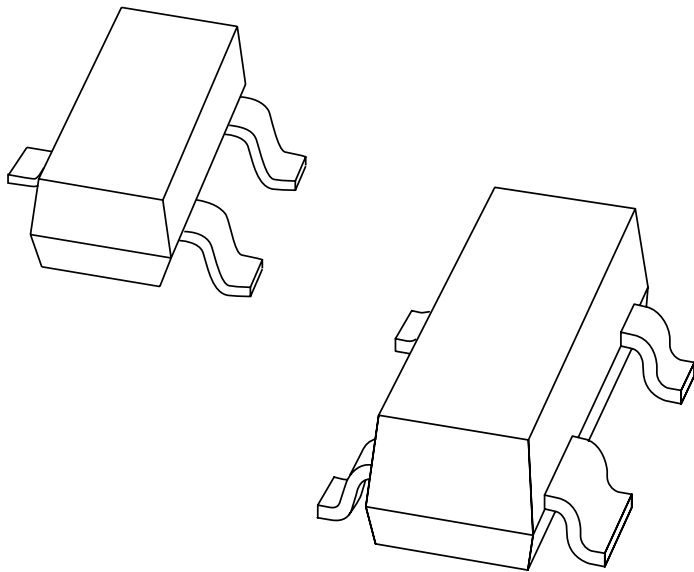


# DATA SHEET



## **BAS70 series** Schottky barrier (double) diodes

Product specification  
Supersedes data of 1999 Jun 01

2001 Oct 11

# Schottky barrier (double) diodes

# BAS70 series

### FEATURES

- Low forward current
- High breakdown voltage
- Guard ring protected
- Small plastic SMD package
- Low diode capacitance.

### APPLICATIONS

- Ultra high-speed switching
- Voltage clamping
- Protection circuits.

### DESCRIPTION

Planar Schottky barrier diodes with an integrated guard ring for stress protection. Single diodes and double diodes with different pinning are available.

The diodes BAS70, BAS70-04, BAS70-05 and BAS70-06 are encapsulated in a SOT23 small plastic SMD package. The BAS70-07 is encapsulated in a SOT143B small plastic SMD package.

### MARKING

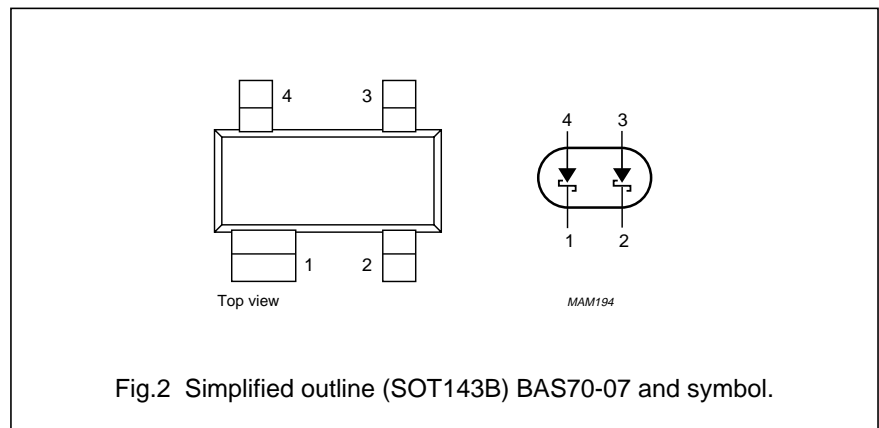
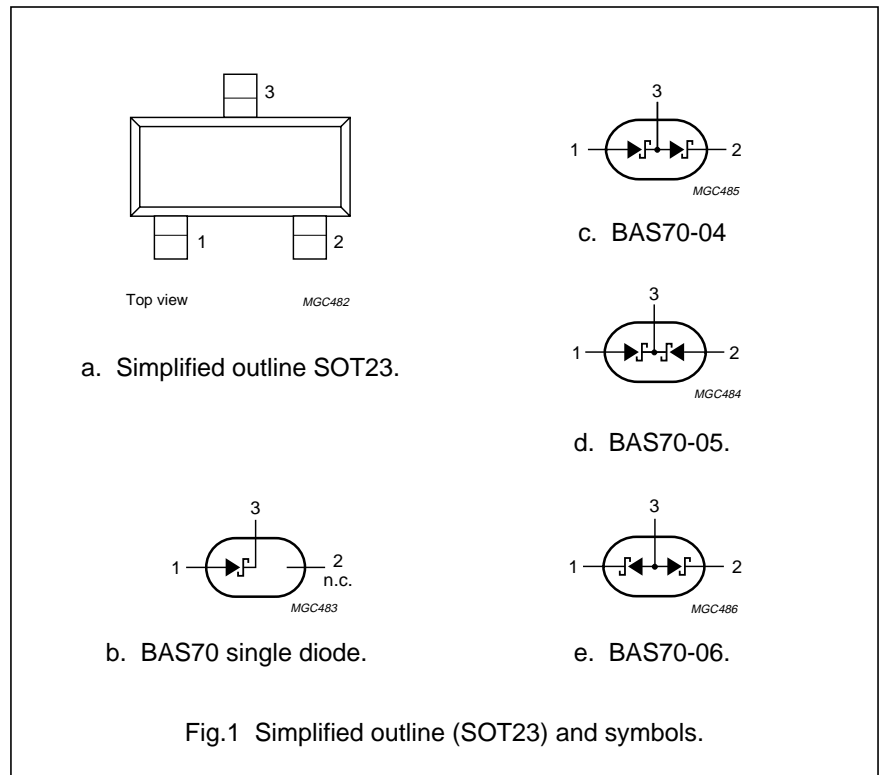
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BAS70	73*
BAS70-04	74*
BAS70-05	75*
BAS70-06	76*
BAS70-07	77*

