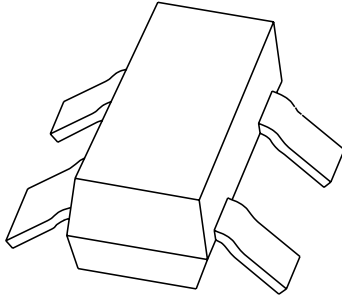


DATA SHEET



BAS56

High-speed double diode

Product data sheet
Supersedes data of April 1996

1996 Sep 10

High-speed double diode

BAS56

FEATURES

- Small plastic SMD package
- High switching speed: max. 6 ns
- Continuous reverse voltage: max. 60 V
- Repetitive peak reverse voltage: max. 60 V
- Repetitive peak forward current: max. 600 mA.

APPLICATIONS

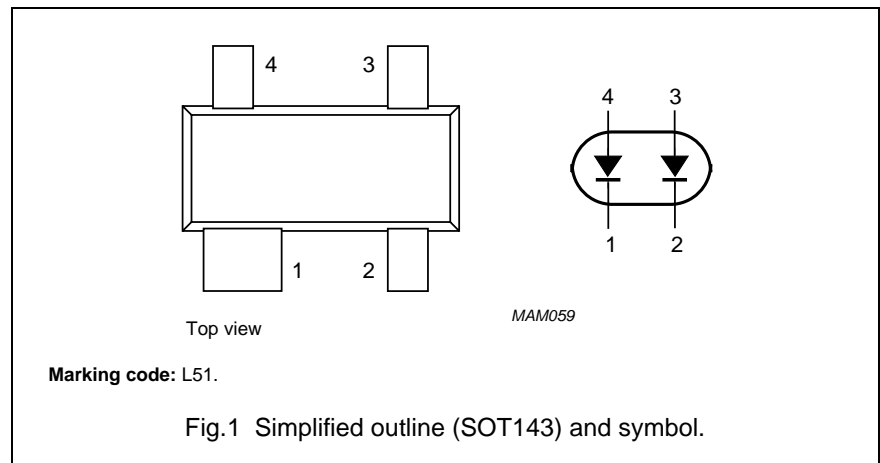
- High speed switching in e.g. surface mounted circuits.

DESCRIPTION

The BAS56 consists of two high-speed switching diodes fabricated in planar technology, and encapsulated in the small rectangular plastic SMD SOT143 package. The diodes are not connected.

PINNING

PIN	DESCRIPTION
1	cathode (k1)
2	cathode (k2)
3	anode (a2)
4	anode (a1)



High-speed double diode

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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage		–	60	V
V_{RRM}	repetitive peak reverse voltage	series connection		120	V
V_R	continuous reverse voltage		–	60	V
V_R	continuous reverse voltage	series connection	–	120	V
I_F	continuous forward current	single diode loaded; see Fig.2; note 1	–	200	mA
		double diode loaded; see Fig.2; note 1	–	150	mA
I_{FRM}	repetitive peak forward current	single diode loaded	–	600	mA
		double diode loaded	–	430	mA
I_{FSM}	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4			
		$t = 1\ \mu\text{s}$	–	9	A
		$t = 100\ \mu\text{s}$	–	3	A
		$t = 10\ \text{ms}$	–	1.7	A
P_{tot}	total power dissipation	$T_{amb} = 25\text{ °C}$; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C

Note

1. Device mounted on an FR4 printed-circuit board.

High-speed double diode

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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_F	forward voltage	see Fig.3; $I_F = 200\text{ mA}$; DC value; note 1	–	1.0	V
I_R	reverse current	see Fig.5 $V_R = 60\text{ V}$ $V_R = 60\text{ V}; T_j = 150\text{ °C}$	– –	100 100	nA μA
I_R	reverse current	series connection $V_R = 120\text{ V}$ $V_R = 120\text{ V}; T_j = 150\text{ °C}$	– – –	100 100	nA μA
C_d	diode capacitance	$f = 1\text{ MHz}; V_R = 0$; see Fig.6	–	2.5	pF
t_{rr}	reverse recovery time	when switched from $I_F = 400\text{ mA}$ to $I_R = 400\text{ mA}; R_L = 100\ \Omega$; measured at $I_R = 40\text{ mA}$; see Fig.7	–	6	ns
V_{fr}	forward recovery voltage	when switched from $I_F = 400\text{ mA}$; $t_r = 30\text{ ns}$; see Fig.8	–	2.0	V
		when switched from $I_F = 400\text{ mA}$; $t_r = 100\text{ ns}$; see Fig.8	–	1.5	V

