



IMPORTANT NOTICE

10 December 2015

1. Global joint venture starts operations as WeEn Semiconductors

Dear customer,

As from November 9th, 2015 NXP Semiconductors N.V. and Beijing JianGuang Asset Management Co. Ltd established Bipolar Power joint venture (JV), **WeEn Semiconductors**, which will be used in future Bipolar Power documents together with new contact details.

In this document where the previous NXP references remain, please use the new links as shown below.

WWW - For www.nxp.com use www.ween-semi.com

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If you have any questions related to this document, please contact our nearest sales office via e-mail or phone (details via salesaddresses@ween-semi.com).

Thank you for your cooperation and understanding,

WeEn Semiconductors



DATA SHEET

BYV29F, BYV29X series Rectifier diodes ultrafast

Product specification

February 1999



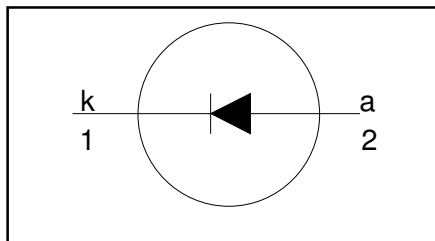
Rectifier diodes ultrafast

BYV29F, BYV29X series

FEATURES

- Low forward volt drop
- Fast switching
- Soft recovery characteristic
- High thermal cycling performance
- Isolated mounting tab

SYMBOL



QUICK REFERENCE DATA

$$V_R = 300 \text{ V} / 400 \text{ V} / 500 \text{ V}$$

$$V_F \leq 1.03 \text{ V}$$

$$I_{F(AV)} = 9 \text{ A}$$

$$t_{rr} \leq 60 \text{ ns}$$

GENERAL DESCRIPTION

Ultra-fast epitaxial rectifier diodes intended for use in switched mode power supply output rectification, electronic lighting ballasts and high frequency switching circuits in general.

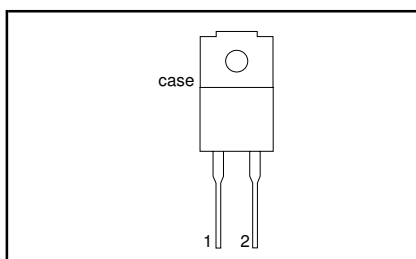
The BYV29F series is supplied in the SOD100 package.

The BYV29X series is supplied in the SOD113 package.

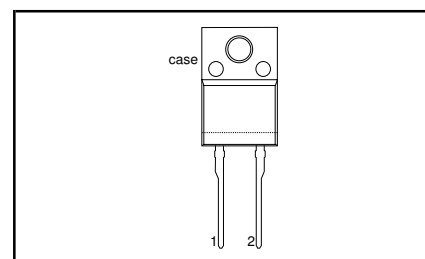
PINNING

PIN	DESCRIPTION
1	cathode (k)
2	anode (a)
tab	isolated

SOD100



SOD113



LIMITING VALUES

Limiting values in accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
V_{RRM}	Peak repetitive reverse voltage	BYV29F/BYV29X $T_{hs} \leq 138^\circ\text{C}^1$ square wave; $\delta = 0.5$; $T_{hs} \leq 90^\circ\text{C}$ $t = 10 \text{ ms}$ $t = 8.3 \text{ ms}$ sinusoidal; with reappplied $V_{RRM(max)}$	-	-300	-400	-500	V
V_R	Continuous reverse voltage		-	300	400	500	V
$I_{F(AV)}$	Average forward current ²		-	9			A
I_{FSM}	Non-repetitive peak forward current		-	100			A
I_{FSM}	Non-repetitive peak forward current		-	110			A
T_{stg}	Storage temperature		-40	150			$^\circ\text{C}$
T_j	Operating junction temperature		-	150			$^\circ\text{C}$

¹ T_{hs} de-rating for thermal stability.