### Note

- \* = p: Made in Hong Kong.  
 \* = t: Made in Malaysia.  
 \* = W: Made in China.

### PINNING

PIN	DESCRIPTION				
	SOT23				SOT143B
	BAS70 (see Fig.1b)	BAS70-04 (see Fig.1c)	BAS70-05 (see Fig.1d)	BAS70-06 (see Fig.1e)	BAS70-07 (see Fig.2)
1	a <sub>1</sub>	a <sub>1</sub>	a <sub>1</sub>	k <sub>1</sub>	k <sub>1</sub>
2	n.c.	k <sub>2</sub>	a <sub>2</sub>	k <sub>2</sub>	k <sub>2</sub>
3	k <sub>1</sub>	k <sub>1</sub> , a <sub>2</sub>	k <sub>1</sub> , k <sub>2</sub>	a <sub>1</sub> , a <sub>2</sub>	a <sub>2</sub>
4	–	–	–	–	a <sub>1</sub>



## Schottky barrier (double) diodes

## BAS70 series

**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	70	V
$I_F$	continuous forward current		–	70	mA
$I_{FRM}$	repetitive peak forward current	$t_p \leq 1 \text{ s}; \delta \leq 0.5$	–	70	mA
$I_{FSM}$	non-repetitive peak forward current	$t_p < 10 \text{ ms}$	–	100	mA
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

**ELECTRICAL CHARACTERISTICS** $T_{amb} = 25 \text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	forward voltage	see Fig.3 $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 15 \text{ mA}$	410 750 1	mV mV V
$I_R$	reverse current	$V_R = 50 \text{ V}$ ; note 1; see Fig.4 $V_R = 70 \text{ V}$ ; note 1; see Fig.4	100 10	nA $\mu\text{A}$
$\tau$	charge carrier life time (Krakauer method)	$I_F = 5 \text{ mA}$	100	ps
$C_d$	diode capacitance	$f = 1 \text{ MHz}$ ; $V_R = 0$ ; see Fig.6	2	pF

