



**THE DATASHEET OF  
1N4731A,133**



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Kind regards,

Team Nexperia



# 1N4728A to 1N4749A

## Voltage regulator diodes

Rev. 02 — 30 October 2009

Product data sheet

## 1. Product profile

### 1.1 General description

Low voltage regulator diodes in hermetically sealed small SOD66 (DO-41) glass packages.

The series consists of 22 types with nominal working voltages from 3.3 to 24 V.

### 1.2 Features

- Total power dissipation: max.  $\leq 1000$  mW
- Working voltage range: nom. 3.3 V to 24 V
- Tolerance series:  $\pm 5\%$
- Small hermetically sealed glass package

### 1.3 Applications

- Low voltage stabilizers

### 1.4 Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	$I_F = 200$ mA	-	-	1.2	V
$P_{tot}$	total power dissipation		-	-	1000	mW

## 2. Pinning information

Table 2. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode		
2	anode		

[1] The marking band indicates the cathode.

### 3. Ordering information

**Table 3. Ordering information**

Type number	Package		Version
	Name	Description	
1N4728A to 1N4749A <sup>[1]</sup>	-	hermetically sealed glass package; axial leaded; 2 leads	SOD66

[1] The series consists of 22 types with nominal working voltages from 3.3 V to 24 V.

### 4. Marking

**Table 4. Marking codes**

Type number	Marking code
1N4728A to 1N4749A	The diodes are type branded.

### 5. Limiting values

**Table 5. Limiting values**

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

Symbol	Parameter	Conditions	Min	Max	Unit
$I_F$	forward current		-	500	mA
$I_Z$	working current		-	see <a href="#">Table 8</a>	
$I_{ZSM}$	non-repetitive peak reverse current		-	see <a href="#">Table 8</a>	
$P_{tot}$	total power dissipation	$T_{amb} = 50\text{ °C}$	-	1000	mW
$T_j$	junction temperature		-65	+200	°C
$T_{stg}$	storage temperature		-65	+200	°C

6. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{th(j-t)}$	thermal resistance from junction to tie-point	lead length 4 mm	-	-	110	K/W

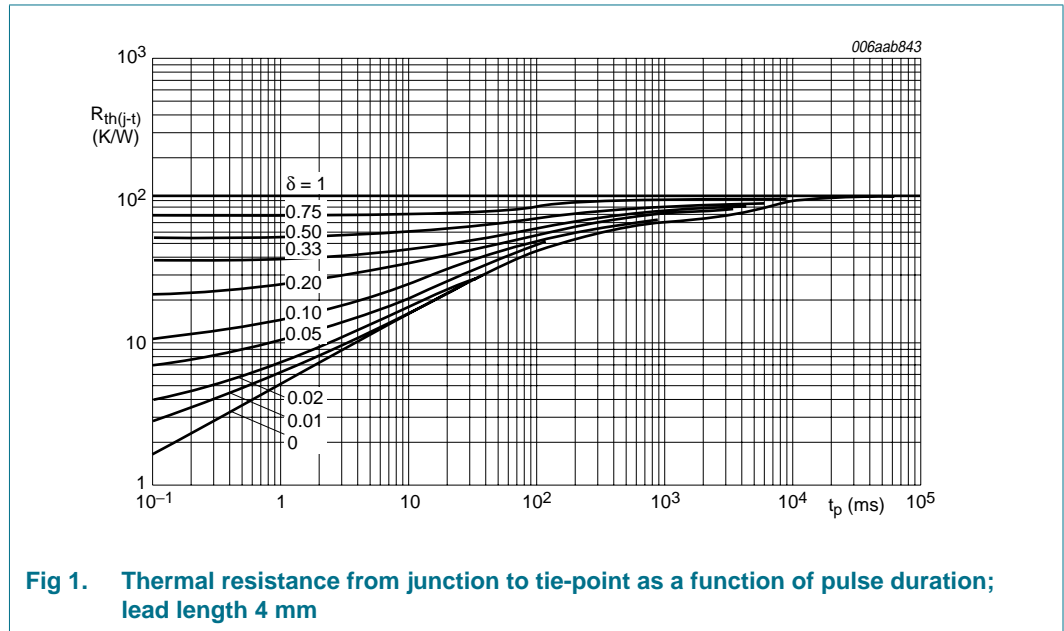


Fig 1. Thermal resistance from junction to tie-point as a function of pulse duration; lead length 4 mm

