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

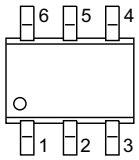
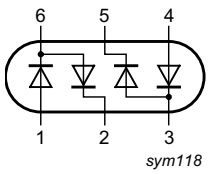
- High voltage current controlled RF resistor for RF attenuators
- Low diode capacitance
- Very low series inductance
- Low distortion

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 °C	-	300	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–65	+150	°C

6. Thermal characteristics

Table 5. Thermal characteristics

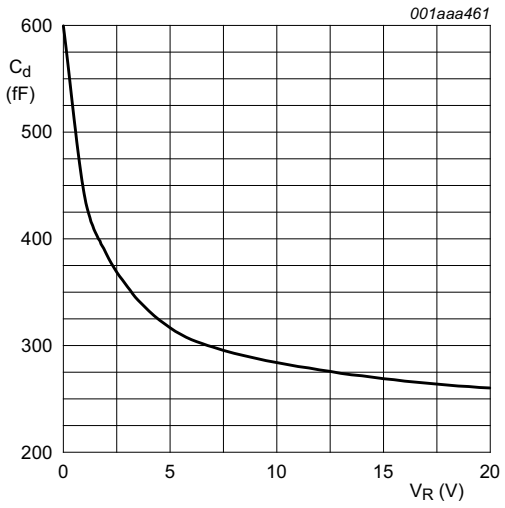
Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-sp)}$	thermal resistance from junction to solder point		260	K/W

7. Characteristics

Table 6. Characteristics

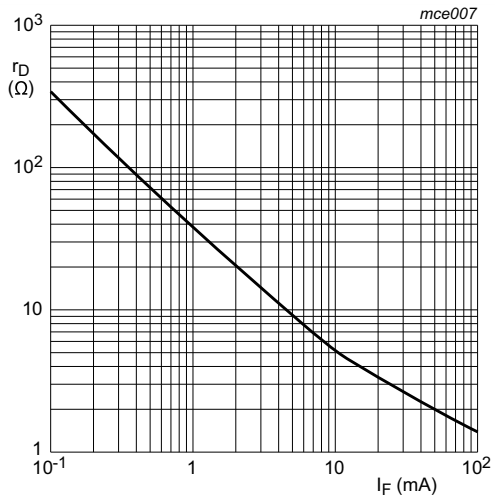
T_{amb} = 25 °C unless otherwise specified.

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



f = 1 MHz; T_j = 25 °C.

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

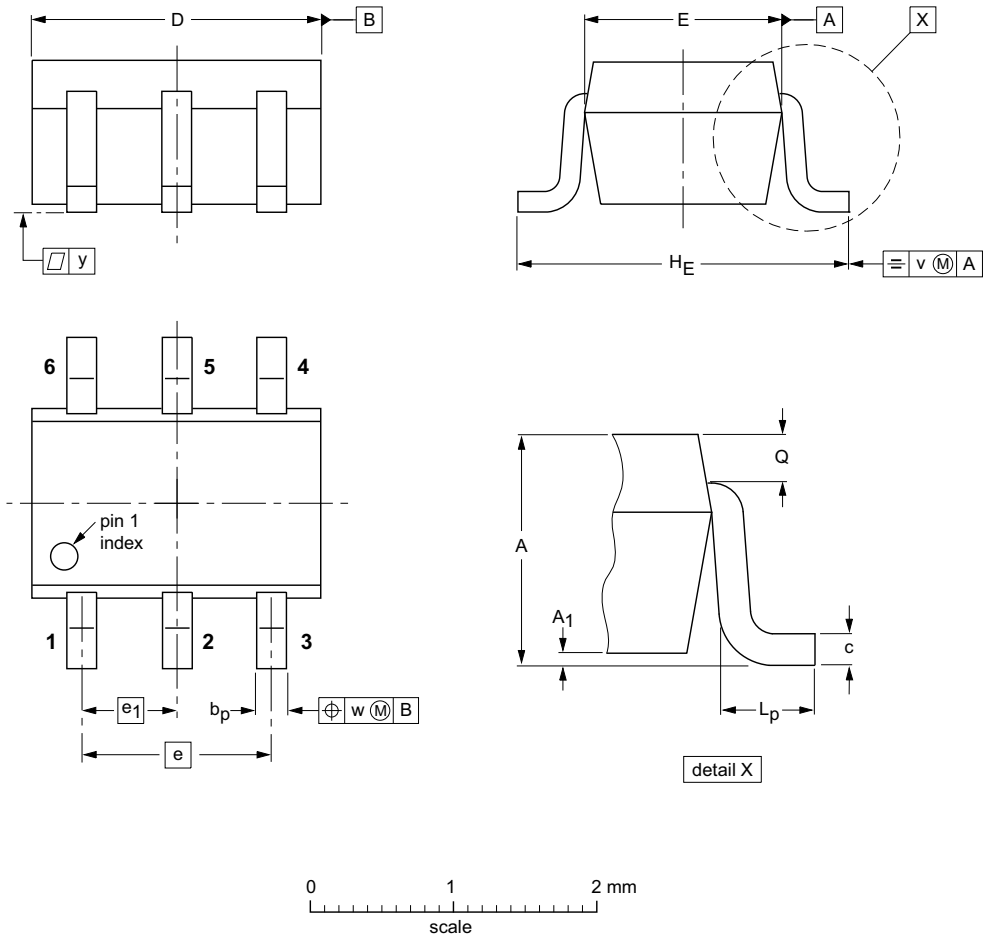


f = 100 MHz; T_j = 25 °C.

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

8. Package outline

Plastic surface-mounted package; 6 leads **SOT363**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT363			SC-88			~~04-11-08~~ 06-03-16

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	-	-

11. Legal information

11.1 Data sheet status

Document status[1][2]	Product status[3]	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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