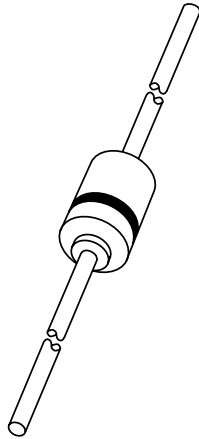


# DATA SHEET



## **1N4728A to 1N4749A** Voltage regulator diodes

Product specification  
Supersedes data of April 1992

1996 Apr 26

# Voltage regulator diodes

# 1N4728A to 1N4749A

### FEATURES

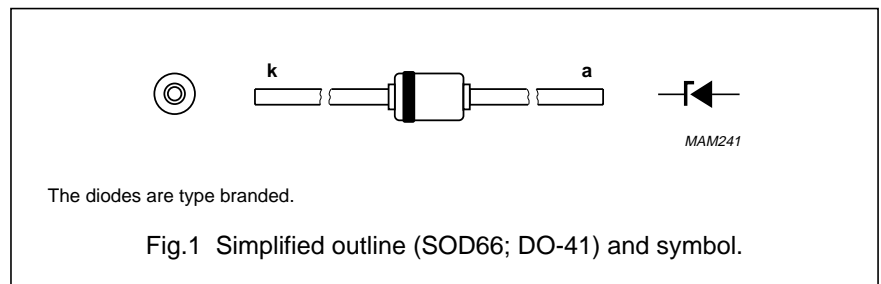
- Total power dissipation: max. 1000 mW
- Tolerance series:  $\pm 5\%$
- Working voltage range: nom. 3.3 to 24 V.

### APPLICATIONS

- Low voltage stabilizers.

### DESCRIPTION

Low voltage regulator diodes in hermetically sealed SOD66 (DO-41) packages. The series consists of 22 types with nominal working voltages from 3.3 to 24 V.



### LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_F$	continuous forward current		–	500	mA
$I_{ZM}$	working current		see Table "Per type"		
$I_{ZSM}$	non-repetitive peak reverse current		see Table "Per type"		
$P_{tot}$	total power dissipation	$T_{amb} = 50\text{ }^\circ\text{C}$	–	1000	mW
$T_{stg}$	storage temperature		–65	+200	$^\circ\text{C}$
$T_j$	junction temperature		–65	+200	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS

#### Total series

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 200\text{ mA}$ ; see Fig.3	–	1.2	V

## Voltage regulator diodes

## 1N4728A to 1N4749A

## Per type

$T_j = 25\text{ °C}$ ; unless otherwise specified.

TYPE No.	WORKING VOLTAGE $V_Z$ (V) <sup>(1)</sup> at $I_{Ztest}$	TEST CURRENT $I_{Ztest}$ (mA)	DIFFERENTIAL RESISTANCE			REVERSE CURRENT at REVERSE VOLTAGE		WORKING CURRENT $I_{ZM}$ (mA)	NON-REPETITIVE PEAK REVERSE CURRENT $I_{ZSM}$ (mA) <sup>(2)</sup>
			$r_{dif}$ ( $\Omega$ ) at $I_{Ztest}$	$r_{dif}$ ( $\Omega$ ) at $I_Z$	$I_Z$ (mA)	$I_R$ ( $\mu$ A)	$V_R$ (V)		
	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

## Notes

- $V_Z$  is measured with device at thermal equilibrium while held in clips at 10 mm from body in still air at 25 °C.
- Half square wave or equivalent sinewave pulse  $\frac{1}{120}$  second duration superimposed on  $I_{Ztest}$ .

