

# BAP70AM

Silicon PIN diode array

Rev. 2 — 7 September 2010

Product data sheet

## 1. Product profile

### 1.1 General description

Four planar PIN diode array in SOT363 small SMD plastic package.

### 1.2 Features and benefits

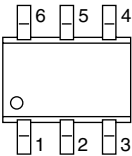
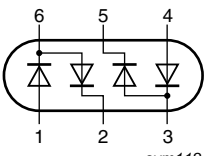
- High voltage current controlled RF resistor for RF attenuators
- Low diode capacitance
- Very low series inductance
- Low distortion

### 1.3 Applications

- RF attenuators
- (SAT) TV applications
- Car radio applications

## 2. Pinning information

Table 1. Discrete pinning

Pin	Description	Simplified outline	Graphic symbol
1	anode diode 1		
2	cathode diode 2		
3	anode diode 3 / cathode diode 4		
4	anode diode 4		
5	cathode diode 3		
6	anode diode 2 / cathode diode 1		

## 3. Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
BAP70AM	-	plastic surface-mounted package; 6 leads	SOT363



## 4. Marking

**Table 3. Marking**

Type number	Marking code	Description
BAP70AM	N9*	* = - : made in Hong Kong
		* = p : made in Hong Kong
		* = t : made in Malaysia

## 5. Limiting values

**Table 4. Limiting values**

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

Symbol	Parameter	Conditions	Min	Max	Unit
$V_R$	reverse voltage		-	50	V
$I_F$	forward current		-	100	mA
$P_{tot}$	total power dissipation	$T_{sp} = 90\text{ °C}$	-	300	mW
$T_{stg}$	storage temperature		-65	+150	°C
$T_j$	junction temperature		-65	+150	°C

## 6. Thermal characteristics

**Table 5. Thermal characteristics**

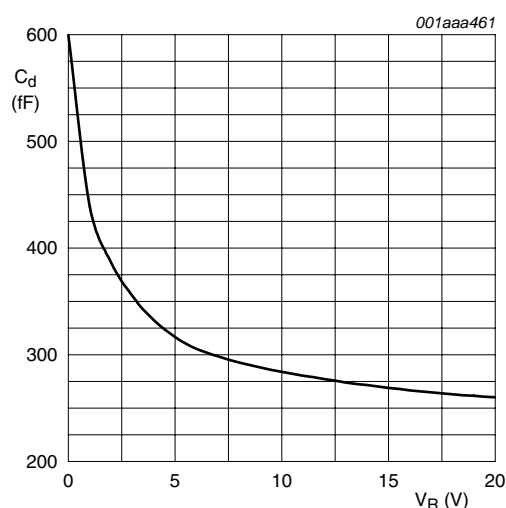
Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-sp)}$	thermal resistance from junction to solder point		260	K/W

## 7. Characteristics

**Table 6. Characteristics**

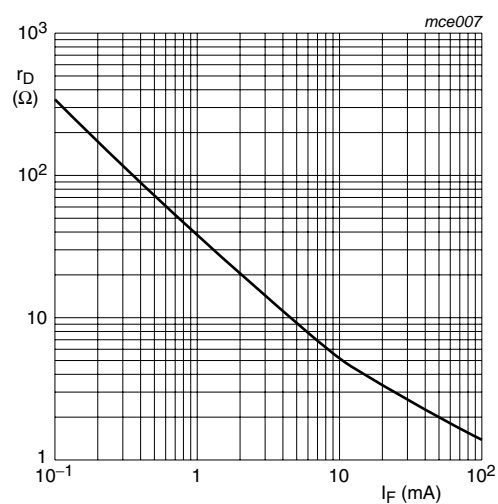
$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	$I_F = 50\text{ mA}$	-	0.9	1.1	V
$I_R$	reverse current	$V_R = 50\text{ V}$	-	-	< 100	nA
$C_d$	diode capacitance	see <a href="#">Figure 1</a> ; $f = 1\text{ MHz}$ ;				
		$V_R = 0\text{ V}$	-	570	-	fF
		$V_R = 1\text{ V}$	-	400	-	fF
		$V_R = 5\text{ V}$	-	270	-	fF
		$V_R = 20\text{ V}$	-	200	250	fF
$r_D$	diode forward resistance	see <a href="#">Figure 2</a> ; $f = 100\text{ MHz}$ ;				
		$I_F = 0.5\text{ mA}$	-	77	100	$\Omega$
		$I_F = 1\text{ mA}$	-	40	50	$\Omega$
		$I_F = 10\text{ mA}$	-	5.4	7	$\Omega$
		$I_F = 100\text{ mA}$	-	1.4	1.9	$\Omega$
$\tau_L$	charge carrier life time	when switched from $I_F = 10\text{ mA}$ to $I_R = 6\text{ mA}$ ; $R_L = 100\text{ }\Omega$ ; measured at $I_R = 3\text{ mA}$	-	1.25	-	$\mu\text{s}$
$L_S$	series inductance	$I_F = 100\text{ mA}$ ; $f = 100\text{ MHz}$	-	0.6	-	nH



$f = 1\text{ MHz}$ ;  $T_j = 25\text{ }^{\circ}\text{C}$ .