7. Characteristics

Table 7. Characteristics

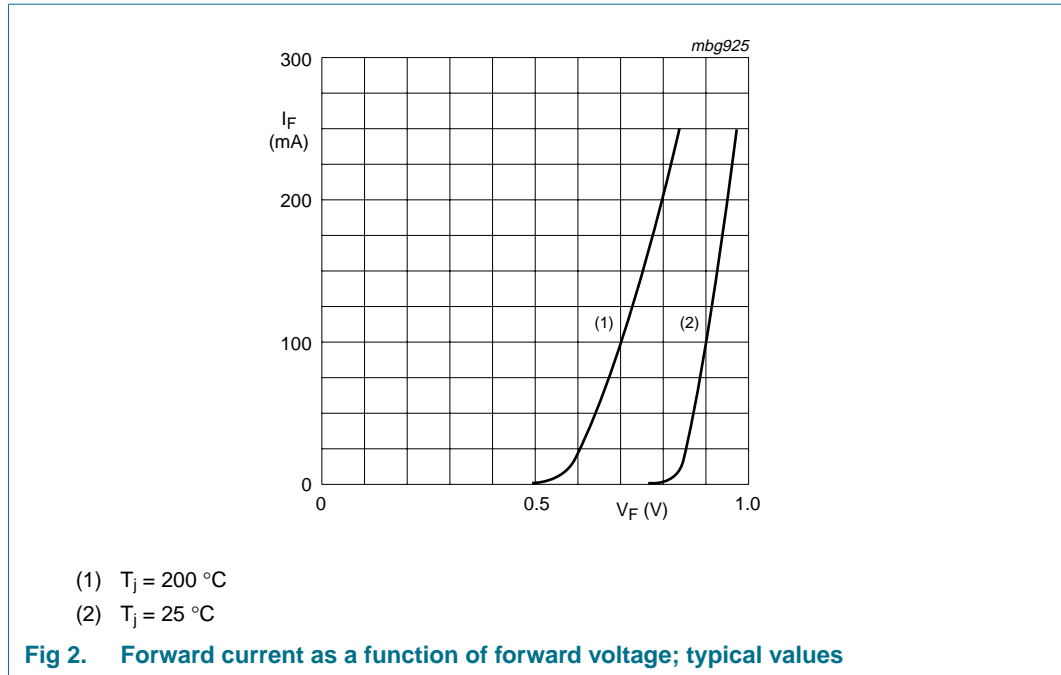
$T_j = 25^\circ\text{C}$  unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	$I_F = 200\text{ mA}$	-	-	1.2	V

**Table 8. Characteristics per type***T<sub>j</sub> = 25 °C unless otherwise specified.*

Type number	Working voltage V <sub>Z</sub> (V) <sup>[1]</sup> at I <sub>test</sub>	Test current I <sub>test</sub> (mA)	Differential resistance r <sub>diff</sub> (Ω)			Reverse current I <sub>R</sub> (μA)		Working current I <sub>Z</sub> (mA)	Non-repetitive peak reverse current I <sub>ZSM</sub> (mA) <sup>[2]</sup>
			at I <sub>test</sub>	at I <sub>Z</sub>	I <sub>Z</sub> (mA)	Max	V <sub>R</sub> (V)		
	Nom		Max	Max		Max		Max	Max
1N4728A	3.3	76	10	400	1	100	1	276	1380
1N4729A	3.6	69	10	400	1	100	1	252	1260
1N4730A	3.9	64	9	400	1	50	1	234	1190
1N4731A	4.3	58	9	400	1	10	1	217	1070
1N4732A	4.7	53	8	500	1	10	1	193	970
1N4733A	5.1	49	7	550	1	10	1	178	890
1N4734A	5.6	45	5	600	1	10	2	162	810
1N4735A	6.2	41	2	700	1	10	3	146	730
1N4736A	6.8	37	3.5	700	1	10	4	133	660
1N4737A	7.5	34	4	700	0.5	10	5	121	605
1N4738A	8.2	31	4.5	700	0.5	10	6	110	550
1N4739A	9.1	28	5	700	0.5	10	7	100	500
1N4740A	10	25	7	700	0.25	10	7.6	91	454
1N4741A	11	23	8	700	0.25	5	8.4	83	414
1N4742A	12	21	9	700	0.25	5	9.1	76	380
1N4743A	13	19	10	700	0.25	5	9.9	69	344
1N4744A	15	17	14	700	0.25	5	11.4	61	304
1N4745A	16	15.5	16	700	0.25	5	12.2	57	285
1N4746A	18	14	20	750	0.25	5	13.7	50	250
1N4747A	20	12.5	22	750	0.25	5	15.2	45	225
1N4748A	22	11.5	23	750	0.25	5	16.7	41	205
1N4749A	24	10.5	25	750	0.25	5	18.2	38	190

[1] V<sub>Z</sub> is measured with device at thermal equilibrium while held in clips at 10 mm from body in still air at 25 °C.[2] Half square wave or equivalent sine wave pulse 1/120 second duration superimposed on I<sub>test</sub>.



