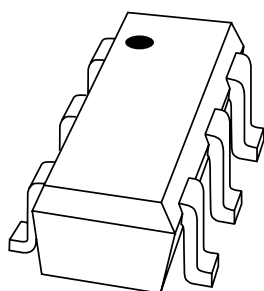


# DATA SHEET



**BAS16VY**

High-speed switching diode array

Product specification

2003 Apr 08

# High-speed switching diode array

## BAS16VY

### FEATURES

- Small plastic SMD package
- High switching speed
- Three electrically isolated diodes
- Low capacitance.

### APPLICATIONS

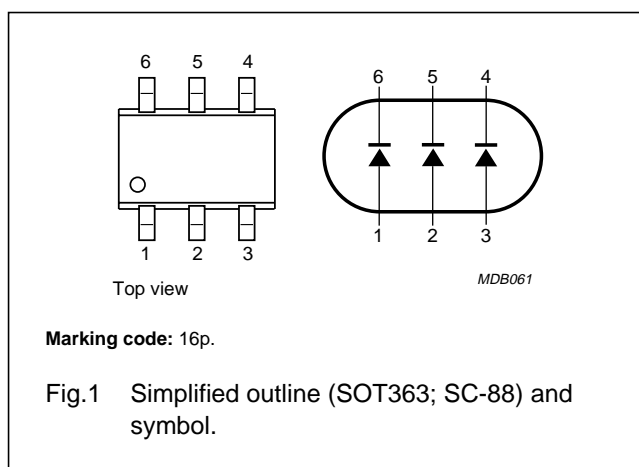
- General purpose switching in surface mounted circuits.

### DESCRIPTION

The BAS16VY consists of three electrically isolated high-speed switching diodes, encapsulated in a small SOT363 (SC-88) SMD plastic package.

### PINNING

PIN	DESCRIPTION
1	anode (a1)
2	anode (a2)
3	anode (a3)
4	cathode (k3)
5	cathode (k2)
6	cathode (k1)



### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_{RRM}$	repetitive peak reverse voltage		–	85	V
$V_R$	continuous reverse voltage		–	75	V
$I_F$	continuous forward current		–	200	mA
$I_{FRM}$	repetitive peak forward current		–	450	mA
$I_{FSM}$	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4 $t = 1\text{ }\mu\text{s}$ $t = 1\text{ ms}$ $t = 1\text{ s}$	– – –	4.5 1 0.5	A A A
$P_{tot}$	total power dissipation	$T_s = 85\text{ °C}$ ; note 1	–	250	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–65	+150	°C

### Note

1. Solder points at pins: 2, 3, 5 and 6.

## High-speed switching diode array

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**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	forward voltage	see Fig.3 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 50\text{ mA}$ $I_F = 150\text{ mA}$	715 855 1 1.25	mV mV V V
$I_R$	reverse current	see Fig.5 $V_R = 25\text{ V}$ $V_R = 75\text{ V}$ $V_R = 25\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$ $V_R = 75\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$	30 1 30 50	nA $\mu\text{A}$ $\mu\text{A}$ $\mu\text{A}$
$C_d$	diode capacitance	$f = 1\text{ MHz}; V_R = 0$ ; see Fig.6	1.5	pF
$t_{rr}$	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$ ; $R_L = 100\text{ }\Omega$ ; measured at $I_R = 1\text{ mA}$ ; see Fig.7	4	ns
$V_{fr}$	forward recovery voltage	when switched from $I_F = 10\text{ mA}$ ; $t_r = 20\text{ ns}$ ; see Fig.8	1.75	V