**Note**1. Pulse test:  $t_p = 300 \mu\text{s}$ ;  $\delta = 0.02$ .**THERMAL CHARACTERISTICS**

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

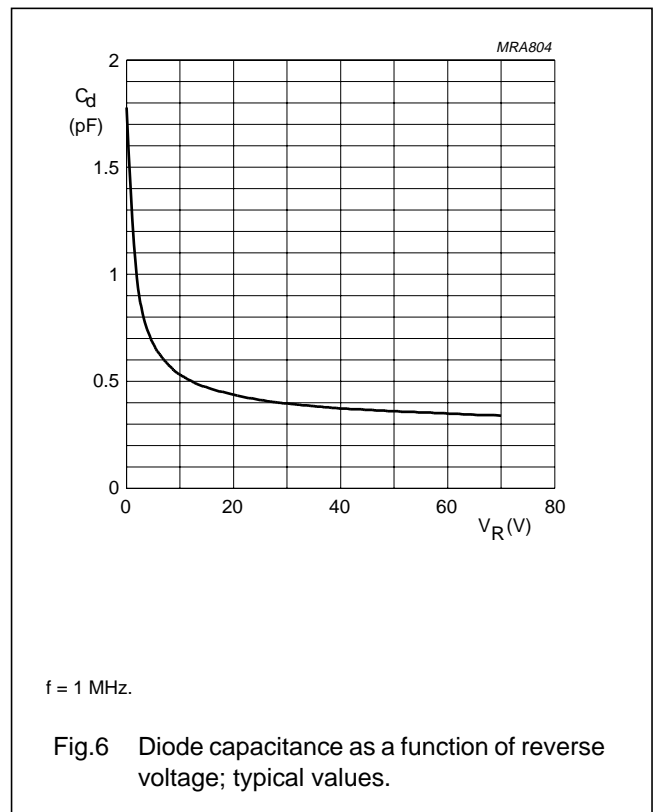
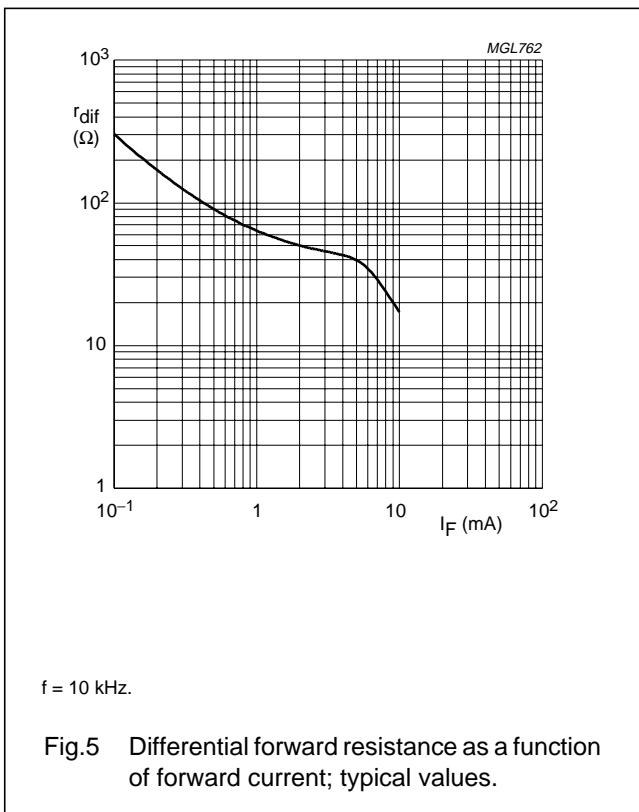
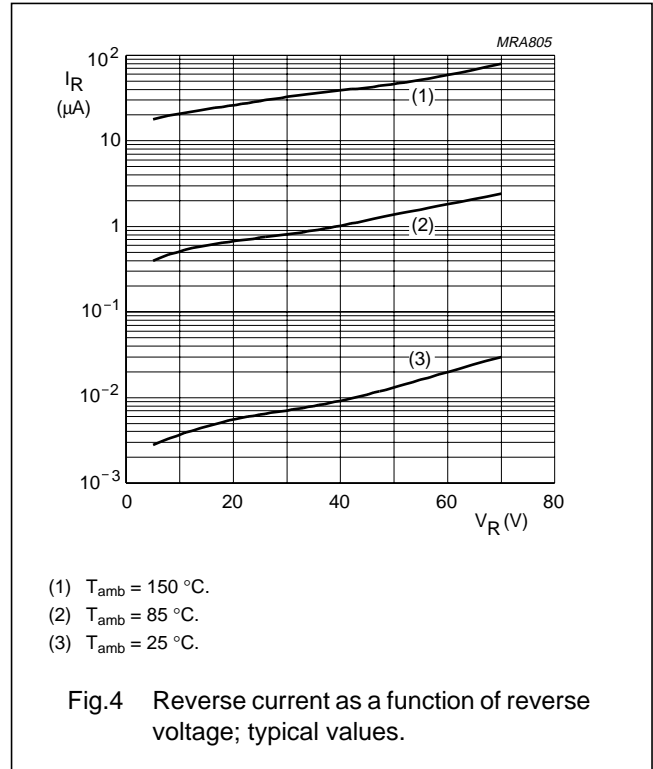
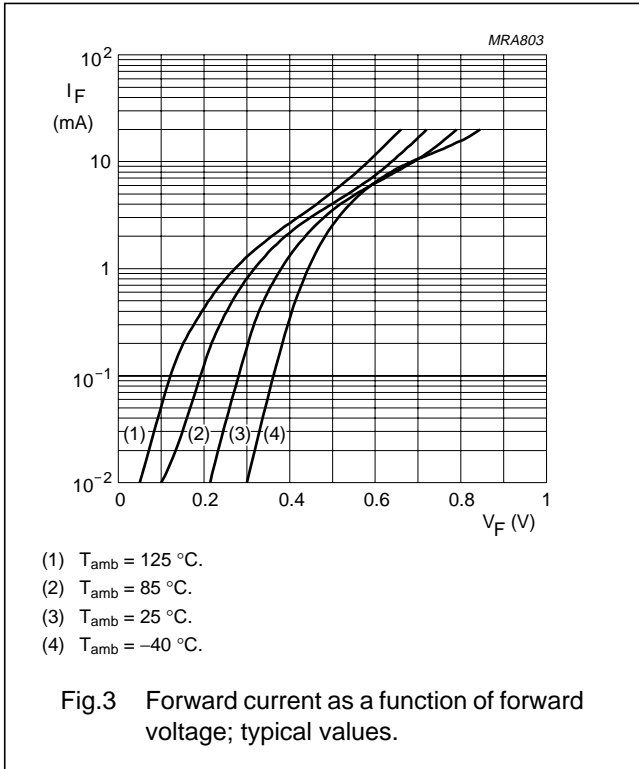
**Note**

