



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



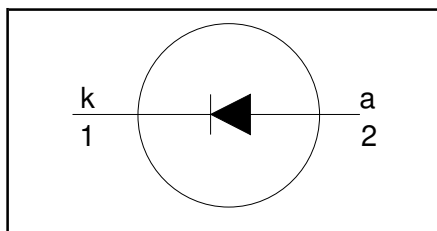
**Rectifier diodes  
fast, soft-recovery**

**BY229 series**

**FEATURES**

- Low forward volt drop
- Fast switching
- Soft recovery characteristic
- High thermal cycling performance
- Low thermal resistance

**SYMBOL**



**QUICK REFERENCE DATA**

$V_R = 200\text{ V} / 400\text{ V} / 600\text{ V} / 800\text{ V}$
$I_{F(AV)} = 8\text{ A}$
$I_{FSM} \leq 60\text{ A}$
$t_{rr} \leq 135\text{ ns}$

**GENERAL DESCRIPTION**

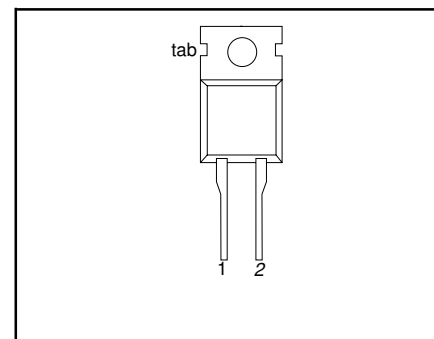
Glass-passivated double diffused rectifier diodes featuring low forward voltage drop, fast reverse recovery and soft recovery characteristic. The devices are intended for use in TV receivers, monitors and switched mode power supplies.

The BY229 series is supplied in the conventional leaded SOD59 (TO220AC) package.

**PINNING**

PIN	DESCRIPTION
1	cathode
2	anode
tab	cathode

**SOD59 (TO220AC)**



**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.				UNIT
				-200	-400	-600	-800	
$V_{RSM}$	Peak non-repetitive reverse voltage	<b>BY229</b>	-	200	400	600	800	V
$V_{RRM}$	Peak repetitive reverse voltage		-	200	400	600	800	V
$V_{RWM}$	Crest working reverse voltage		-	150	300	500	600	V
$V_R$	Continuous reverse voltage		-	150	300	500	600	V
$I_{F(AV)}$	Average forward current <sup>1</sup>	square wave; $\delta = 0.5$ ; $T_{mb} \leq 122\text{ }^\circ\text{C}$	-	8				A
		sinusoidal; $a = 1.57$ ; $T_{mb} \leq 125\text{ }^\circ\text{C}$	-	7				A
$I_{F(RMS)}$	RMS forward current		-	11				A
$I_{FRM}$	Repetitive peak forward current	$t = 25\text{ }\mu\text{s}$ ; $\delta = 0.5$ ; $T_{mb} \leq 122\text{ }^\circ\text{C}$	-	16				A
$I_{FSM}$	Non-repetitive peak forward current.	$t = 10\text{ ms}$ $t = 8.3\text{ ms}$ sinusoidal; $T_j = 150\text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RWM(max)}$	-	60				A
		$t = 10\text{ ms}$	-	66				A
$I^2t$	$I^2t$ for fusing		-	18				A <sup>2</sup> s
$T_{stg}$	Storage temperature		-40	150				$^\circ\text{C}$
$T_j$	Operating junction temperature		-	150				$^\circ\text{C}$

<sup>1</sup> Neglecting switching and reverse current losses.

