

# Voltage regulator diodes

# 1N5225B to 1N5267B

## FEATURES

- Total power dissipation: max. 500 mW
- Tolerance series:  $\pm 5\%$
- Working voltage range: nom. 3.0 to 75 V
- Non-repetitive peak reverse power dissipation: max. 40 W.

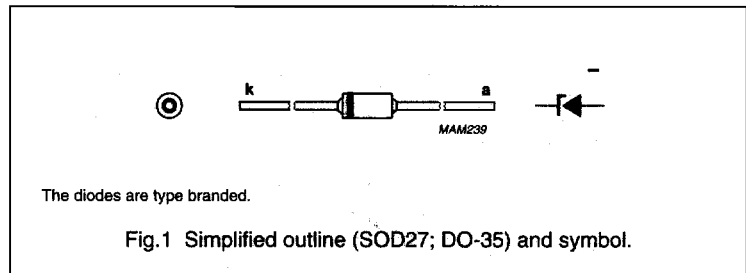
## APPLICATIONS

- Low-power voltage stabilizers or voltage references.

## DESCRIPTION

Low-power voltage regulator diodes in hermetically sealed leaded glass SOD27 (DO-35) packages.

The series consists of 43 types with nominal working voltages from 3.0 to 75 V.



## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_F$	continuous forward current		–	250	mA
$I_{ZSM}$	non-repetitive peak reverse current	$t_p = 100 \mu s$ ; square wave; $T_j = 25^\circ C$ prior to surge	see Table "Per type"		
$P_{tot}$	total power dissipation	$T_{amb} = 50^\circ C$ ; lead length max.; note 1	–	400	mW
		Lead length 8 mm; note 2	–	500	mW
$P_{ZSM}$	non-repetitive peak reverse power dissipation	$t_p = 100 \mu s$ ; square wave; $T_j = 25^\circ C$ prior to surge; see Fig.3	–	40	W
		$t_p = 8.3 ms$ ; square wave; $T_j \leq 55^\circ C$ prior to surge	–	10	W
$T_{stg}$	storage temperature		–65	+200	$^\circ C$
$T_j$	junction temperature		–65	+200	$^\circ C$

## Notes

1. Device mounted on a printed circuit-board without metallization pad.
2. Tie-point temperature  $\leq 75^\circ C$ .

## ELECTRICAL CHARACTERISTICS

Table 1

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$V_F$	forward voltage	$I_F = 200 mA$ ; see Fig.4	1.1	V

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Per type

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

TYPE No.	WORKING VOLTAGE $V_Z$ (V) <sup>(1)</sup> at $I_{Ztest}$		DIFFERENTIAL RESISTANCE $r_{diff}$ ( $\Omega$ ) at $I_{Ztest}$		TEMP. COEFF. $S_Z$ (%/K) at $I_Z$ <sup>(2)</sup>		TEST CURRENT $I_{Ztest}$ (mA)		DIODE CAP. $C_d$ (pF) at $f = 1\text{ MHz}$ ; at $V_R = 0\text{ V}$		REVERSE CURRENT at REVERSE VOLTAGE		NON-REPETITIVE PEAK REVERSE CURRENT $I_{ZSM}$ (A) $t_p = 100\text{ }\mu\text{s}$ ; $T_{amb} = 25\text{ }^\circ\text{C}$	
	NOM.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.
1N5225B	3.0	1600			-0.075	20	450	50	1.0	6.0				
1N5226B	3.3	1600			-0.070	20	450	25	1.0	6.0				
1N5227B	3.6	1700			-0.065	20	450	15	1.0	6.0				
1N5228B	3.9	1900			-0.060	20	450	10	1.0	6.0				
1N5229B	4.3	2000			$\pm 0.055$	20	450	5	1.0	6.0				
1N5230B	4.7	1900			$\pm 0.030$	20	450	5	1.5	6.0				
1N5231B	5.1	1600			$\pm 0.030$	20	300	5	2.0	6.0				
1N5232B	5.6	1600			+0.038	20	300	5	3.0	6.0				
1N5233B	6.0	1600			+0.038	20	300	5	3.5	6.0				
1N5234B	6.2	1000			+0.045	20	200	5	4.0	6.0				
1N5235B	6.8	750			+0.050	20	200	3	5.0	6.0				
1N5236B	7.5	500			+0.058	20	150	3	6.0	4.0				
1N5237B	8.2	500			+0.062	20	150	3	6.5	4.0				
1N5238B	8.7	600			+0.065	20	150	3	6.5	3.5				
1N5239B	9.1	600			+0.068	20	150	3	7.0	3.0				
1N5240B	10	600			+0.075	20	90	3	8.0	3.0				
1N5241B	11	600			+0.076	20	85	2	8.4	2.5				
1N5242B	12	600			+0.077	20	85	1	9.1	2.5				
1N5243B	13	600			+0.079	9.5	80	0.5	9.9	2.5				
1N5244B	14	600			+0.082	9.0	80	0.1	10.0	2.0				
1N5245B	15	600			+0.082	8.5	75	0.1	11.0	2.0				
1N5246B	16	600			+0.083	7.8	75	0.1	12.0	1.5				
1N5247B	17	600			+0.084	7.4	75	0.1	13.0	1.5				
1N5248B	18	600			+0.085	7.0	70	0.1	14.0	1.5				
1N5249B	19	600			+0.086	6.6	70	0.1	14.0	1.5				
1N5250B	20	600			+0.086	6.2	60	0.1	15.0	1.5				