## Voltage regulator diodes

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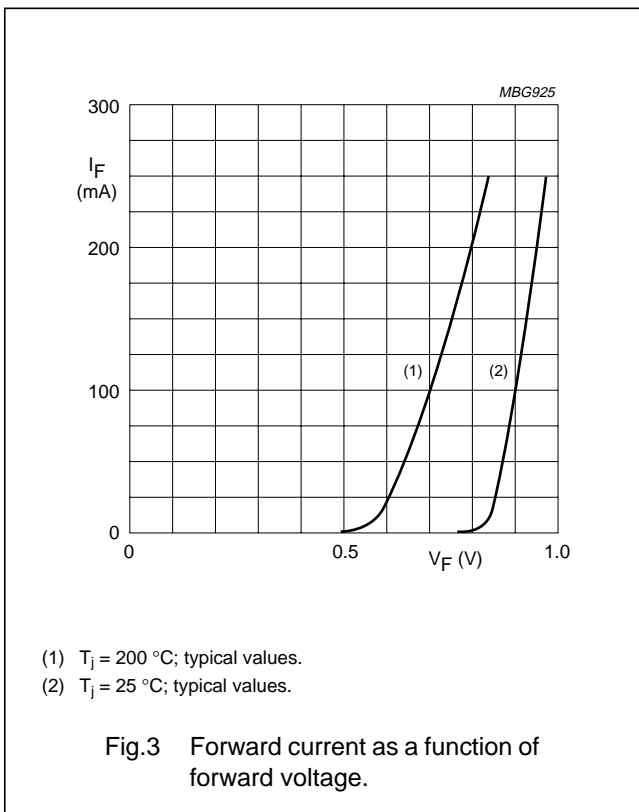
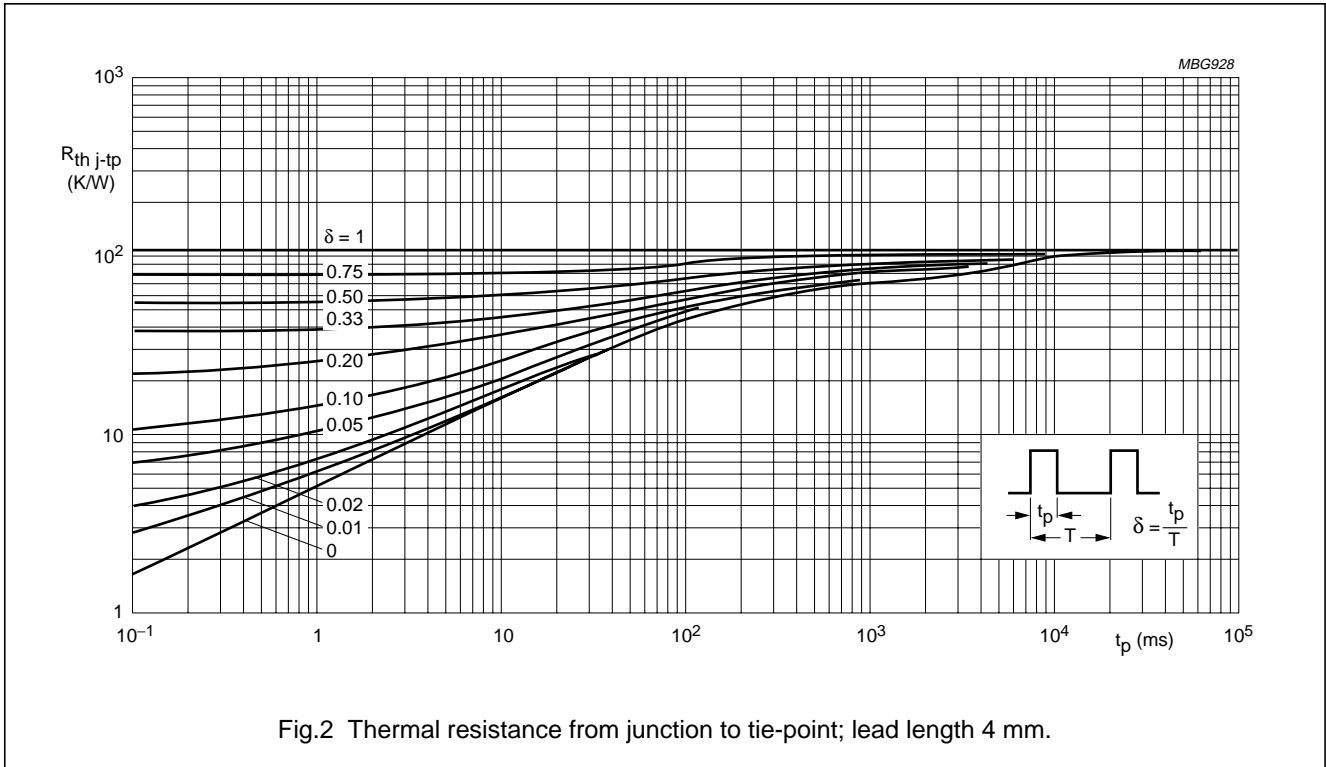
**THERMAL CHARACTERISTICS**