---

**Rectifier diodes  
fast, soft-recovery**


---

BY229 series

**THERMAL RESISTANCES**

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base	in free air.	-	-	2.0	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient		-	60	-	K/W

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

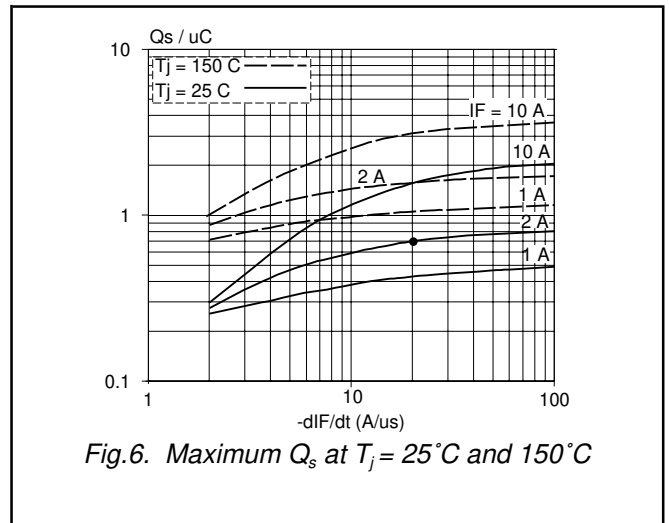