Note

- $T_{amb} = 25\text{ °C}$; device has reached the thermal equilibrium when mounted on an FR4 printed-circuit board.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		360	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

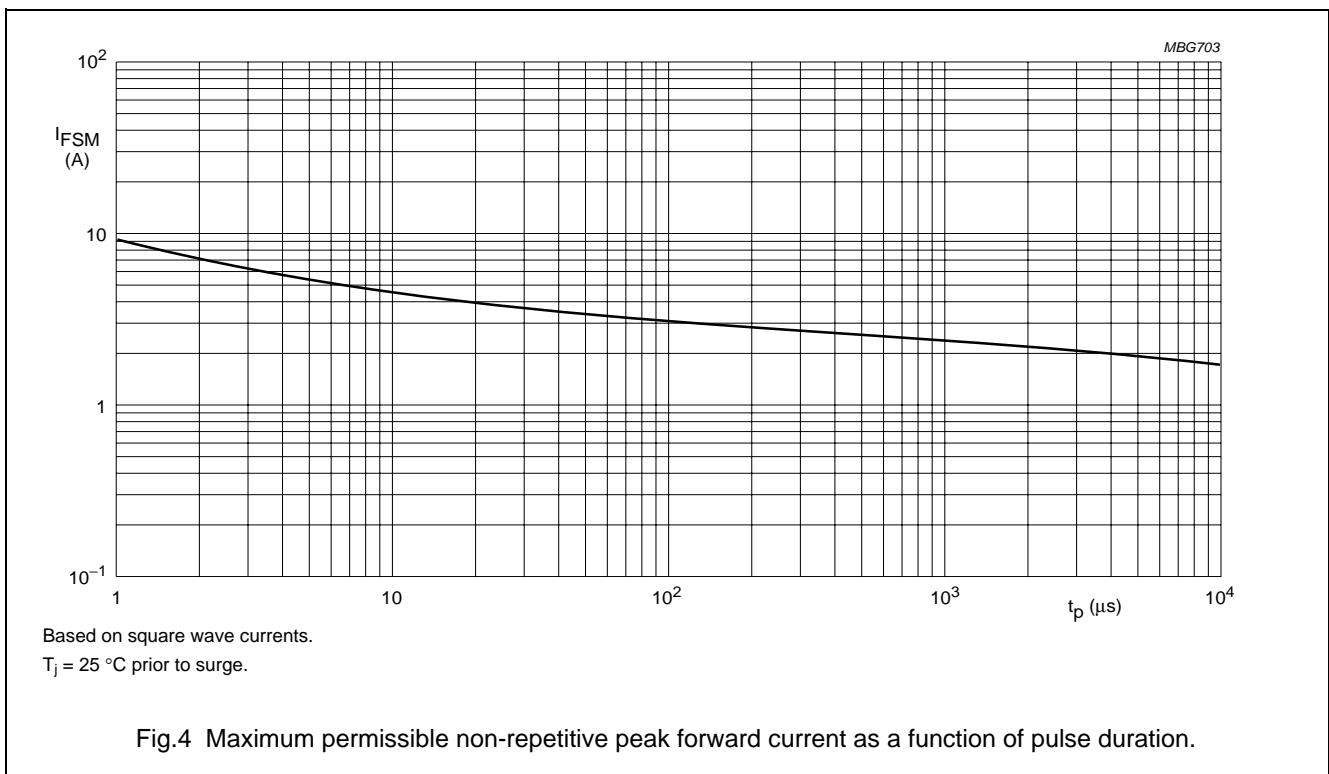
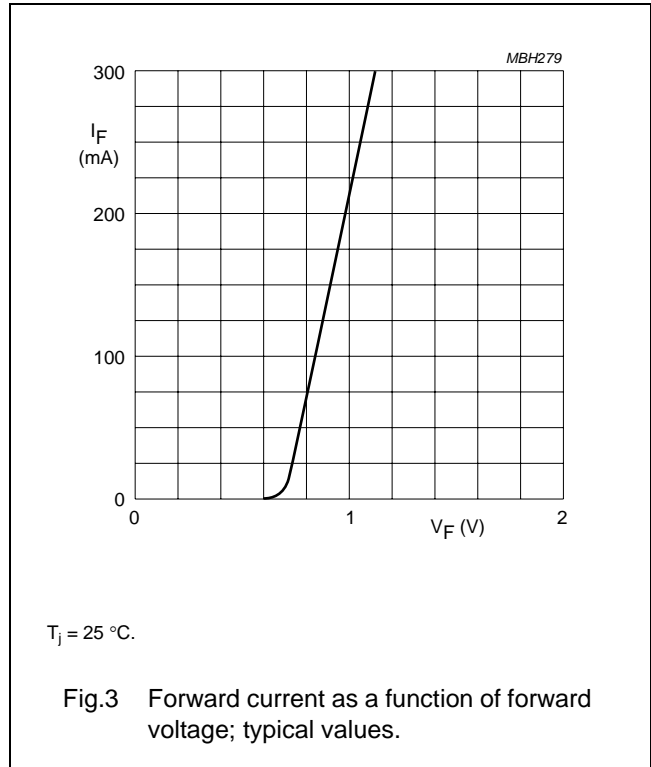
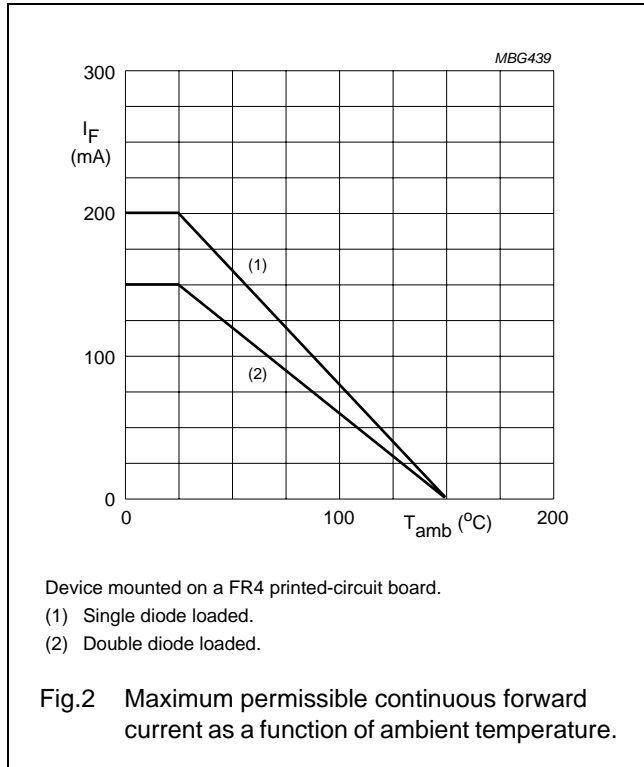
Note