8. Package outline

Hermetically sealed glass package; axial leaded; 2 leads

SOD66

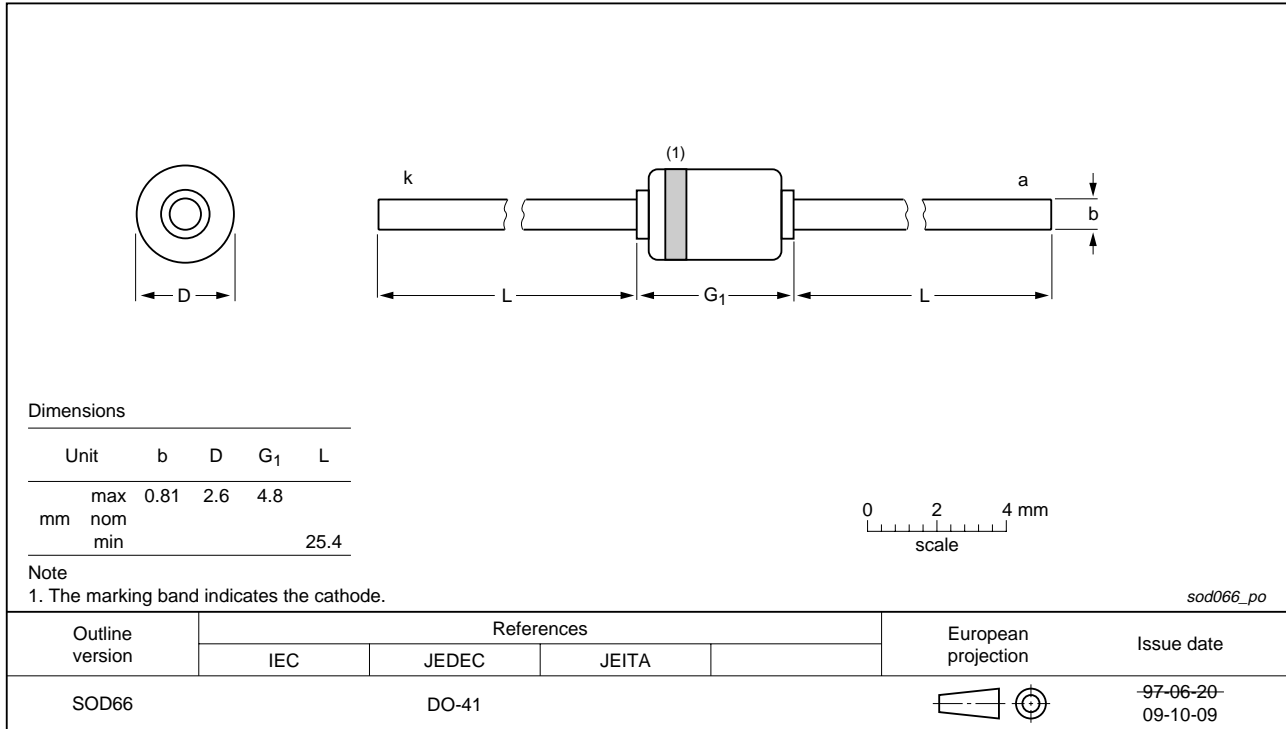


Fig 3. Package outline SOD66 (DO-41)

## 9. Packing information

**Table 9. Packing methods**

The indicated -xxx are the last three digits of the 12NC ordering code.<sup>[1]</sup>

Type number	Package	Description	Packing quantity
			10000
1N4728A to 1N4749A <sup>[2]</sup>	SOD66	52 mm tape ammopack, axial	-133
		52 mm reel pack, axial	-113

[1] For further information and the availability of packing methods, see [Section 11](#).

[2] The series consists of 22 types with nominal working voltages from 3.3 V to 24 V.

## 10. Revision history

**Table 10. Revision history**

Document ID	Release date	Data sheet status	Change notice	Supersedes
1N4728A_SER_2	20091030	Product data sheet	-	1N4728A_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 5 "Limiting values"</a>: <math>I_{ZM}</math> redefined to <math>I_Z</math> working current</li> <li>• <a href="#">Table 6</a>: <math>R_{th(j-t)}</math> redefined to <math>R_{th(j-t)}</math> thermal resistance from junction to tie-point</li> <li>• <a href="#">Figure 1</a>: <math>R_{th(j-t)}</math> redefined to <math>R_{th(j-t)}</math> thermal resistance from junction to tie-point</li> <li>• <a href="#">Table 8 "Characteristics per type"</a>: <math>I_{Ztest}</math> redefined to <math>I_{test}</math> test current</li> <li>• <a href="#">Figure 3 "Package outline SOD66 (DO-41)"</a>: updated</li> </ul>			
1N4728A_1	19960426	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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13. Contents

1 **Product profile** . . . . . 1

1.1 General description . . . . . 1

1.2 Features . . . . . 1

1.3 Applications . . . . . 1

1.4 Quick reference data . . . . . 1

2 **Pinning information** . . . . . 1

3 **Ordering information** . . . . . 2

4 **Marking** . . . . . 2

5 **Limiting values** . . . . . 2

6 **Thermal characteristics** . . . . . 3

7 **Characteristics** . . . . . 3

8 **Package outline** . . . . . 6

9 **Packing information** . . . . . 7

10 **Revision history** . . . . . 8

11 **Legal information** . . . . . 9

11.1 Data sheet status . . . . . 9

11.2 Definitions . . . . . 9

11.3 Disclaimers . . . . . 9

11.4 Trademarks . . . . . 9

12 **Contact information** . . . . . 9

13 **Contents** . . . . . 10

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