



**THE DATASHEET OF  
1N4745A-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**

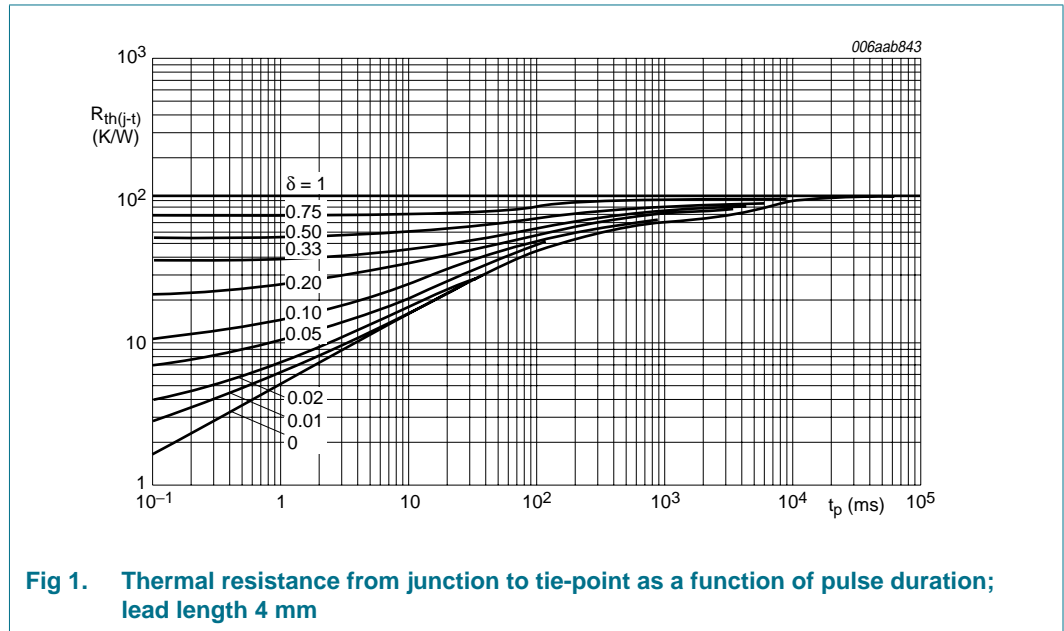
*In accordance with the Absolute Maximum Rating System (IEC 60134).*

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**

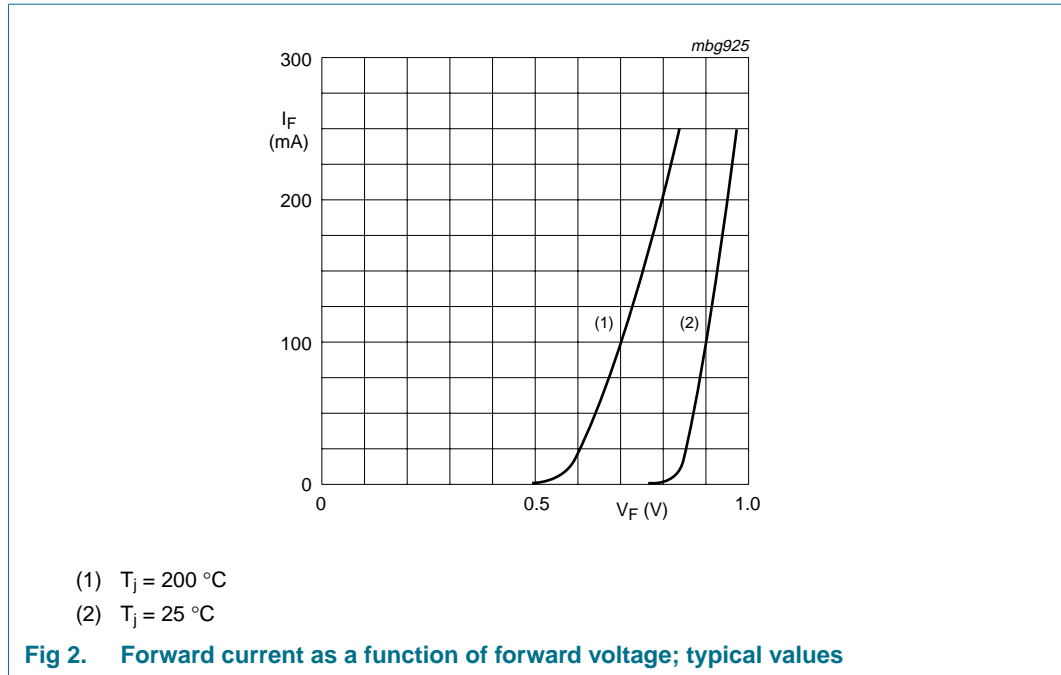
$T_j = 25^\circ\text{C}$  unless otherwise specified.