- Device mounted on an FR4 printed-circuit board.

High-speed double diode

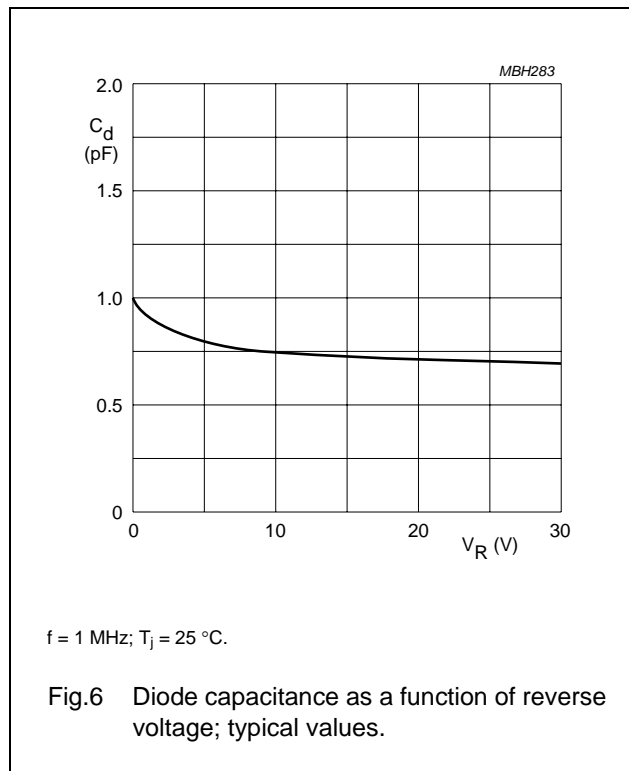
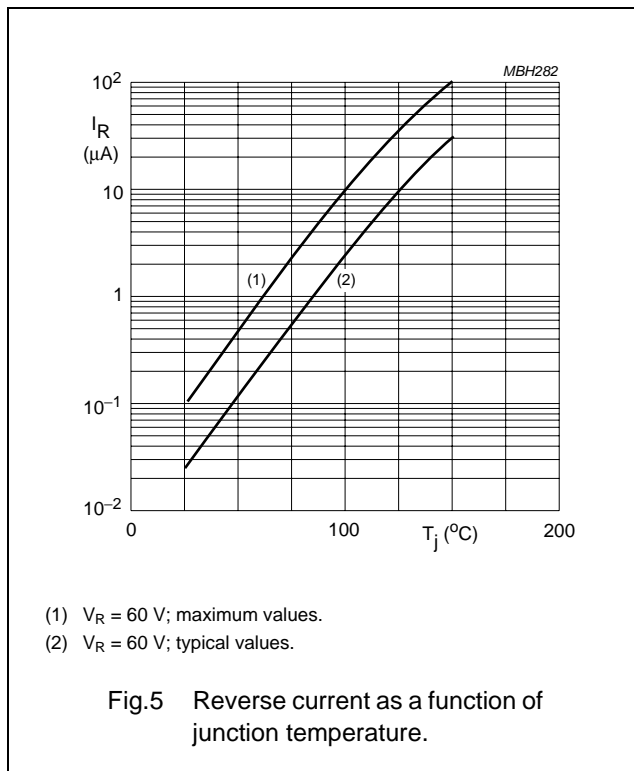
BAS56