**Fig 1. Diode capacitance as a function of reverse voltage; typical values**



$f = 100\text{ MHz}$ ;  $T_j = 25\text{ }^{\circ}\text{C}$ .

**Fig 2. Diode forward resistance as a function of forward current; typical values**

8. Package outline

Plastic surface-mounted package; 6 leadsSOT363

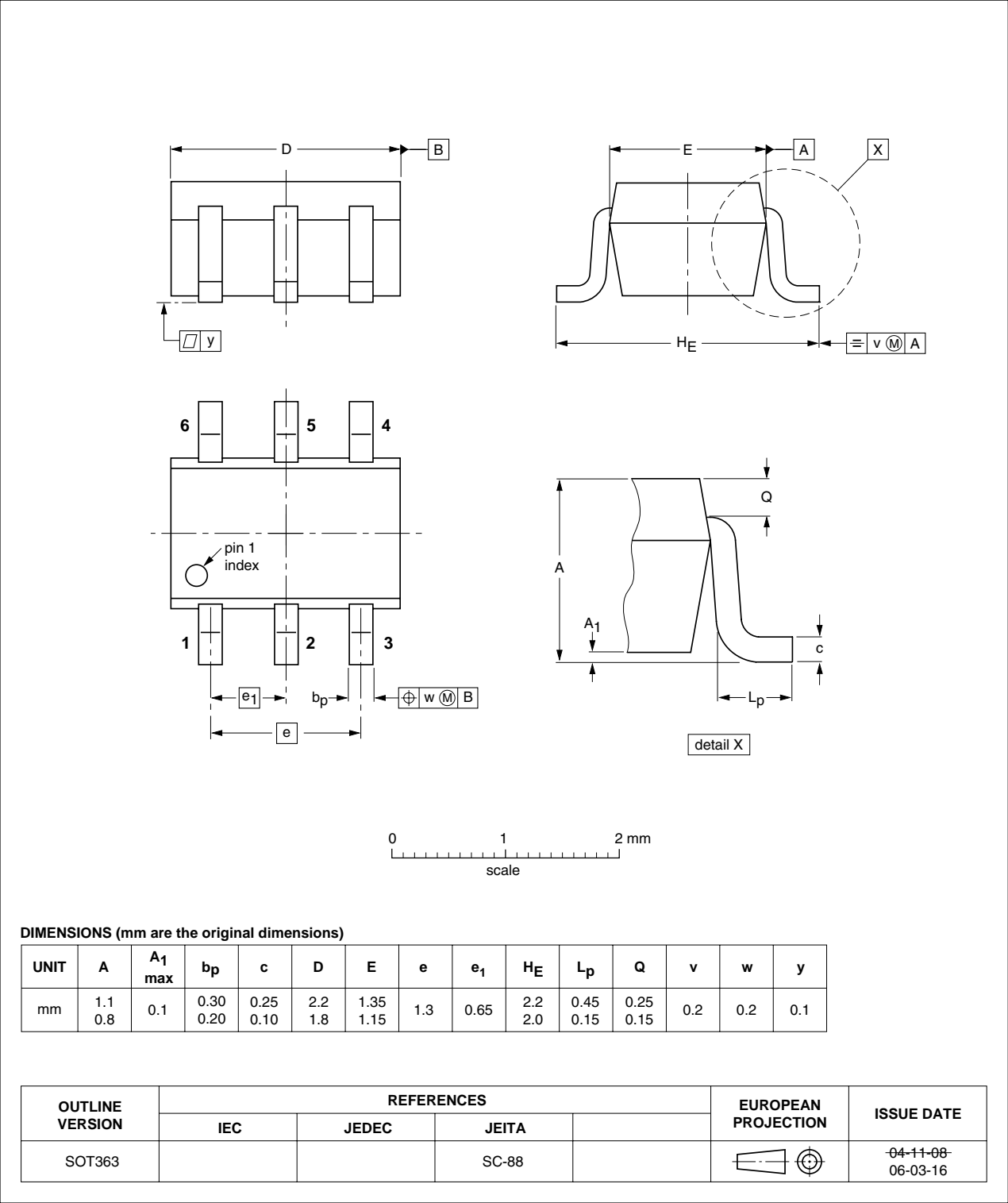


Fig 3. Package outline SOT363

## 9. Abbreviations

Table 7. Abbreviations

Acronym	Description
PIN	P-type, Intrinsic, N-type
SMD	Surface Mounted Device
RF	Radio Frequency
SAT	SATellite

## 10. Revision history

Table 8. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BAP70AM v.2	20100907	Product data sheet	-	BAP70AM v.1
Modifications:	<ul style="list-style-type: none"><li>• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors</li><li>• Legal texts have been adapted to the new company name where appropriate</li><li>• <a href="#">Table 3 on page 2</a>: Marking code has been updated to current situation.</li></ul>			
BAP70AM v.1	20061120	Product data sheet	-	-

## 11. Legal information

### 11.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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