

# Rectifier diodes schottky barrier

# BYV133 series

## GENERAL DESCRIPTION

Dual, low leakage, platinum barrier, schottky rectifier diodes in a plastic envelope featuring low forward voltage drop and absence of stored charge. These devices can withstand reverse voltage transients and have guaranteed reverse surge capability. The devices are intended for use in switched mode power supplies and high frequency circuits in general where low conduction and zero switching losses are important.

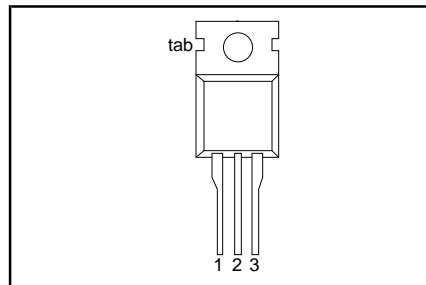
## QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	MAX.	MAX.	UNIT
$V_{RRM}$	<b>BYV133-</b> Repetitive peak reverse voltage Forward voltage Output current (both diodes conducting)	<b>35</b>	<b>40</b>	<b>45</b>	V
$V_F$		35	40	45	V
$I_{O(AV)}$		0.60	0.60	0.60	A
		20	20	20	

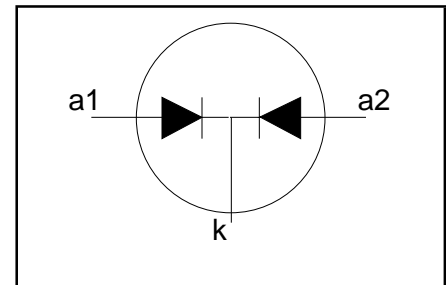
## PINNING - TO220AB

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

## PIN CONFIGURATION



## SYMBOL



## LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
				-35	-40	-45	
$V_{RRM}$	Repetitive peak reverse voltage		-	35	40	45	V
$V_{RWM}$	Crest working reverse voltage		-	35	40	45	V
$V_R$	Continuous reverse voltage	$T_{mb} \leq 145^\circ\text{C}$	-	35	40	45	V
$I_{O(AV)}$	Output current (both diodes conducting) <sup>1</sup>	square wave; $\delta = 0.5$ ;	-	20			A
		$T_{mb} \leq 122^\circ\text{C}$ sinusoidal; $a = 1.57$ ;	-	18			A
$I_{O(RMS)}$	RMS forward current	$T_{mb} \leq 123^\circ\text{C}$	-	28			A
$I_{FRM}$	Repetitive peak forward current per diode	$t = 25 \mu\text{s}$ ; $\delta = 0.5$ ;	-	20			A
		$T_{mb} \leq 122^\circ\text{C}$	-	20			A
$I_{FSM}$	Non-repetitive peak forward current per diode	$t = 10 \text{ ms}$	-	100			A
		$t = 8.3 \text{ ms}$ sinusoidal $T_j = 125^\circ\text{C}$ prior to surge; with reapplied	-	110			A
$I^2t$	$I^2t$ for fusing	$V_{RWM(max)}$ $t = 10 \text{ ms}$	-	50			A <sup>2</sup> s
$I_{RRM}$	Repetitive peak reverse current per diode.	$t_p = 2 \mu\text{s}$ ; $\delta = 0.001$	-	1			A
$I_{RSM}$	Non-repetitive peak reverse current per diode.	$t_p = 100 \mu\text{s}$	-	1			A
$T_{stg}$	Storage temperature		-65	175			$^\circ\text{C}$
$T_j$	Operating junction temperature		-	150			$^\circ\text{C}$

<sup>1</sup> For output currents in excess of 20A, connection should be made to the exposed metal mounting base.