² Neglecting switching and reverse current losses

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BYV29F, BYV29X series

ISOLATION LIMITING VALUE & CHARACTERISTIC

$T_{hs} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{isol}	Peak isolation voltage from all terminals to external heatsink	SOD100 package; R.H. $\leq 65\%$; clean and dustfree	-	-	1500	V
V_{isol}	R.M.S. isolation voltage from all terminals to external heatsink	SOD113 package; $f = 50\text{-}60\text{ Hz}$; sinusoidal waveform; R.H. $\leq 65\%$; clean and dustfree	-	-	2500	V
C_{isol}	Capacitance from pin 2 to external heatsink	$f = 1\text{ MHz}$	-	10	-	pF

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-hs}$	Thermal resistance junction to heatsink	with heatsink compound	-	-	5.5	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	without heatsink compound in free air.	-	-	7.2	K/W
			-	55	-	K/W

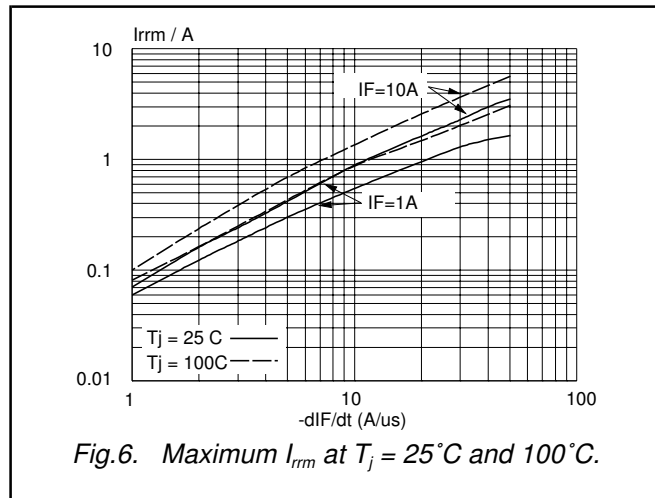
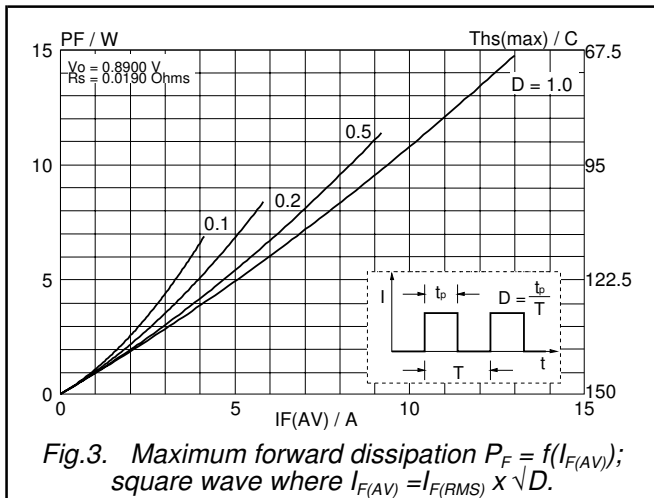