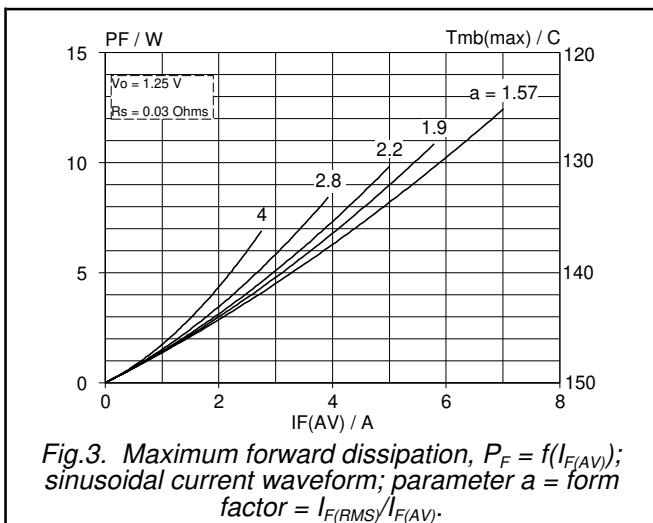
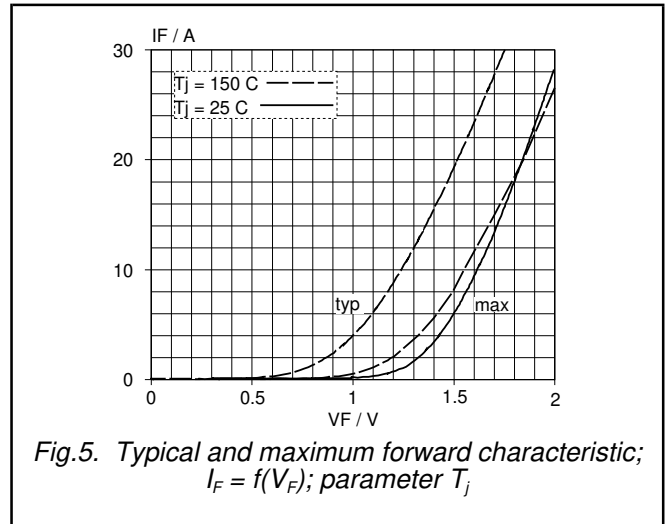
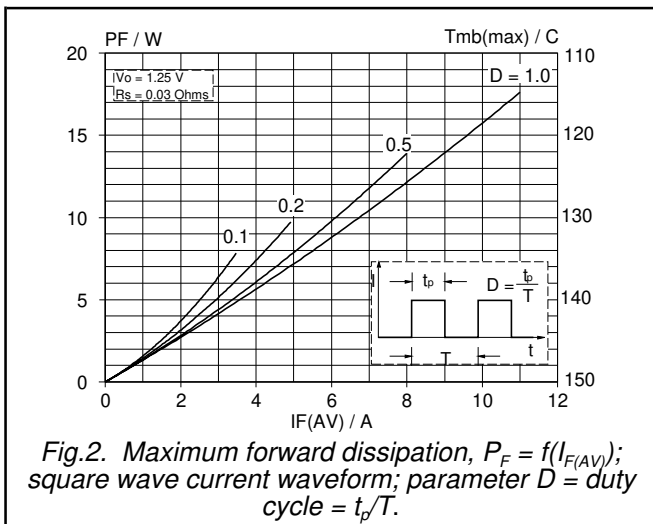
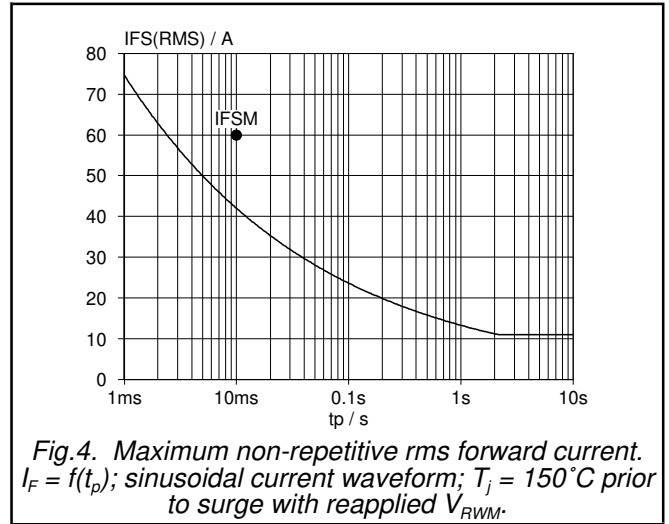
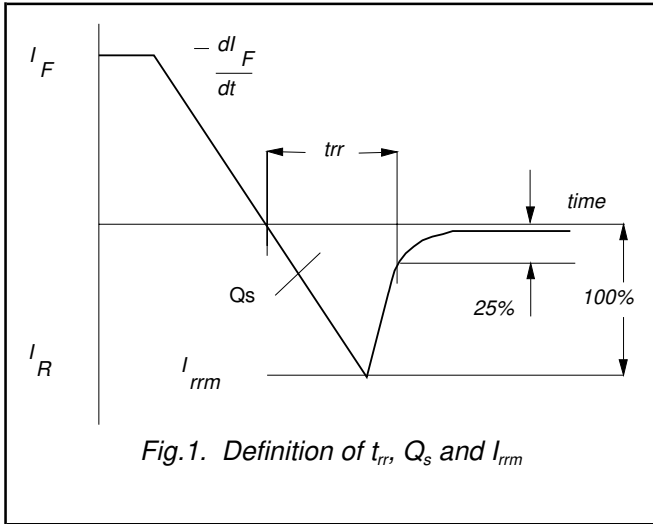
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage	$I_F = 20\text{ A}$	-	1.5	1.85	V
$I_R$	Reverse current	$V_R = V_{RWM}; T_j = 125\text{ }^\circ\text{C}$	-	0.1	0.4	mA