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**BYV133 series****THERMAL RESISTANCES**

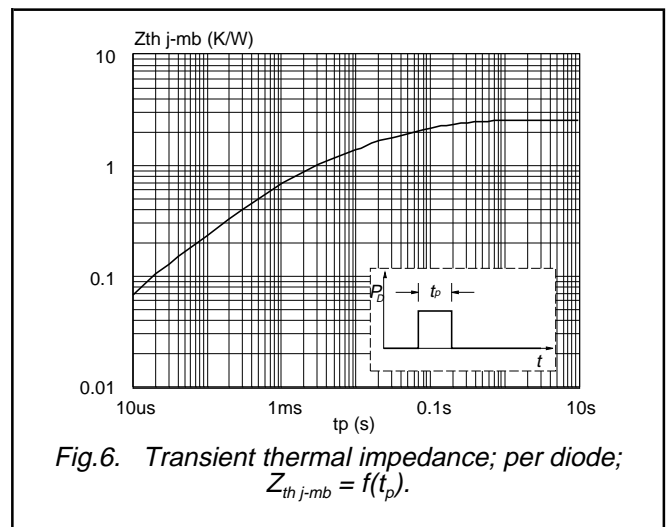
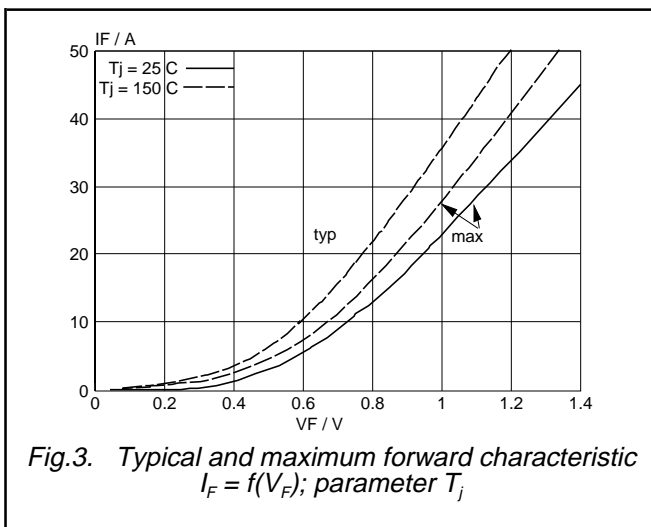
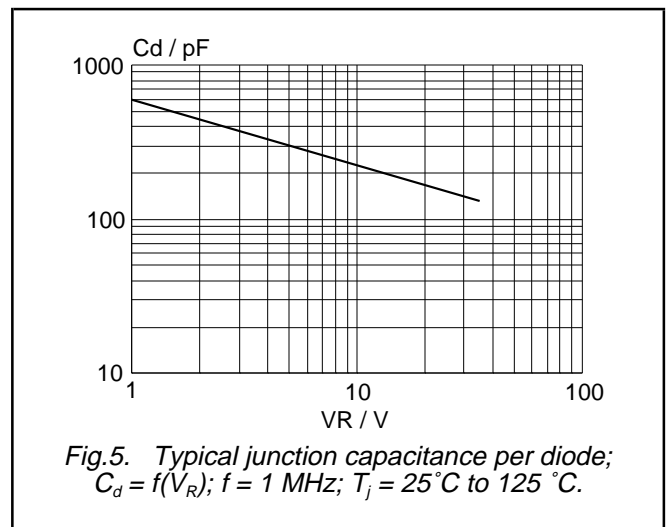
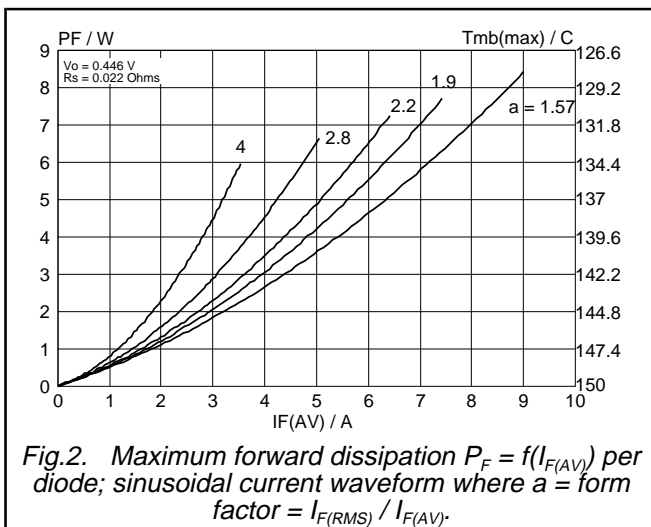