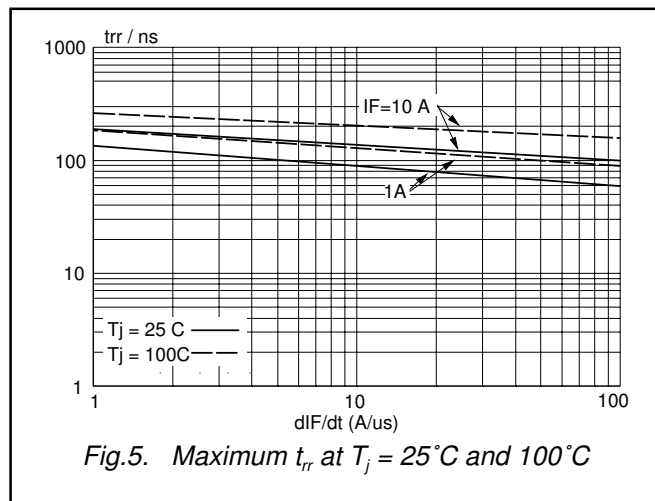
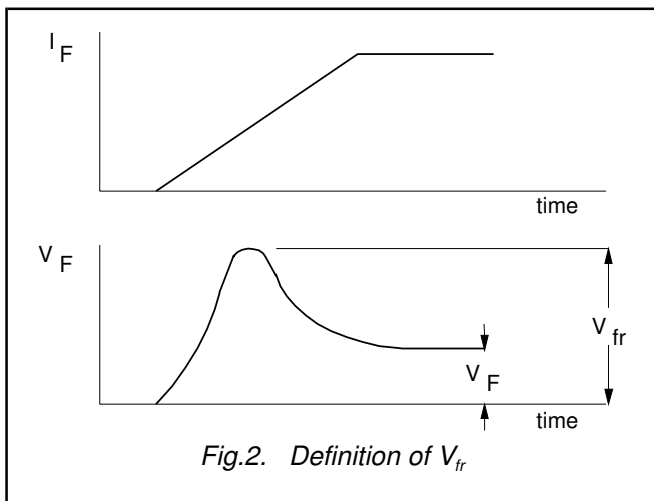
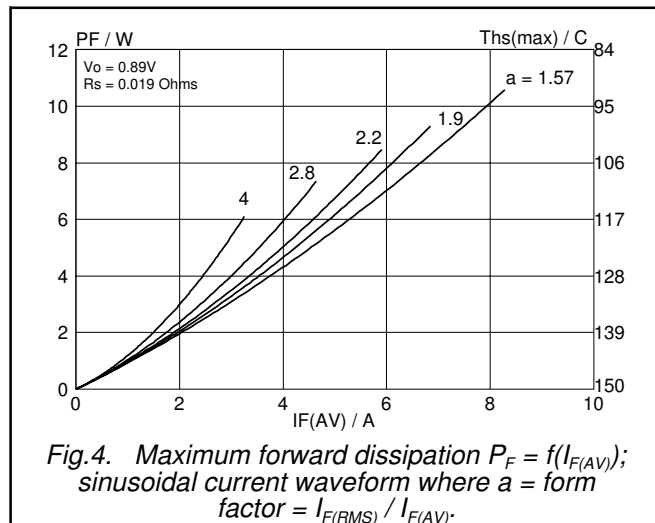
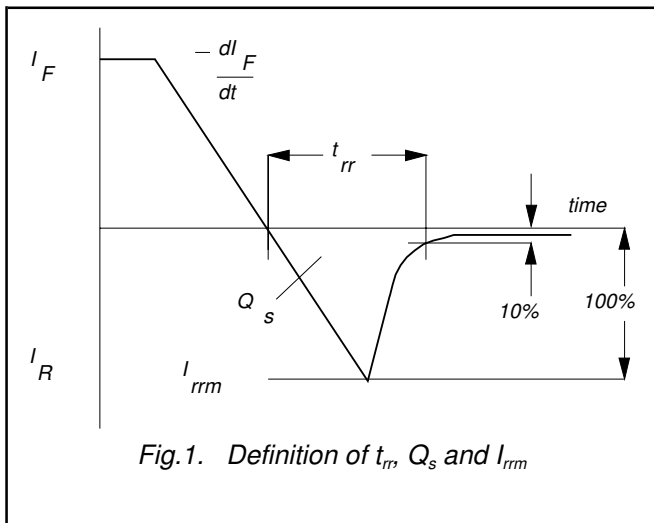
ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	Forward voltage	$I_F = 8\text{ A}$; $T_j = 150\text{ }^{\circ}\text{C}$	-	0.90	1.03	V
		$I_F = 8\text{ A}$	-	1.05	1.25	V
		$I_F = 20\text{ A}$	-	1.20	1.40	V
I_R	Reverse current	$V_R = V_{RRM}$	-	2.0	50	μA
		$V_R = V_{RRM}$; $T_j = 100\text{ }^{\circ}\text{C}$	-	0.1	0.35	mA
Q_s	Reverse recovery charge	$I_F = 2\text{ A}$ to $V_R \geq 30\text{ V}$; $dI_F/dt = 20\text{ A}/\mu\text{s}$	-	40	60	nC
t_{rr}	Reverse recovery time	$I_F = 1\text{ A}$ to $V_R \geq 30\text{ V}$; $dI_F/dt = 100\text{ A}/\mu\text{s}$	-	50	60	ns
I_{rrm}	Peak reverse recovery current	$I_F = 10\text{ A}$ to $V_R \geq 30\text{ V}$; $dI_F/dt = 50\text{ A}/\mu\text{s}$; $T_j = 100\text{ }^{\circ}\text{C}$	-	4.0	5.5	A
V_{fr}	Forward recovery voltage	$I_F = 10\text{ A}$; $dI_F/dt = 10\text{ A}/\mu\text{s}$	-	2.5	-	V

