



# BAP70AM

Silicon PIN diode array

Rev. 4 — 7 March 2014

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

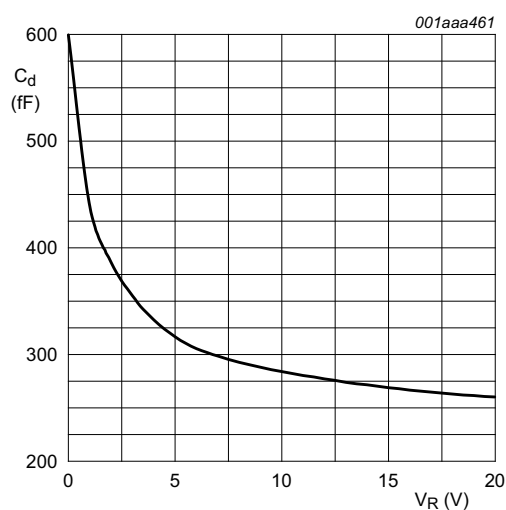
Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-sp)}$	thermal resistance from junction to solder point		260	K/W

## 7. Characteristics

**Table 6. Characteristics**

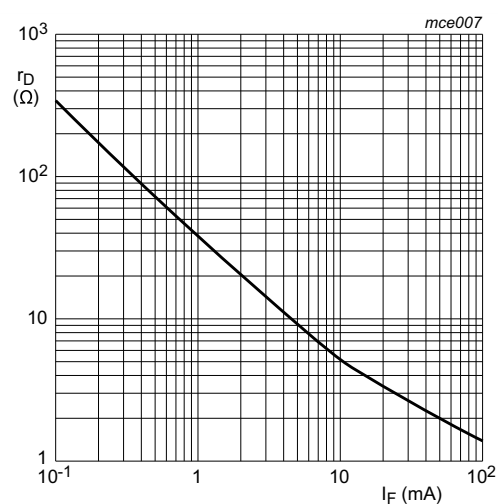
$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

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

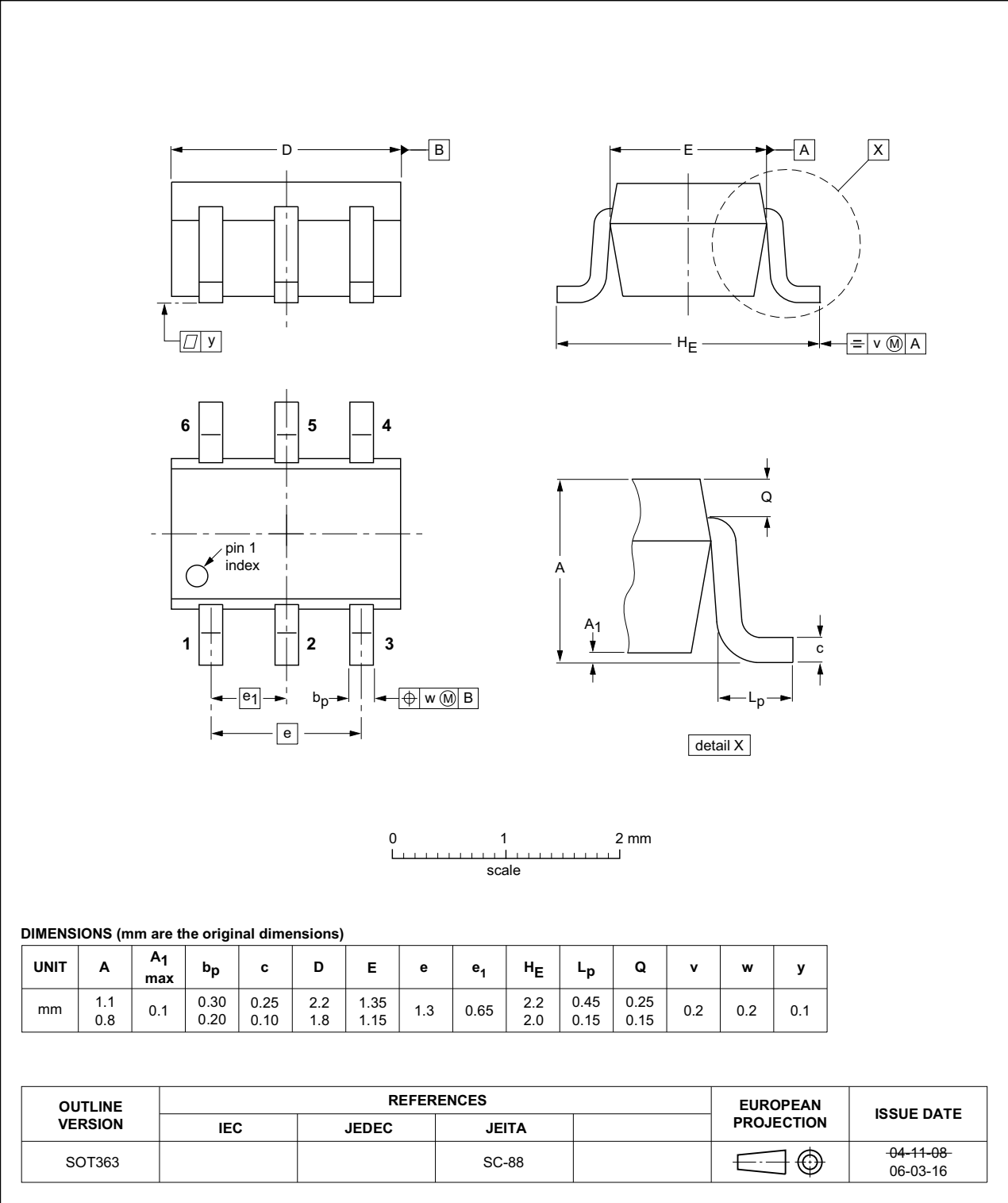


Fig 3. Package outline SOT363

## 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.4	20140307	Product data sheet	-	BAP70AM v.3
Modifications:	• Rollback to previous version			
BAP70AM v.3	20140127	Product data sheet	-	BAP70AM v.2
BAP70AM v.2	20100907	Product data sheet	-	BAP70AM v.1
BAP70AM v.1	20061120	Product data sheet	-	-

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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.

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

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