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$t_{rr}$	Reverse recovery time	$I_F = 1\text{ A}; V_R \geq 30\text{ V}; -di_F/dt = 50\text{ A}/\mu\text{s}$	-	100	135	ns
$Q_s$	Reverse recovery charge	$I_F = 2\text{ A}; V_R \geq 30\text{ V}; -di_F/dt = 20\text{ A}/\mu\text{s}$	-	0.5	0.7	$\mu\text{C}$
$di_R/dt$	Maximum slope of the reverse recovery current	$I_F = 2\text{ A}; -di_F/dt = 20\text{ A}/\mu\text{s}$	-	50	60	$\text{A}/\mu\text{s}$

Rectifier diodes  
fast, soft-recovery

BY229 series



Rectifier diodes  
fast, soft-recovery

BY229 series

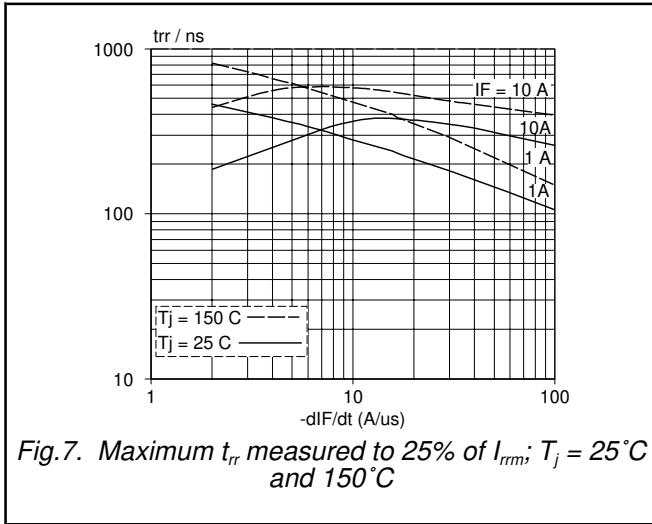


Fig.7. Maximum  $t_{rr}$  measured to 25% of  $I_{rm}$ ;  $T_j = 25^\circ\text{C}$  and  $150^\circ\text{C}$