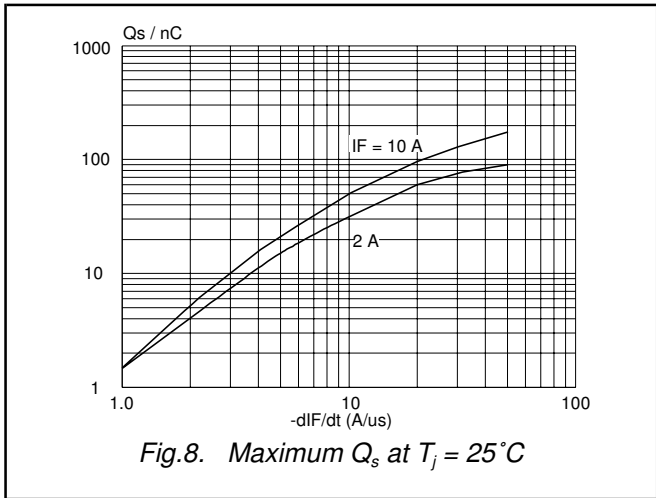
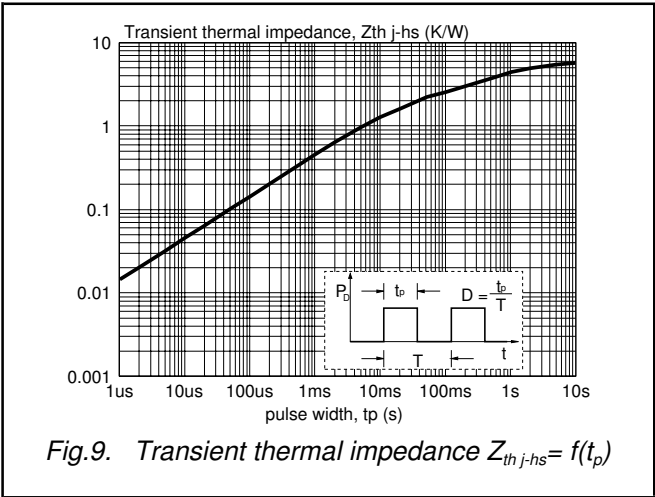
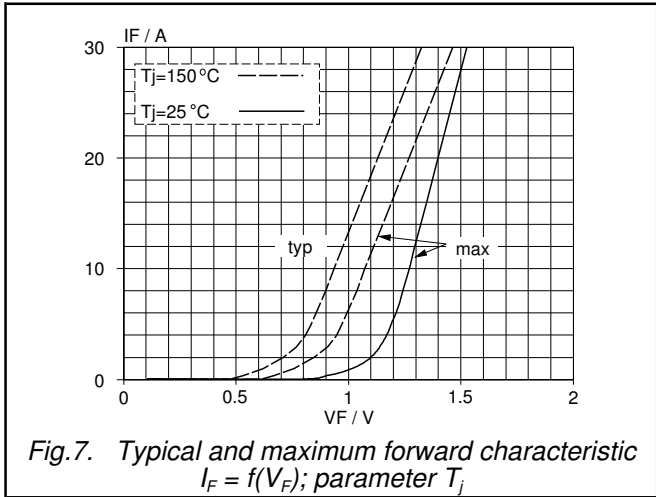
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BYV29F, BYV29X series