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	note 1	$\leq 260$	K/W

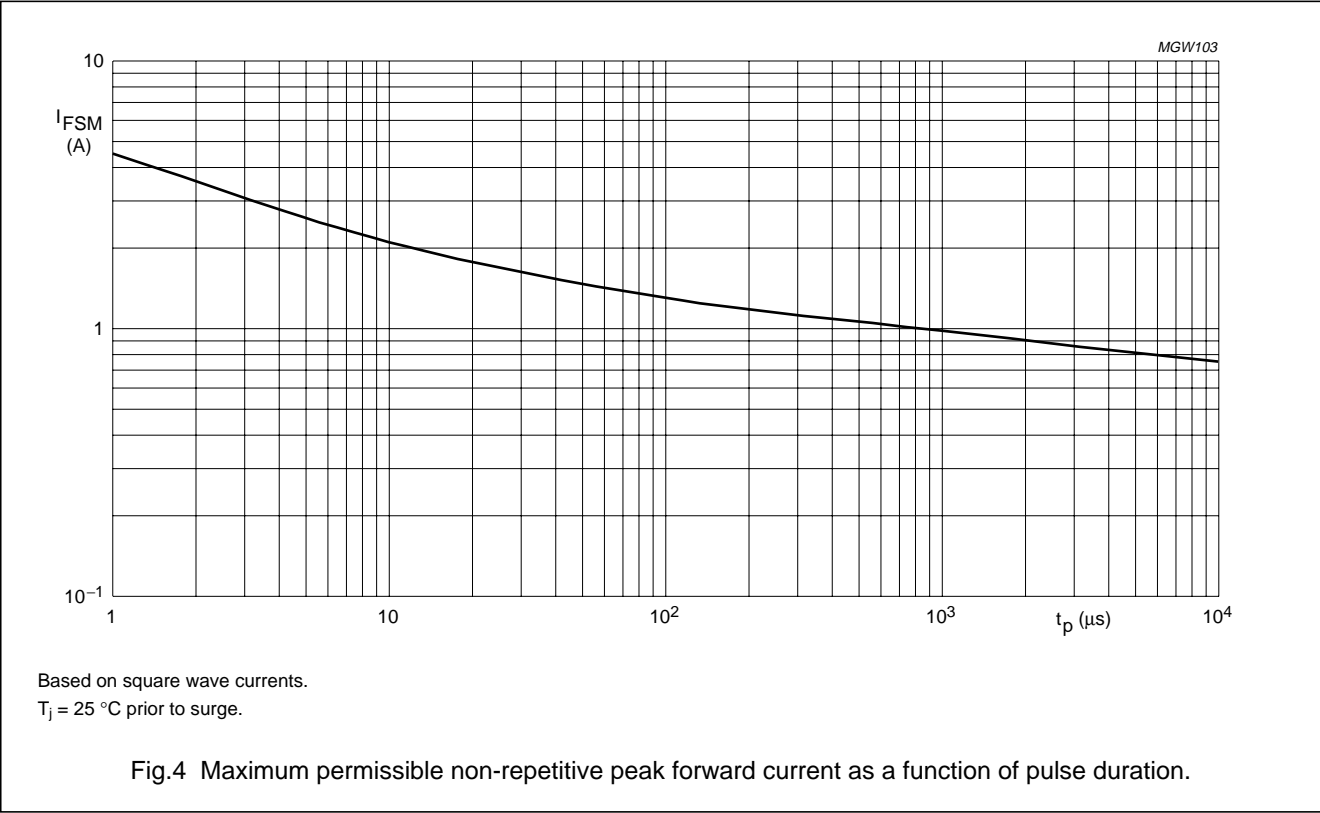
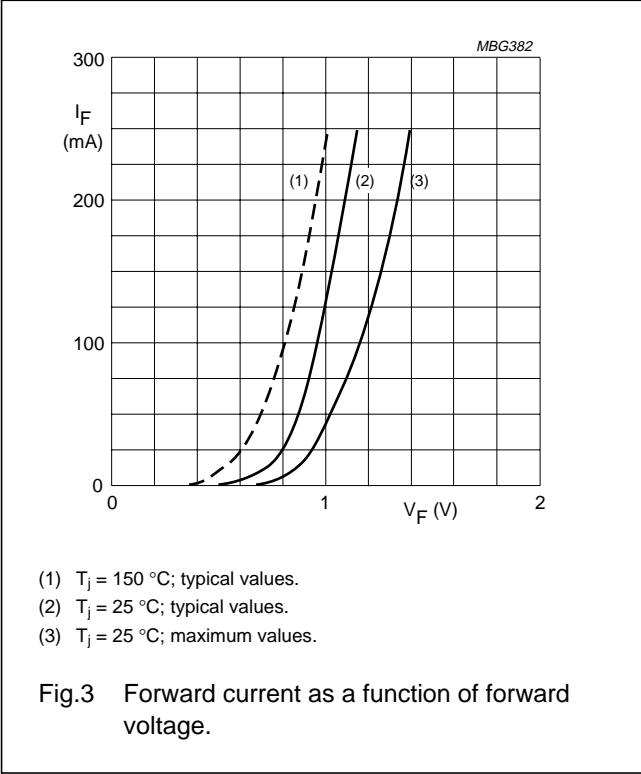
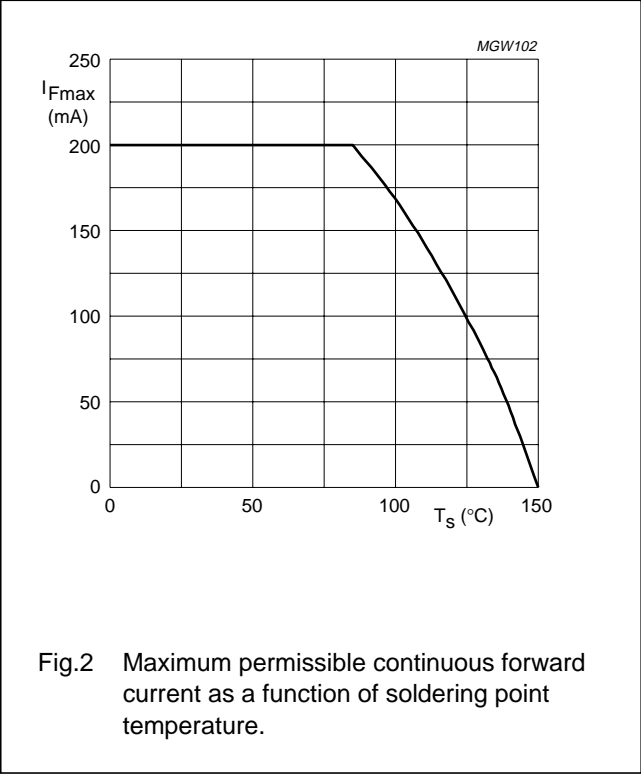
**Note**

