

# 1N4728A to 1N4749A

# Voltage regulator diodes Rev. 02 — 30 October 2009

**Product data sheet** 

### **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. ≤ 1000 mW
- Working voltage range: nom. 3.3 V to 24 V
- Tolerance series: ±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	Тур	Max	Unit
$V_{F}$	forward voltage	$I_F = 200 \text{ mA}$	-	-	1.2	V
P <sub>tot</sub>	total power dissipation		-	-	1000	mW

#### **Pinning information** 2.

Table 2. **Pinning** 

Pin	Description	Simplified outline	Graphic symbol
1	cathode	[ <u>1]</u>	
2	anode	ĸ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	1 2 006aaa152

<sup>[1]</sup> The marking band indicates the cathode.



## 3. Ordering information

Table 3. Ordering information

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

<sup>[1]</sup> 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 <sub>F</sub>	forward current		-	500	mA
I <sub>Z</sub>	working current		-	see Table 8	
I <sub>ZSM</sub>	non-repetitive peak reverse current		-	see Table 8	
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> = 50 °C	-	1000	mW
T <sub>j</sub>	junction temperature		-65	+200	°C
$T_{stg}$	storage temperature		-65	+200	°C

### 6. Thermal characteristics

Table 6. Thermal characteristics

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

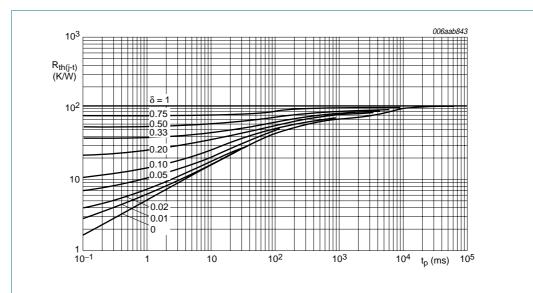


Fig 1. Thermal resistance from junction to tie-point as a function of pulse duration; lead length 4 mm

### 7. Characteristics

Table 7. Characteristics

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

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

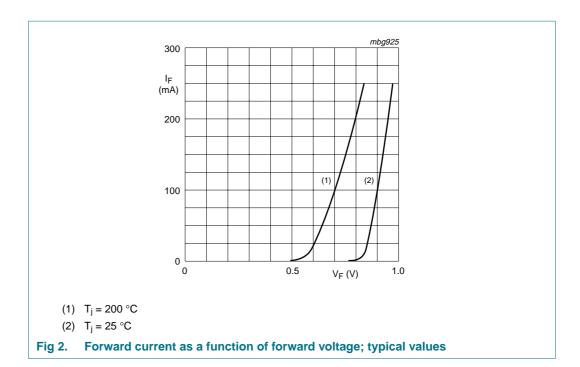
Table 8. Characteristics per type

 $T_i = 25 \,^{\circ}C$  unless otherwise specified.

Type number	Working voltage V <sub>Z</sub> (V)[1]	current I <sub>test</sub>	$I_{\text{test}}$ $r_{\text{dif}}(\Omega)$		Reverse current I <sub>R</sub> (μA)		Working current I <sub>Z</sub> (mA)	Non-repetitive peak reverse current	
at I <sub>test</sub>		(mA)	at I <sub>test</sub>	at I <sub>test</sub> at I <sub>Z</sub> I <sub>Z</sub> (mA)					I <sub>ZSM</sub> (mA)[2]
	Nom		Max	Max		Max	V <sub>R</sub> (V)	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

<sup>[1]</sup>  $V_Z$  is measured with device at thermal equilibrium while held in clips at 10 mm from body in still air at 25 °C.

<sup>[2]</sup> Half square wave or equivalent sine wave pulse 1/120 second duration superimposed on Itest-



## 8. Package outline

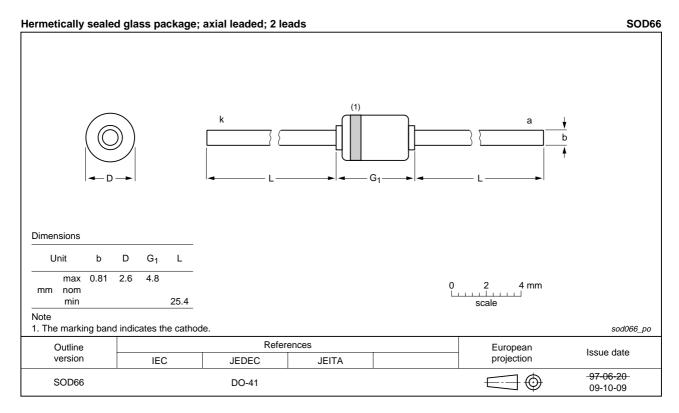


Fig 3. Package outline SOD66 (DO-41)

# 9. Packing information

Table 9. Packing methods

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

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

<sup>[1]</sup> For further information and the availability of packing methods, see Section 11.

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

# 10. Revision history

### Table 10. Revision history

	Data sheet status Product data sheet of this data sheet has been received.  NXP Semiconductors.	Change notice - designed to comply w	Supersedes 1N4728A_1 vith the new identity			
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		designed to comply w	ith the new identity			
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<ul> <li>Legal texts h</li> </ul>	ave been adapted to the new	company name whe	re appropriate.			
<ul> <li><u>Table 5 "Limiting values"</u>: I<sub>ZM</sub> redefined to I<sub>Z</sub> working current</li> </ul>						
<ul> <li><u>Table 6</u>: R<sub>th(j-tp)</sub> redefined to R<sub>th(j-t)</sub> thermal resistance from junction to tie-point</li> </ul>						
• Figure 1: R <sub>thi</sub>	<sub>(j-tp)</sub> redefined to R <sub>th(j-t)</sub> therma	al resistance from jun	ction to tie-point			
• Table 8 "Cha	racteristics per type": Iztest red	defined to Itest test cu	rrent			
<ul> <li>Figure 3 "Pad</li> </ul>	ckage outline SOD66 (DO-41	<u>"</u> : updated				
19960426	Product data sheet	-	-			
	<ul> <li>Legal texts h</li> <li>Table 5 "Limi</li> <li>Table 6: R<sub>th(j</sub></li> <li>Figure 1: R<sub>th</sub></li> <li>Table 8 "Cha</li> <li>Figure 3 "Par</li> </ul>	<ul> <li>Table 5 "Limiting values": I<sub>ZM</sub> redefined to</li> <li>Table 6: R<sub>th(j-tp)</sub> redefined to R<sub>th(j-t)</sub> thermal</li> <li>Figure 1: R<sub>th(j-tp)</sub> redefined to R<sub>th(j-t)</sub> thermal</li> <li>Table 8 "Characteristics per type": I<sub>Ztest</sub> red</li> <li>Figure 3 "Package outline SOD66 (DO-41)</li> </ul>	guidelines of NXP Semiconductors.  Legal texts have been adapted to the new company name whe  Table 5 "Limiting values": I <sub>ZM</sub> redefined to I <sub>Z</sub> working current  Table 6: R <sub>th(j-tp)</sub> redefined to R <sub>th(j-t)</sub> thermal resistance from junce  Figure 1: R <sub>th(j-tp)</sub> redefined to R <sub>th(j-t)</sub> thermal resistance from junce  Table 8 "Characteristics per type": I <sub>Ztest</sub> redefined to I <sub>test</sub> test cu  Figure 3 "Package outline SOD66 (DO-41)": updated			

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