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ultrafast

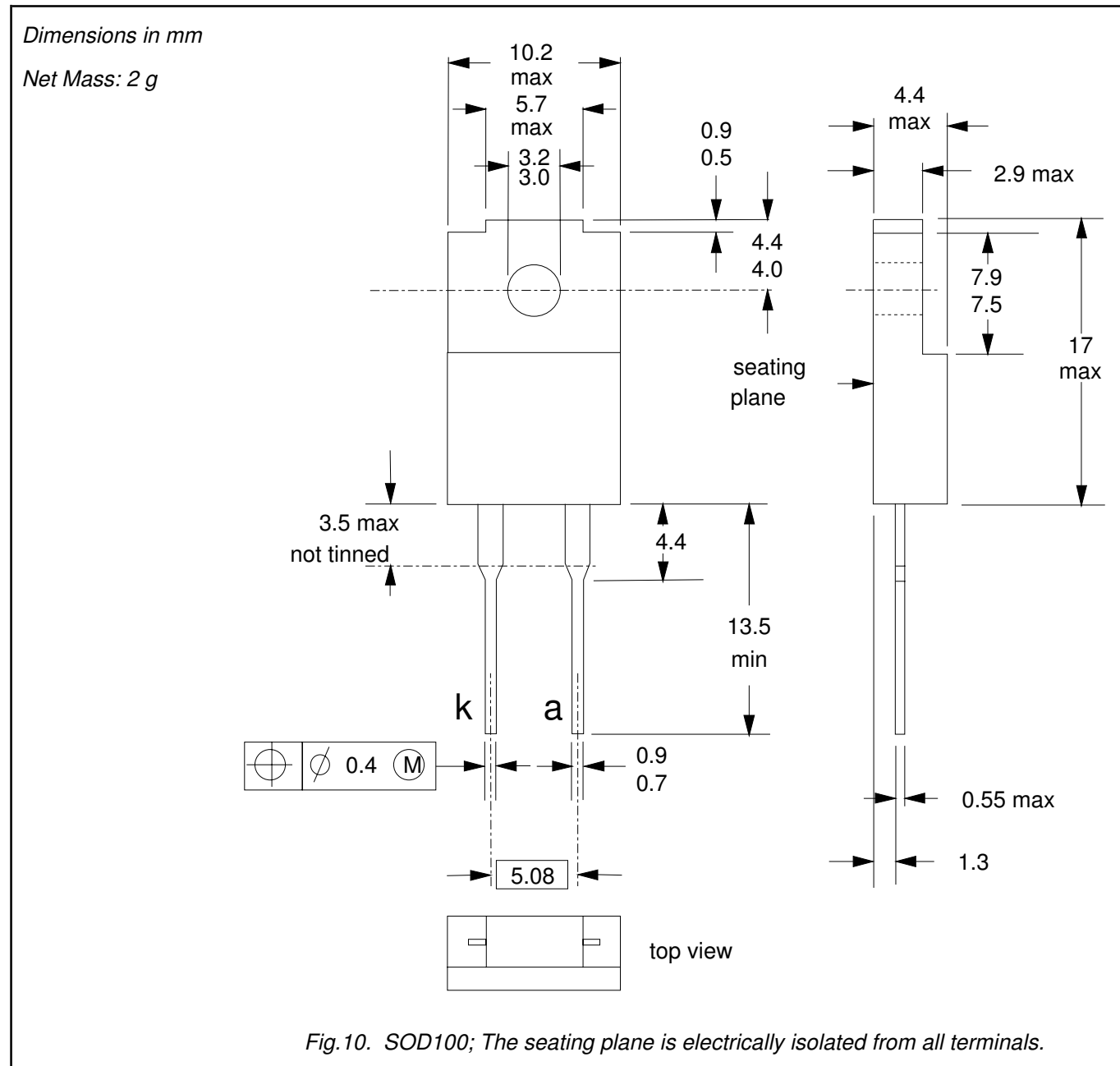
BYV29F, BYV29X series



Rectifier diodes
ultrafast

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MECHANICAL DATA



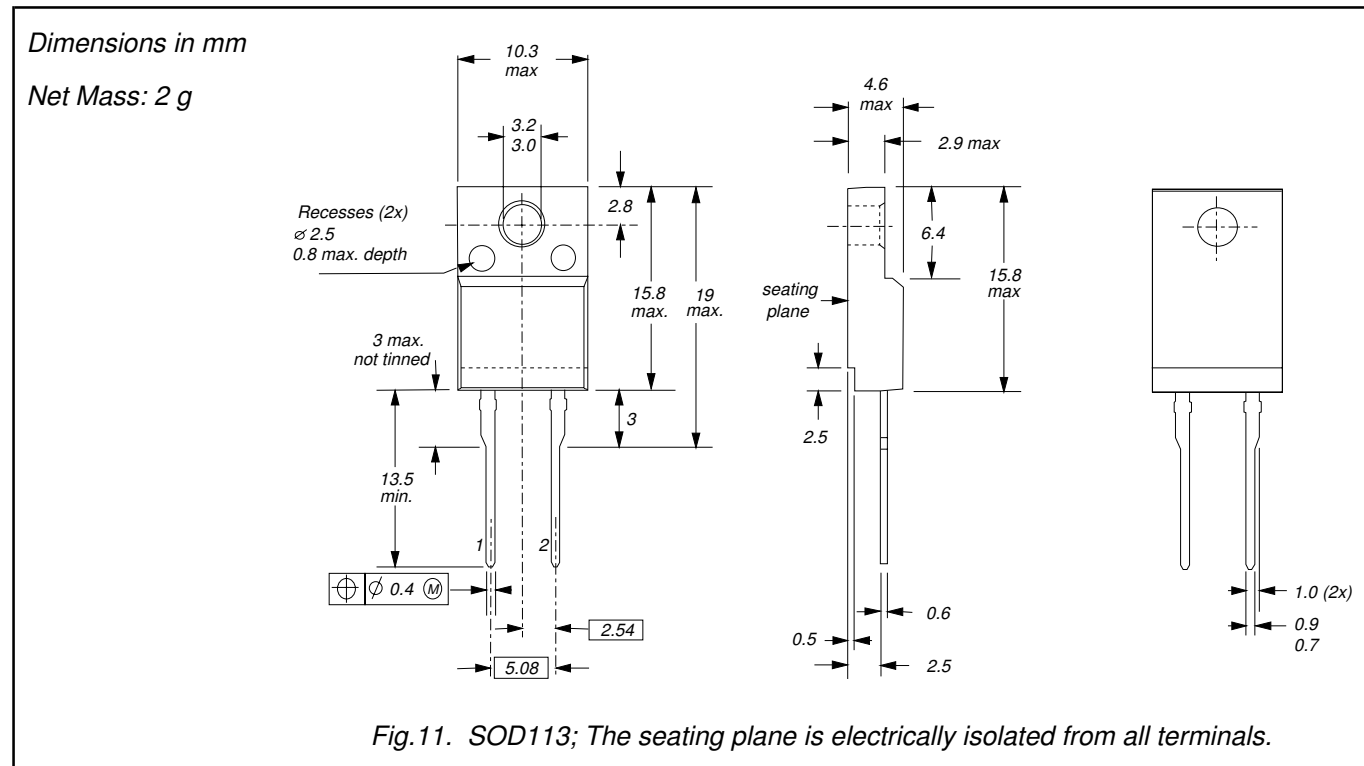
Notes

1. Refer to mounting instructions for F-pack envelopes.
2. Epoxy meets UL94 V0 at 1/8".

Rectifier diodes
ultrafast

BYV29F, BYV29X series

MECHANICAL DATA

**Notes**

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Legal information

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

Notes

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Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the content, except for the legal definitions and disclaimers.

Contact information

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