1. Solder points at pins: 2, 3, 5 and 6.

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GRAPHICAL DATA



High-speed switching diode array

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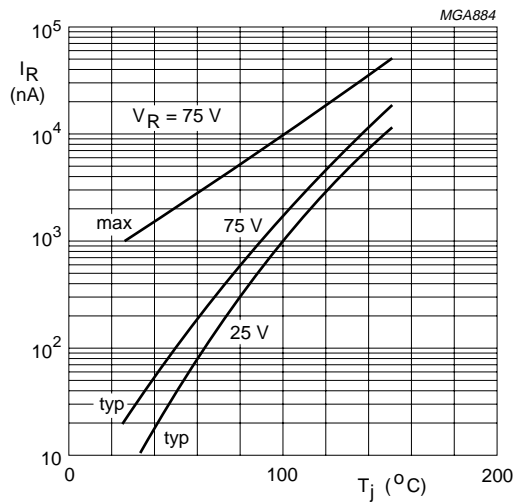
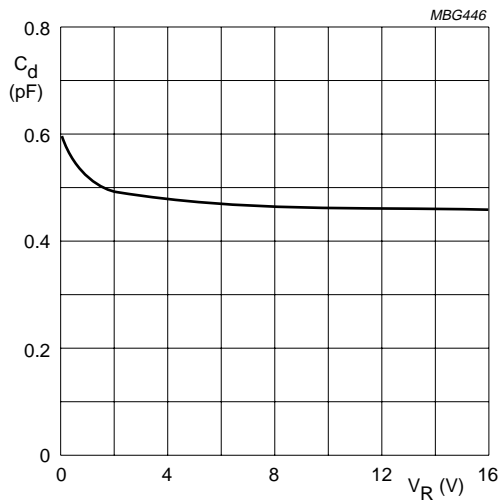