GRAPHICAL DATA



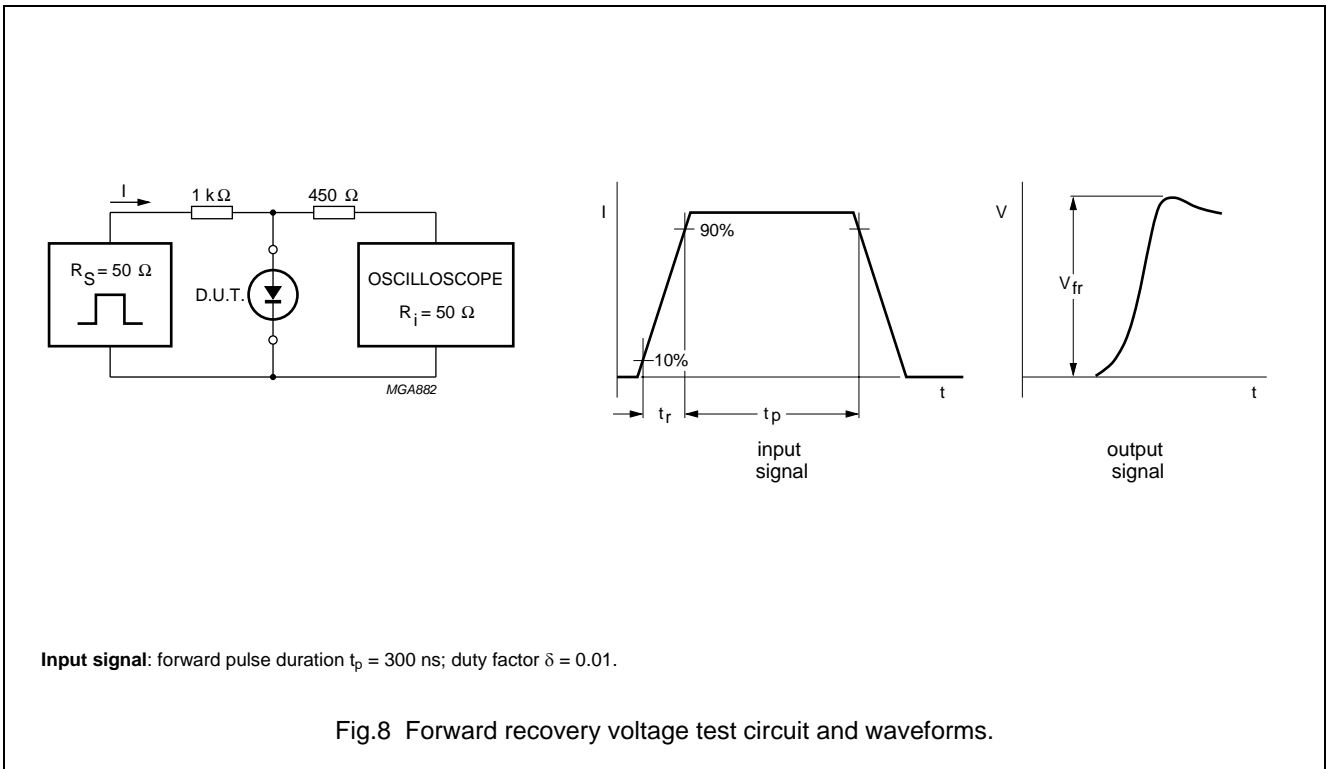
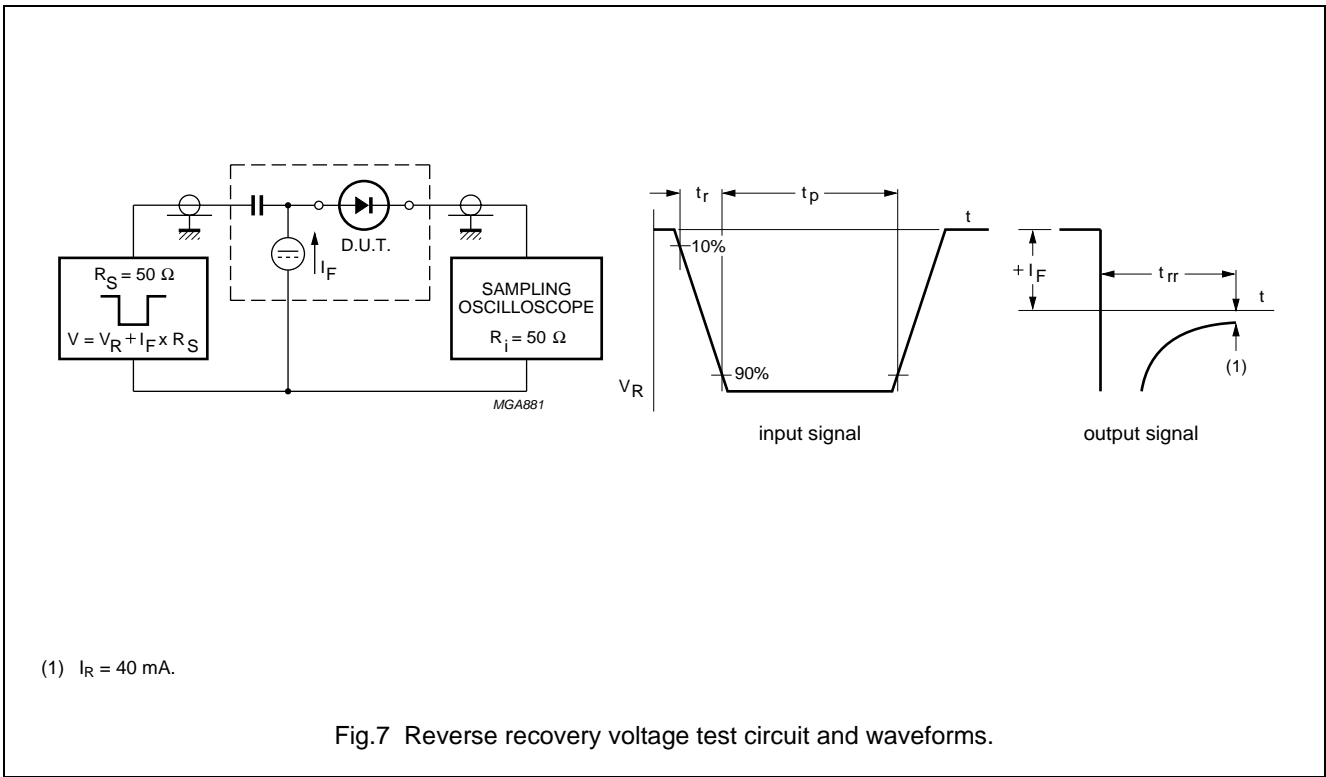
High-speed double diode

