$
$T_j$	operating junction temperature	–55	+125	$^\circ\text{C}$

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GRAPHICAL DATA



# Olitech Electronics Co. Ltd

Email: info@olitech-elec.com Website: www.olitech-elec.com

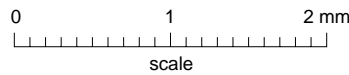
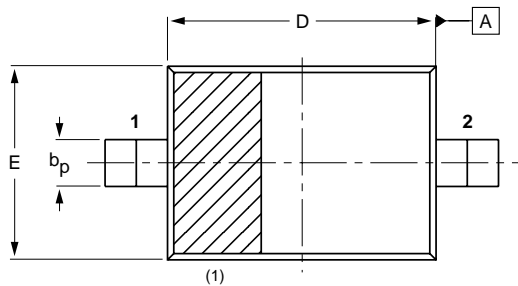
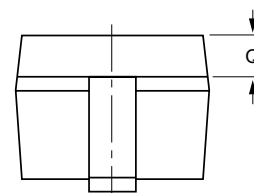
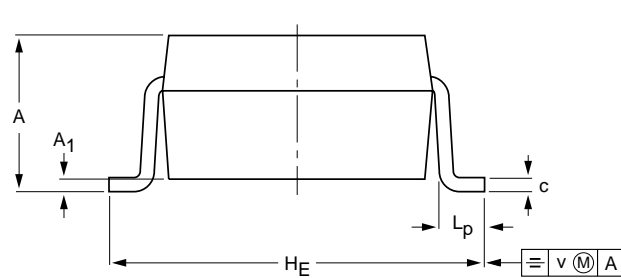
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## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



### DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	H <sub>E</sub>	L <sub>p</sub>	Q	v
mm	1.1 0.8	+0.05 -0.05	0.40 0.25	0.25 0.10	1.8 1.6	1.35 1.15	2.7 2.3	0.45 0.15	0.25 0.15	0.2

### Note

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOD323					98-09-14