Fig.5 Reverse current as a function of junction temperature.

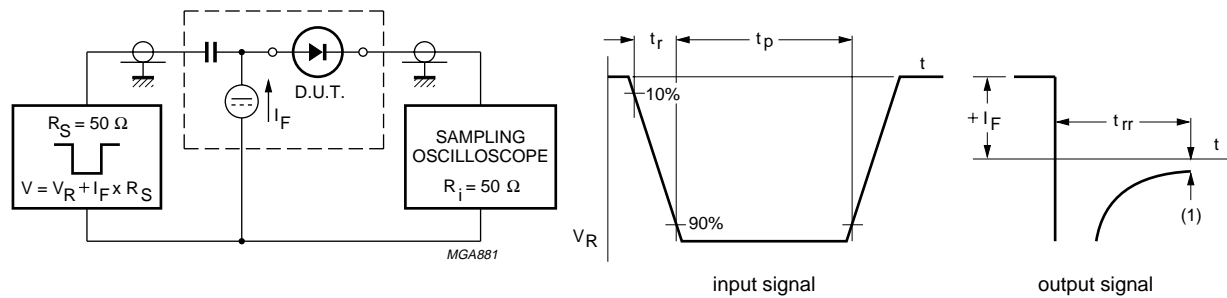


$f = 1\text{ MHz}$ ;  $T_j = 25\text{ }^{\circ}\text{C}$ .

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

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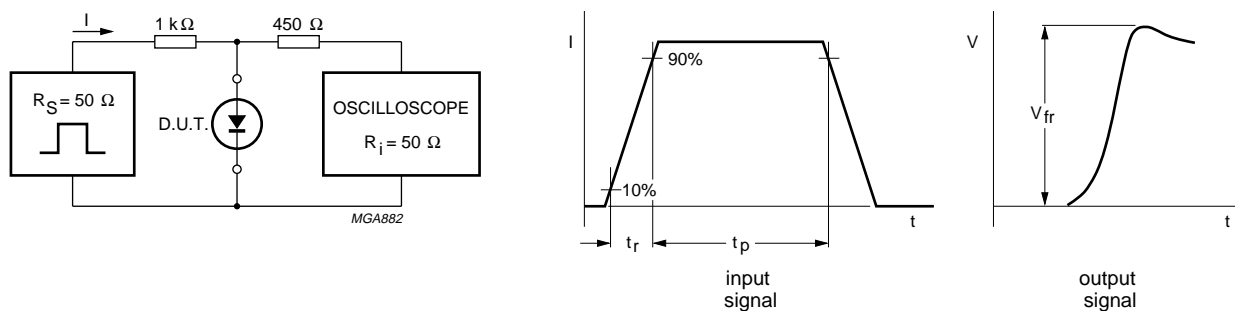
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(1)  $I_R = 1 \text{ mA}$ .

Input signal: reverse pulse rise time  $t_r = 0.6 \text{ ns}$ ; reverse voltage pulse duration  $t_p = 100 \text{ ns}$ ; duty factor  $\delta = 0.05$ .  
Oscilloscope: rise time  $t_r = 0.35 \text{ ns}$

Fig.7 Reverse recovery voltage test circuit and waveforms.