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

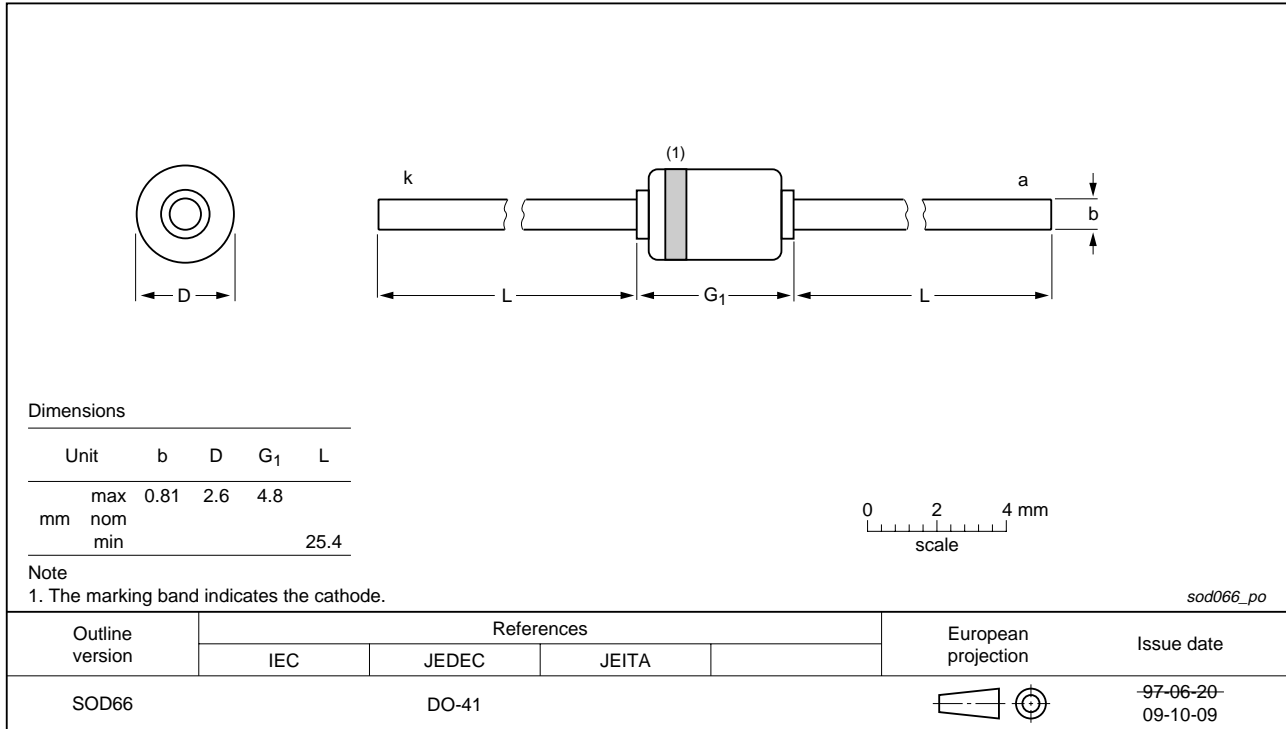


Fig 3. Package outline SOD66 (DO-41)

## 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".

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