

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: BYD17J,115
Manufacturer: NXP USA Inc.
Package: SOD-87
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/nxp-usa-inc/byd17j-115.html>

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Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

DATA SHEET



BYD17 series General purpose controlled avalanche rectifiers

Product specification
Supersedes data of 1999 Nov 11

2001 Oct 26

General purpose
controlled avalanche rectifiers

BYD17 series

FEATURES

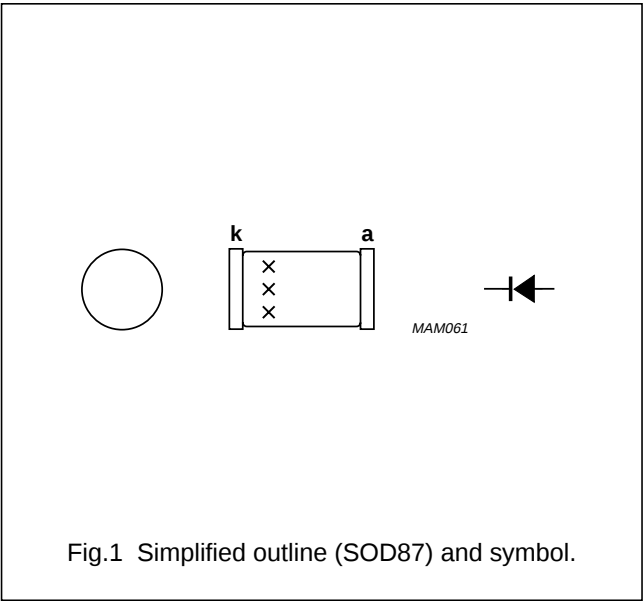
- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Guaranteed avalanche energy absorption capability
- Shipped in 8 mm embossed tape
- Smallest surface mount rectifier outline.

DESCRIPTION

Cavity free cylindrical glass package through Implotec™(1) technology.

This package is hermetically sealed and fatigue free as coefficients of expansion of all used parts are matched.

(1) Implotec is a trademark of Philips.



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage				
	BYD17D		–	200	V
	BYD17G		–	400	V
	BYD17J		–	600	V
	BYD17K		–	800	V
	BYD17M		–	1000	V
V _{RWM}	crest working reverse voltage				
	BYD17D		–	200	V
	BYD17G		–	400	V
	BYD17J		–	600	V
	BYD17K		–	800	V
	BYD17M		–	1000	V
V _R	continuous reverse voltage				
	BYD17D		–	200	V
	BYD17G		–	400	V
	BYD17J		–	600	V
	BYD17K		–	800	V
	BYD17M		–	1000	V

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SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{F(AV)}$	average forward current	$T_{tp} = 105\text{ }^{\circ}\text{C}$; averaged over any 20 ms period; see Figs 2 and 4	–	1.5	A
		$T_{amb} = 65\text{ }^{\circ}\text{C}$; PCB mounting (see Fig.9); averaged over any 20 ms period; see Figs 3 and 4	–	0.6	A
I_{FSM}	non-repetitive peak forward current	$t = 10\text{ ms}$ half sinewave; $T_j = T_{j\text{ max}}$ prior to surge; $V_R = V_{RRMmax}$	–	20	A
E_{RSM}	non-repetitive peak reverse avalanche energy	$L = 120\text{ mH}$; $T_j = T_{j\text{ max}}$ prior to surge; inductive load switched off	–	7	mJ
T_{stg}	storage temperature		–65	+175	$^{\circ}\text{C}$
T_j	junction temperature	see Fig.5	–65	+175	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	forward voltage	$I_F = 1\text{ A}$; $T_j = T_{j\text{ max}}$; see Fig.6	–	–	0.93	V
		$I_F = 1\text{ A}$; see Fig.6	–	–	1.05	V
$V_{(BR)R}$	reverse avalanche breakdown voltage	$I_R = 0.1\text{ mA}$				
			225	–	–	V
			450	–	–	V
			650	–	–	V
			900	–	–	V
			1100	–	–	V
I_R	reverse current	$V_R = V_{RRMmax}$; see Fig.7	–	–	1	μA
		$V_R = V_{RRMmax}$; $T_j = 165\text{ }^{\circ}\text{C}$; see Fig.7	–	–	100	μA
t_{rr}	reverse recovery time	when switched from $I_F = 0.5\text{ A}$ to $I_R = 1\text{ A}$; measured at $I_R = 0.25\text{ A}$; see Fig.10	–	3	–	μs
C_d	diode capacitance	$V_R = 0\text{ V}$; $f = 1\text{ MHz}$; see Fig.8	–	21	–	pF