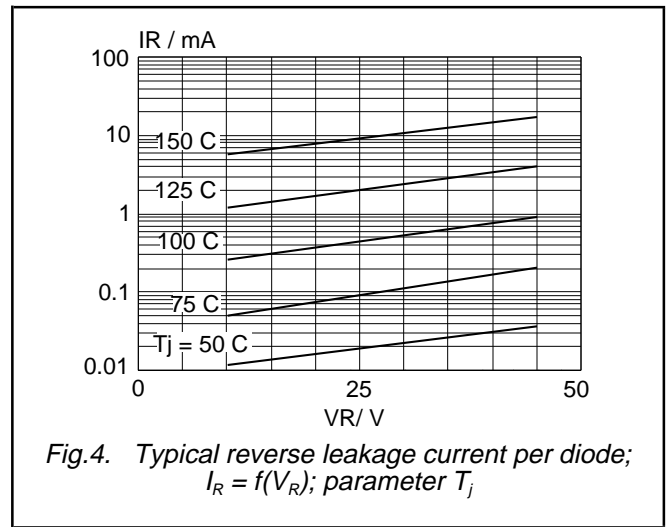
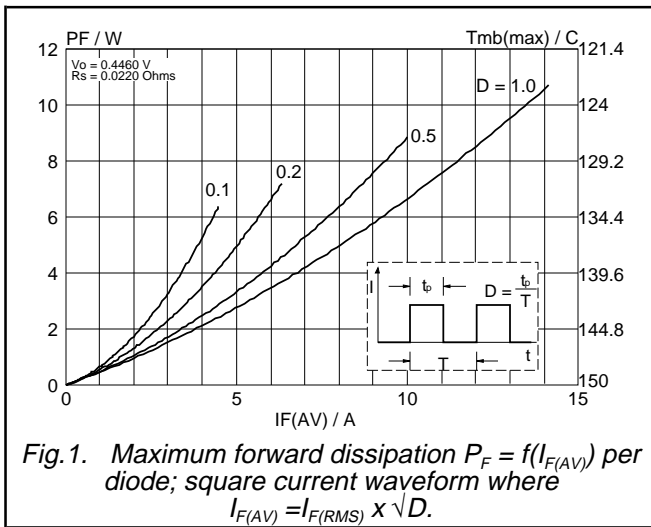
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base	per diode	-	-	2.6	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	both diodes in free air.	-	-	1.6	K/W
			-	60	-	K/W