BAS56



High-speed double diode

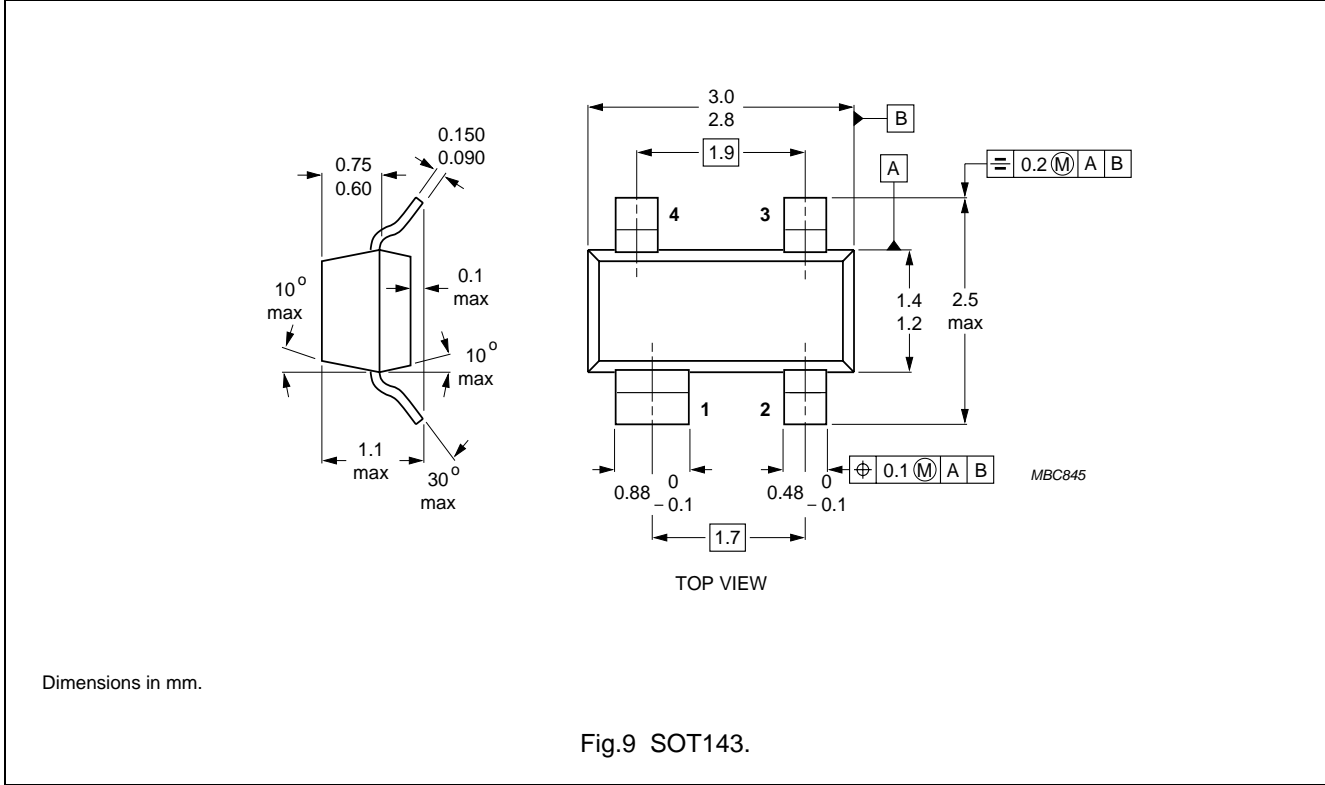
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High-speed double diode

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PACKAGE OUTLINE



High-speed double diode

BAS56

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. No changes were made to the content, except for the legal definitions and disclaimers.

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