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\text{ j-tp}}$	thermal resistance from junction to tie-point		30	K/W
$R_{th\text{ j-a}}$	thermal resistance from junction to ambient	note 1	150	K/W

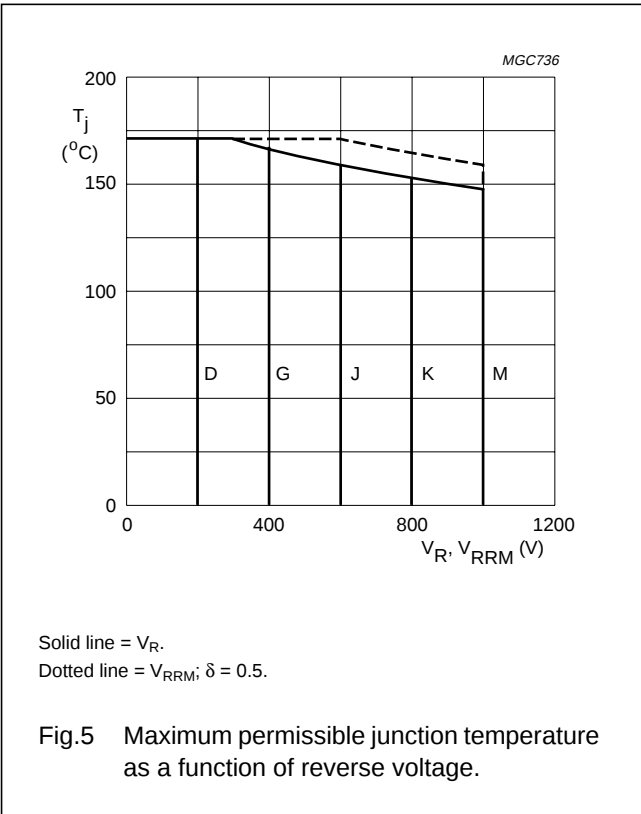
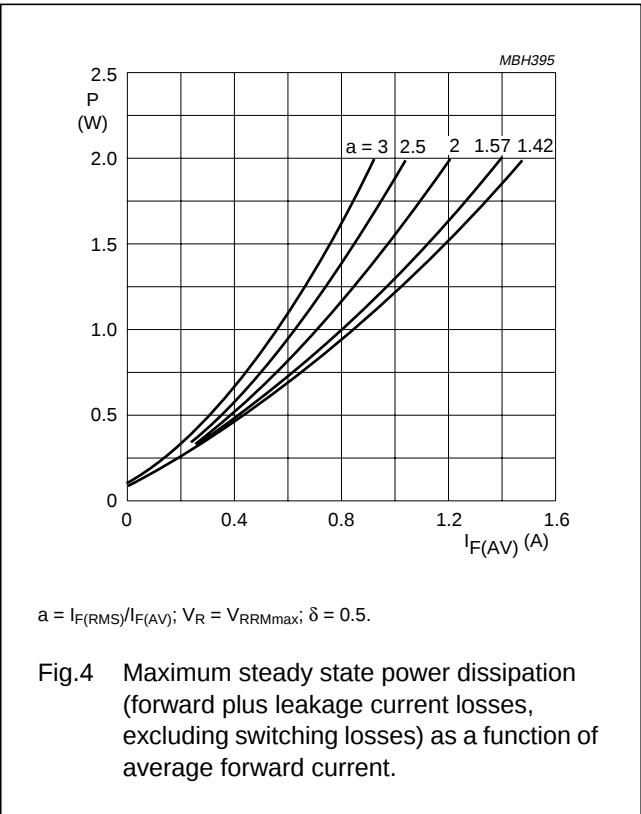
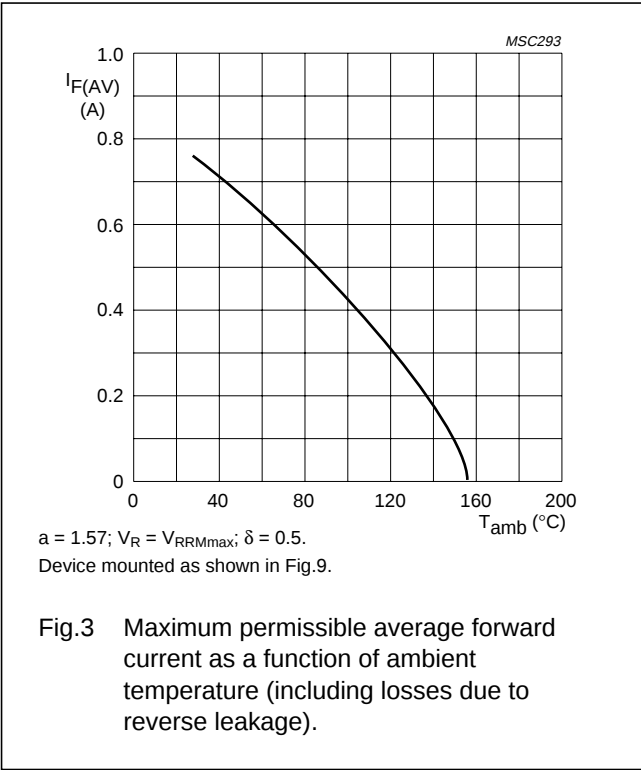
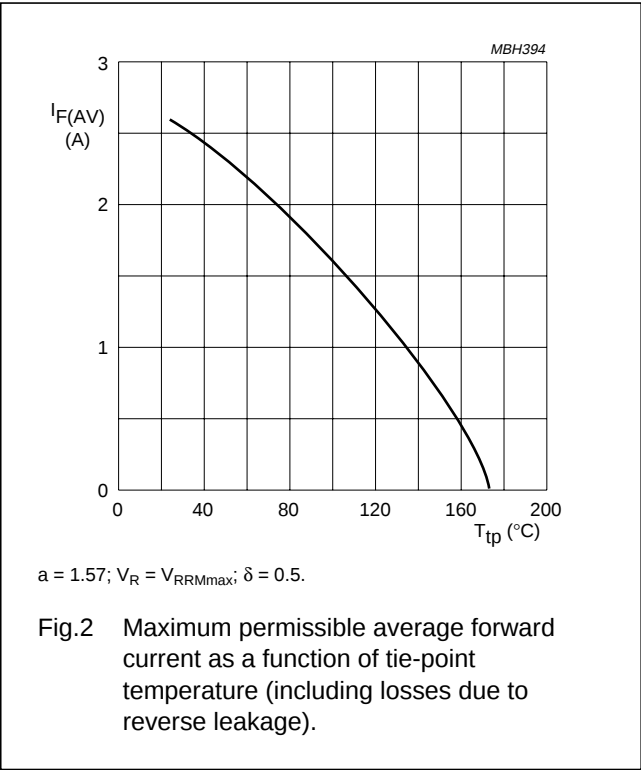
Note