**STATIC CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage (per diode)	$I_F = 7\text{ A}; T_j = 150\text{ °C}$	-	0.55	0.60	V
		$I_F = 20\text{ A}$	-	0.88	0.94	V
$I_R$	Reverse current (per diode)	$V_R = V_{RWM}$	-	50	100	$\mu\text{A}$
		$V_R = V_{RWM}; T_j = 125\text{ °C}$	-	4	15	mA
$C_d$	Junction capacitance (per diode)	$f = 1\text{ MHz}; V_R = 5\text{ V}; T_j = 25\text{ °C to }125\text{ °C}$	-	300	-	pF

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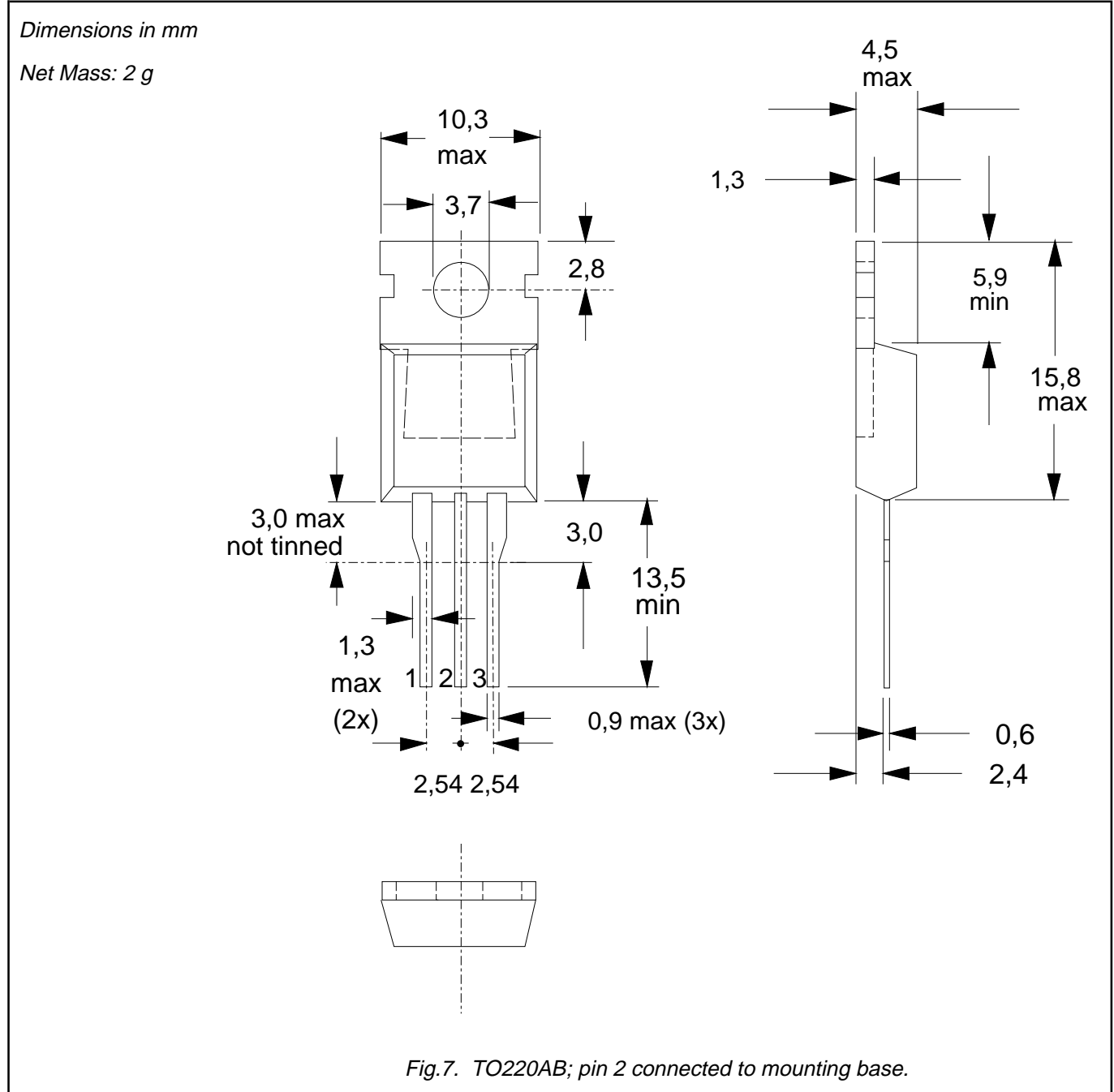
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**MECHANICAL DATA**



**Notes**

1. Accessories supplied on request: refer to mounting instructions for TO220 envelopes.
2. Epoxy meets UL94 V0 at 1/8".

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**BYV133 series****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 are given 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 this 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.	
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