Input signal: forward pulse rise time  $t_r = 20 \text{ ns}$ ; forward current pulse duration  $t_p \geq 100 \text{ ns}$ ; duty factor  $\delta \leq 0.005$ .

Fig.8 Forward recovery voltage test circuit and waveforms.

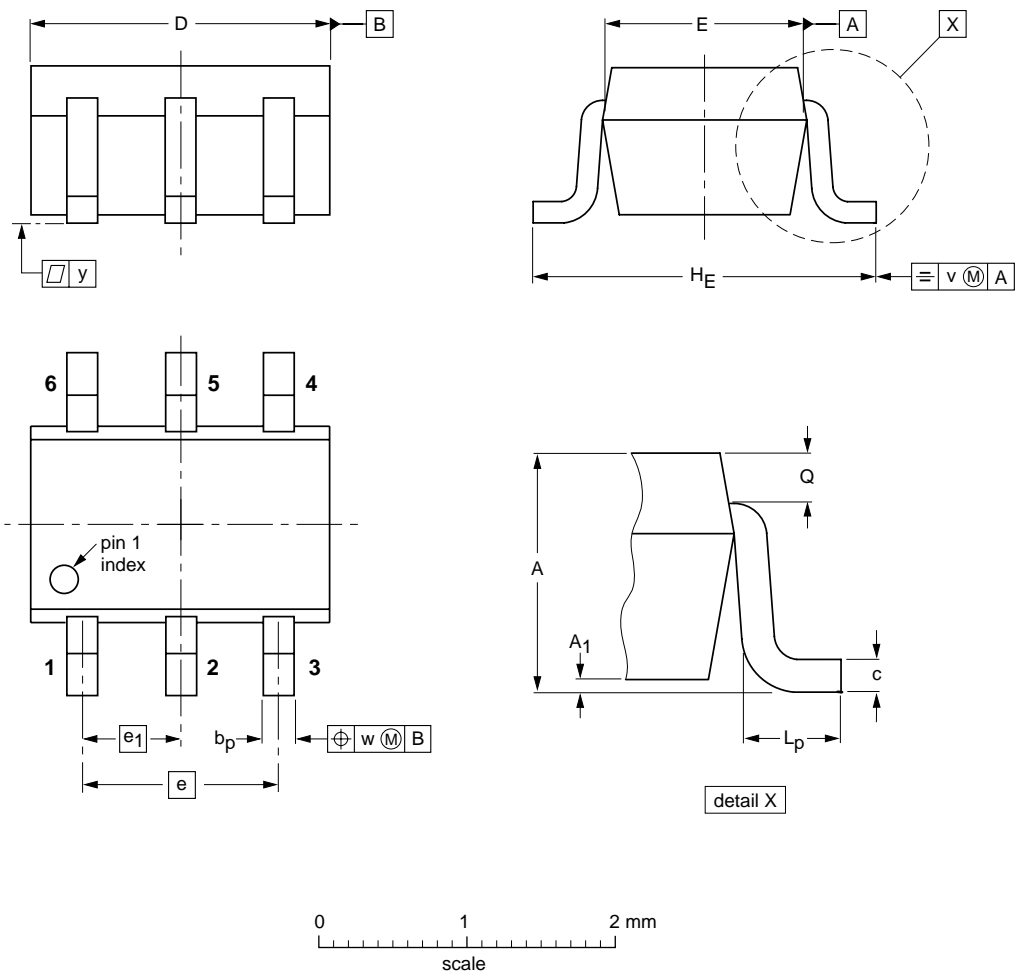
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PACKAGE OUTLINE


Plastic surface mounted package; 6 leads

SOT363



DIMENSIONS (mm are the original dimensions)

UNIT	A	A1 max	bp	c	D	E	e	e1	HE	Lp	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	EIAJ			
SOT363			SC-88			97-02-28

## High-speed switching diode array

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## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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**NOTES**

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