1. Device mounted on epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper $\geq 40\text{ }\mu\text{m}$, see Fig.9.
For more information please refer to the “General Part of associated Handbook”.

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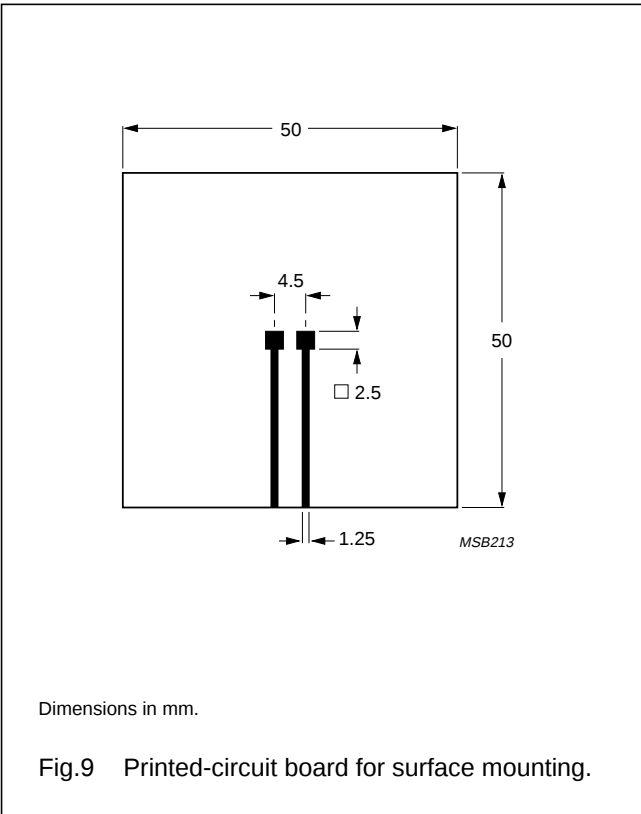
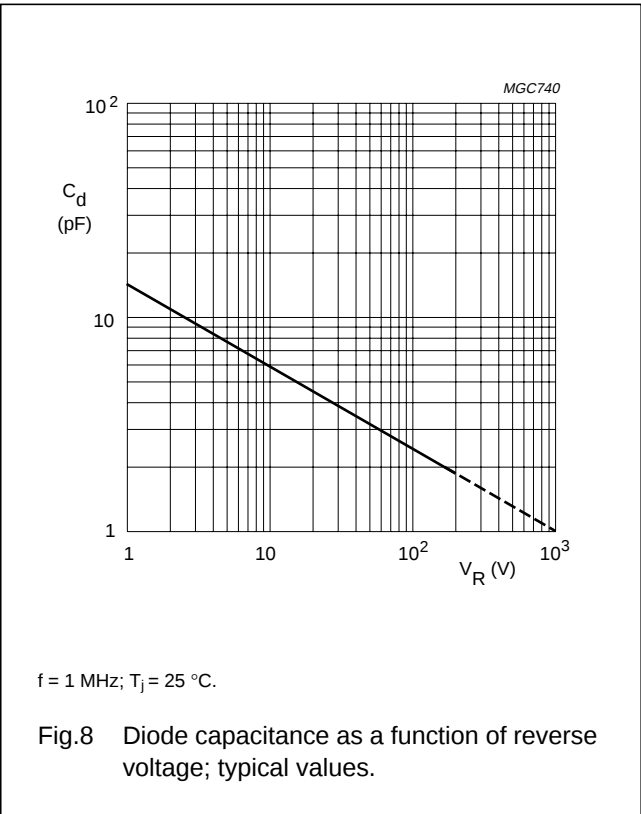
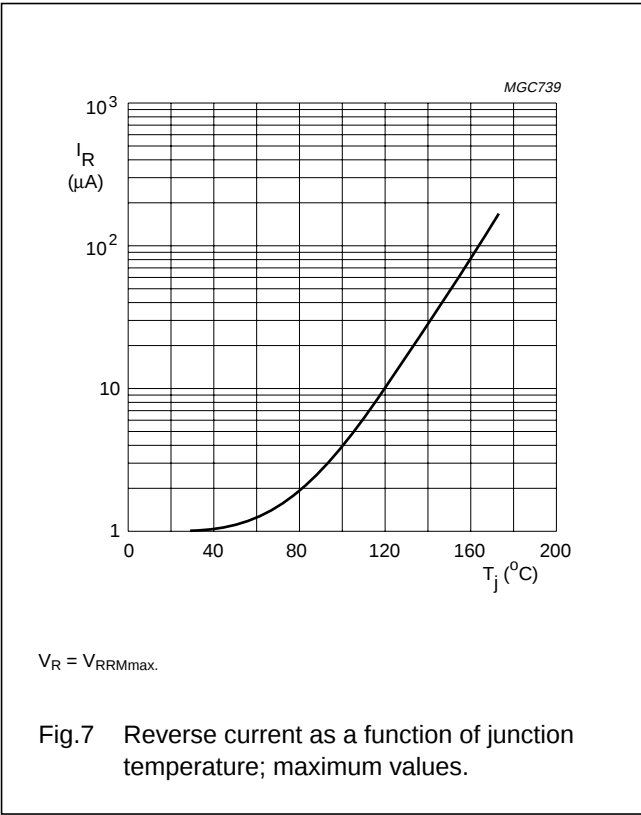
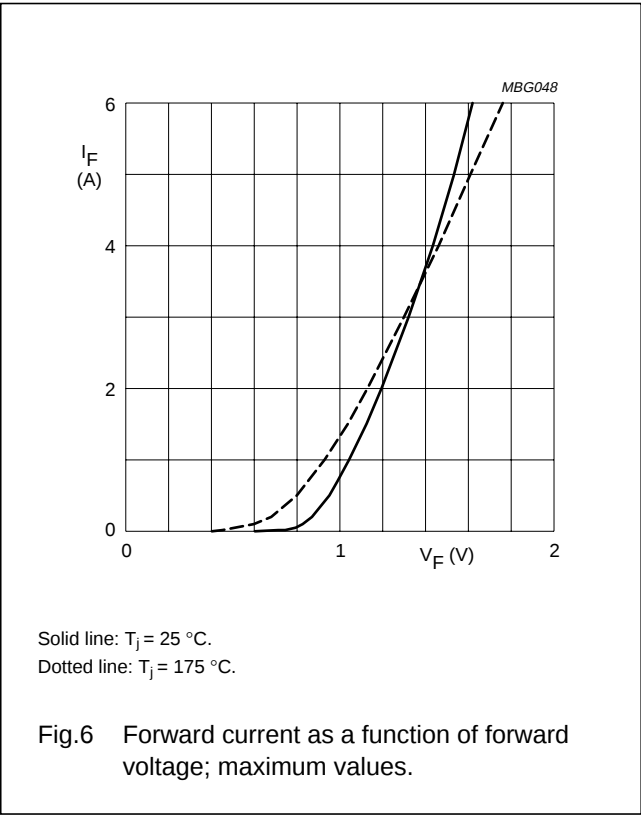
BYD17 series