<b>SYMBOL</b>	<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>VALUE</b>	<b>UNIT</b>
$R_{th\ j-tp}$	thermal resistance from junction to tie-point	lead length 4 mm; see Fig.2	110	K/W

Voltage regulator diodes

1N4728A to 1N4749A

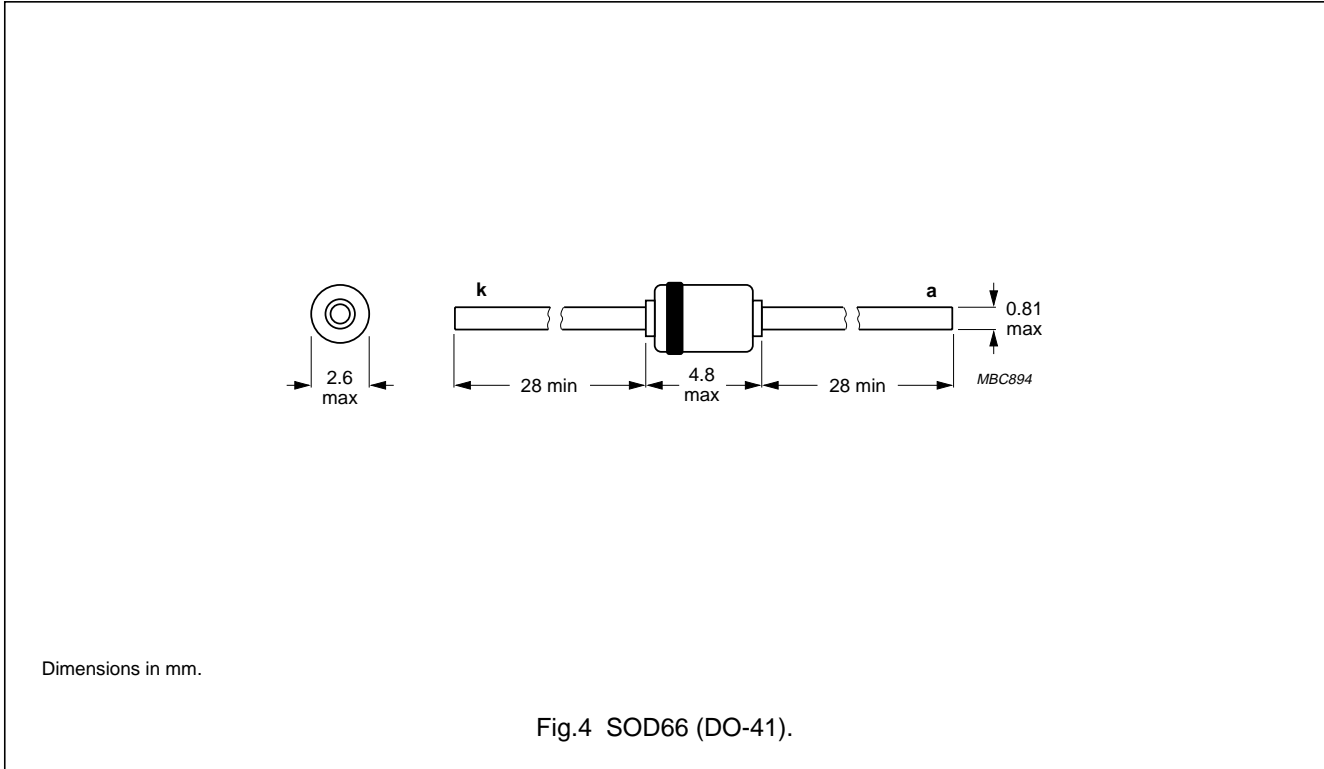
GRAPHICAL DATA



Voltage regulator diodes

1N4728A to 1N4749A

PACKAGE OUTLINE



DEFINITIONS

<b>Data sheet status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.