1. Refer to SOT23 or SOT143B standard mounting conditions.

Schottky barrier (double) diodes

BAS70 series

GRAPHICAL DATA



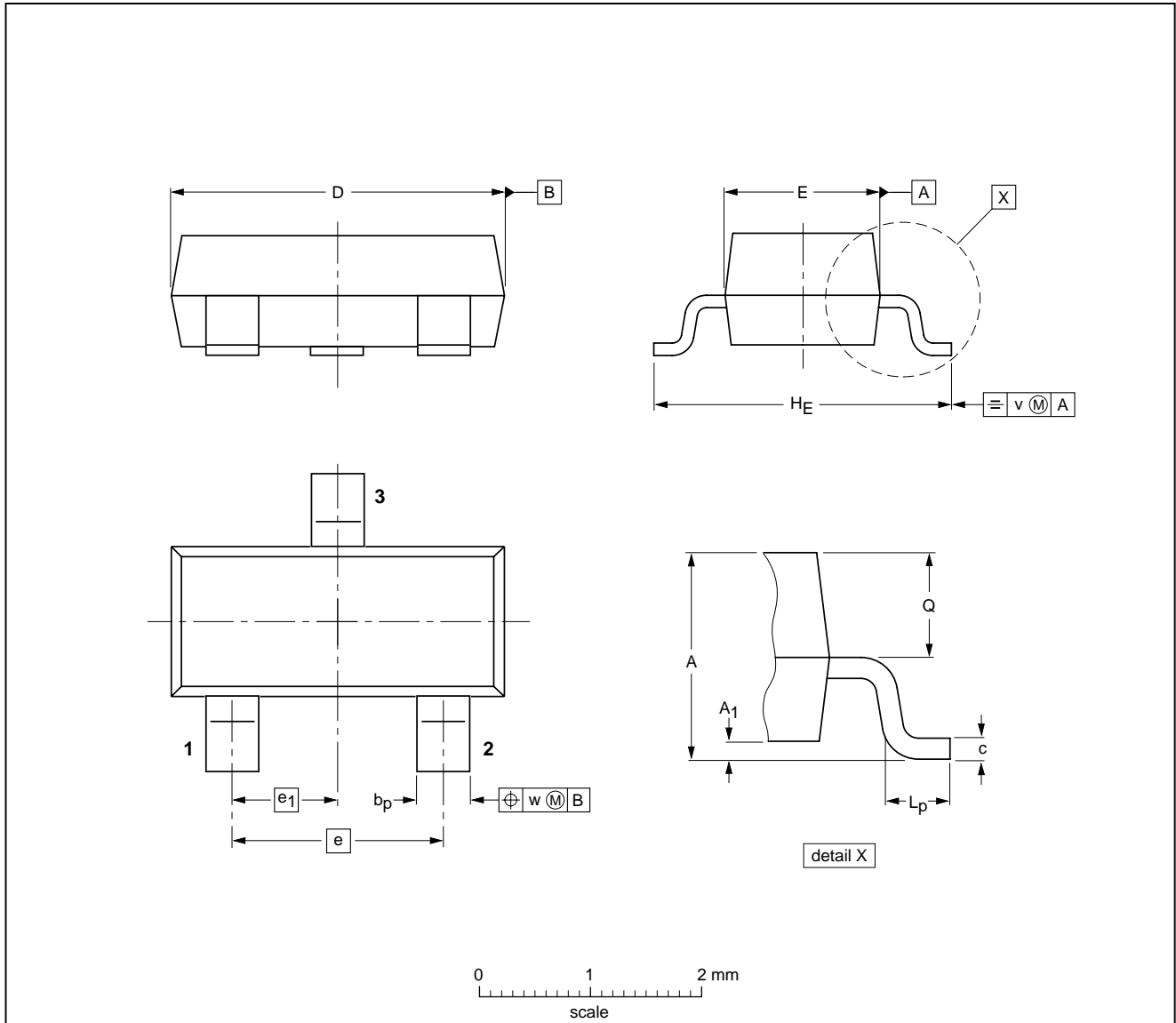
# Schottky barrier (double) diodes

# BAS70 series

## PACKAGE OUTLINES

Plastic surface mounted package; 3 leads

SOT23



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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

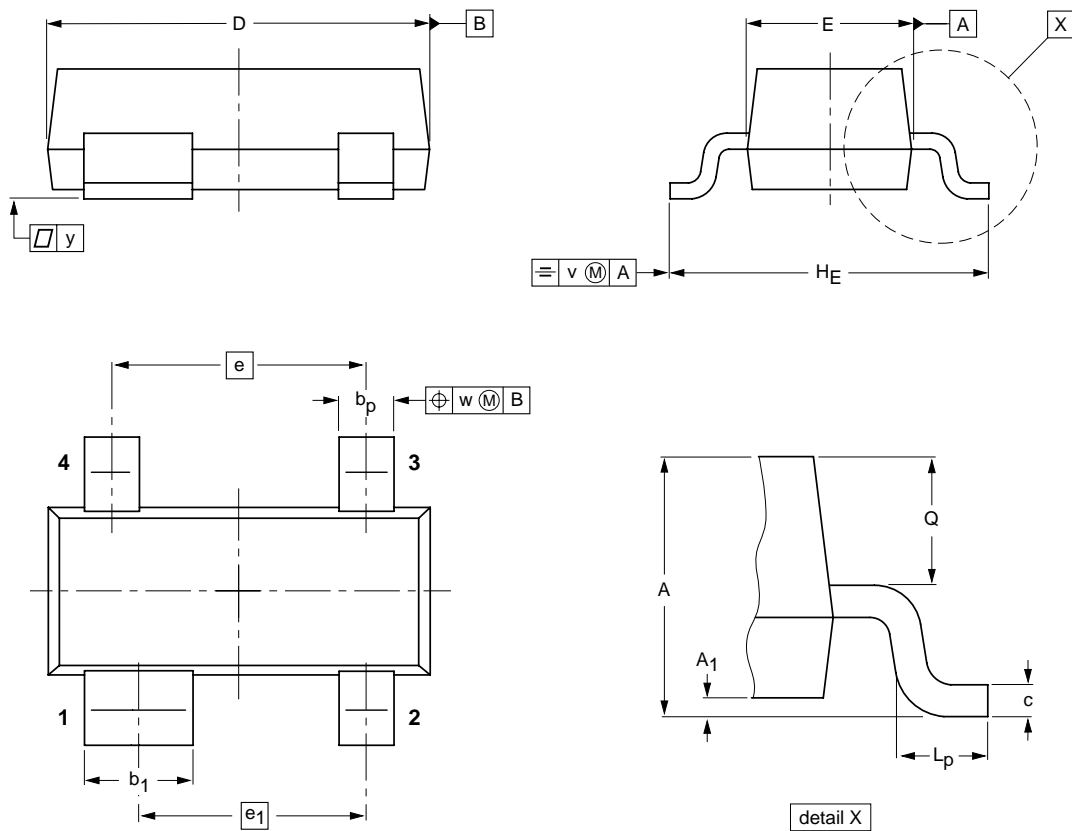
OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOT23		TO-236AB			97-02-28 99-09-13

Schottky barrier (double) diodes

BAS70 series

Plastic surface mounted package; 4 leads

SOT143B



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	b <sub>1</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w	y
mm	1.1 0.9	0.1	0.48 0.38	0.88 0.78	0.15 0.09	3.0 2.8	1.4 1.2	1.9	1.7	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT143B						97-02-28

## Schottky barrier (double) diodes

## BAS70 series

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DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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