GRAPHICAL DATA



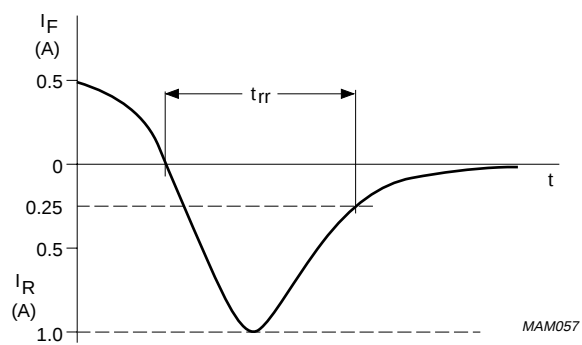
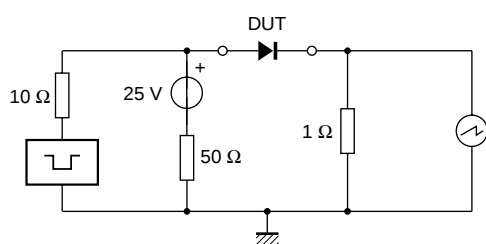
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Input impedance oscilloscope: $1\text{ M}\Omega$, 22 pF ; $t_r \leq 7\text{ ns}$.
 Source impedance: $50\text{ }\Omega$; $t_r \leq 15\text{ ns}$.

Fig.10 Test circuit and reverse recovery time waveform and definition.

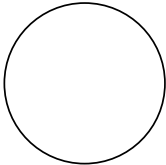
General purpose
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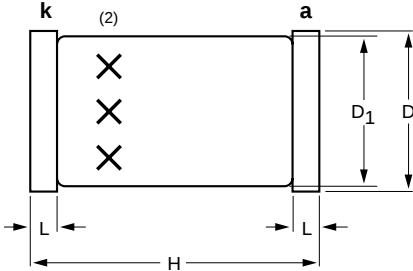
BYD17 series

PACKAGE OUTLINE

Hermetically sealed glass surface mounted package;
Implotec™(1) technology; 2 connectors

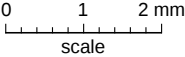
SOD87





DIMENSIONS (mm are the original dimensions)

UNIT	D	D1	H	L
mm	2.1 2.0	2.0 1.8	3.7 3.3	0.3



Notes

1. Implotec is a trademark of Philips.
2. The marking indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD87	100H03					99-03-31 99-06-04

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DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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Contact information

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