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TYPE No.	WORKING VOLTAGE $V_Z$ (V) <sup>(1)</sup> at $I_{Ztest}$		DIFFERENTIAL RESISTANCE $r_{dir}$ ( $\Omega$ ) at $I_{Ztest}$		TEMP. COEFF. $S_Z$ (%/K) at $I_Z^{(2)}$		TEST CURRENT $I_{Ztest}$ (mA)		DIODE CAP. $C_d$ (pF) at $f = 1$ MHz; at $V_R = 0$ V		REVERSE CURRENT at REVERSE VOLTAGE		NON-REPETITIVE PEAK REVERSE CURRENT $I_{ZSM}$ (A) $t_p = 100 \mu s$ ; $T_{amb} = 25$ °C	
	NOM.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	MAX.	$V_R$ (V)		MAX.	
											$I_R$ ( $\mu A$ )	MAX.		
1N5251B	22	600	+0.087	5.6	60	0.1	17.0	1.25						
1N5252B	24	600	+0.088	5.2	55	0.1	18.0	1.25						
1N5253B	25	600	+0.089	5.0	55	0.1	19.0	1.25						
1N5254B	27	600	+0.090	4.6	50	0.1	21.0	1.0						
1N5255B	28	600	+0.091	4.5	50	0.1	21.0	1.0						
1N5256B	30	600	+0.091	4.2	50	0.1	23.0	1.0						
1N5257B	33	700	+0.092	3.8	45	0.1	25.0	0.9						
1N5258B	36	700	+0.093	3.4	45	0.1	27.0	0.8						
1N5259B	39	800	+0.094	3.2	45	0.1	30.0	0.7						
1N5260B	43	900	+0.095	3.0	40	0.1	33.0	0.6						
1N5261B	47	1000	+0.095	2.7	40	0.1	36.0	0.5						
1N5262B	51	1100	+0.096	2.5	40	0.1	39.0	0.4						
1N5263B	56	1300	+0.096	2.2	40	0.1	43.0	0.3						
1N5264B	60	1400	+0.097	2.1	40	0.1	46.0	0.3						
1N5265B	62	1400	+0.097	2.0	35	0.1	47.0	0.3						
1N5266B	68	1600	+0.097	1.8	35	0.1	52.0	0.25						
1N5267B	75	1700	+0.098	1.7	35	0.1	56.0	0.2						

## 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.
- For types 1N5225B to 1N5242B the  $I_Z$  current is 7.5 mA; for 1N5243B and higher  $I_Z = I_{Ztest}$ .  $S_Z$  values valid between 25 °C and 125 °C.

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1N5225B to 1N5267B

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point	lead length 10 mm	300	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	lead length max.; see Fig.2 and note 1	380	K/W

**Note**

1. Device mounted on a printed circuit-board without metallization pad.

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GRAPHICAL DATA