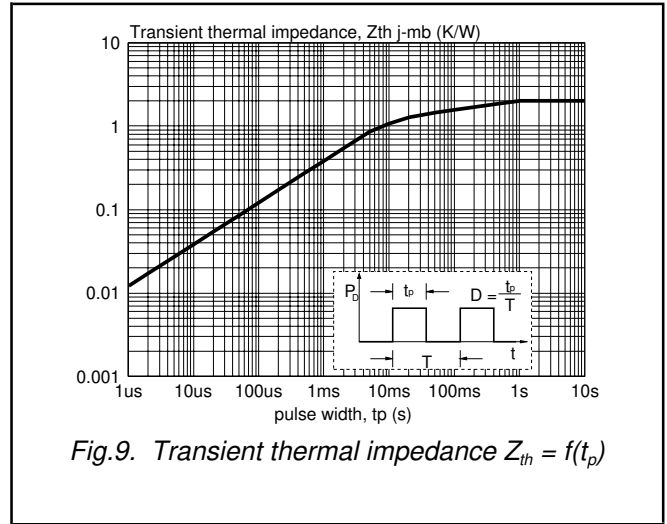


Fig.9. Transient thermal impedance  $Z_{th} = f(t_p)$

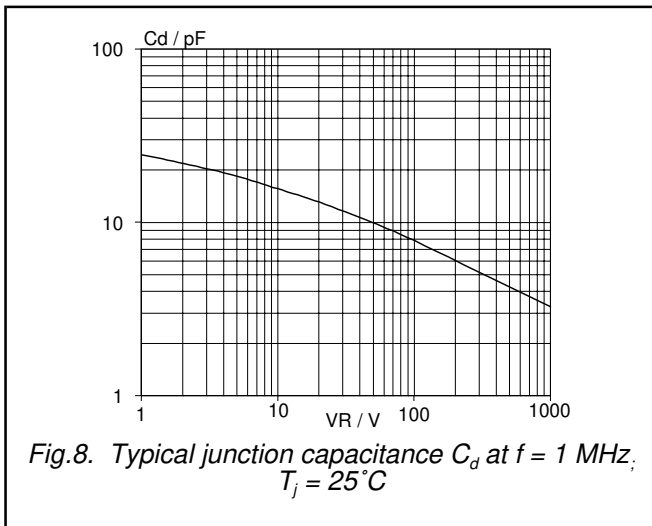
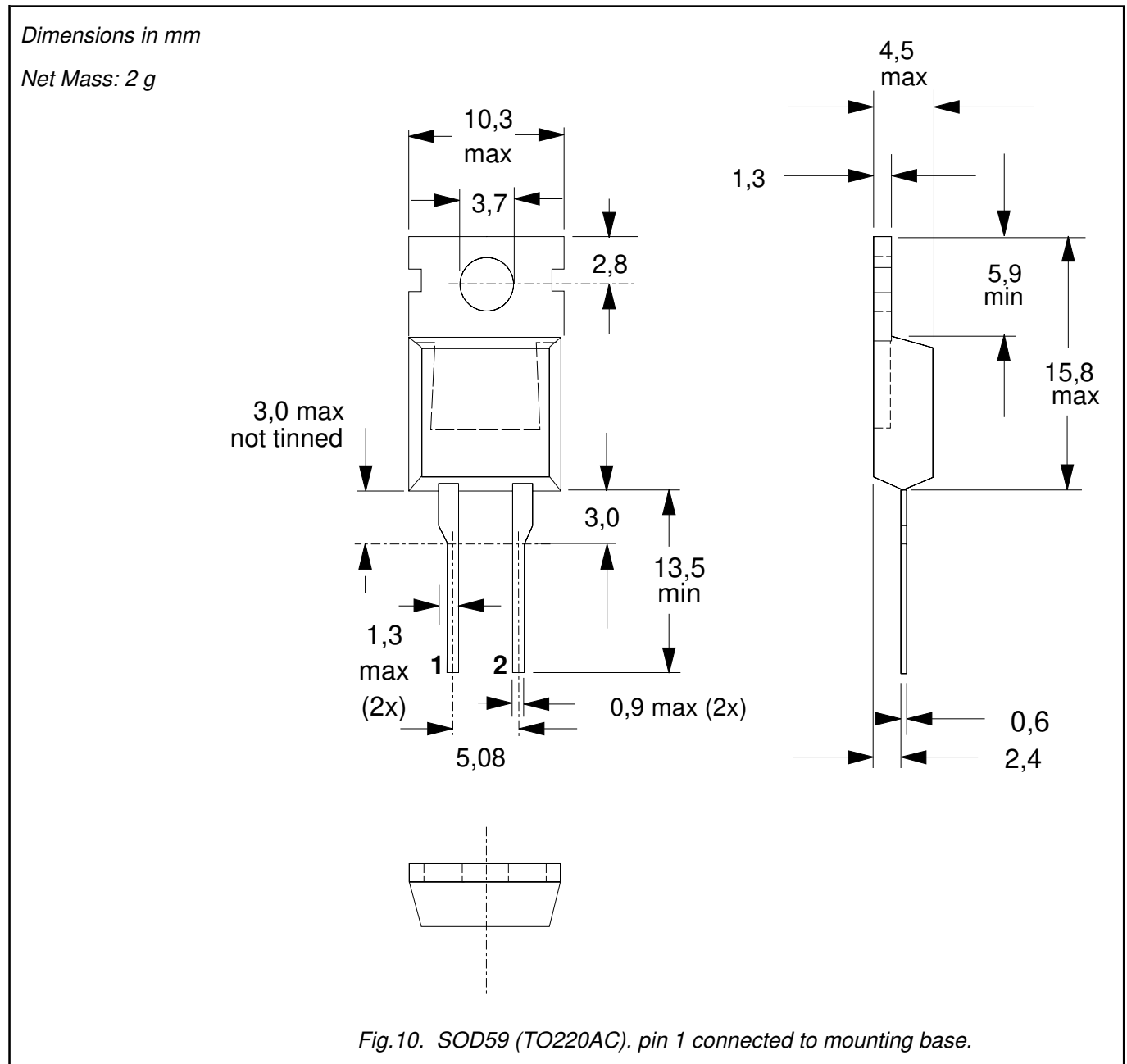


Fig.8. Typical junction capacitance  $C_d$  at  $f = 1\text{ MHz}$ ;  $T_j = 25^\circ\text{C}$

Rectifier diodes  
fast, soft-recovery

BY229 series

**MECHANICAL DATA**



**Notes**

1. Refer to mounting instructions for TO220 envelopes.
2. Epoxy meets UL94 V0 at 1/8".

---

**Rectifier diodes  
fast, soft-recovery**


---

**BY229 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.	
<b>© Philips Electronics N.V. 1998</b>	
All rights are reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner.	
The information presented in this document does not form part of any quotation or contract, it is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent or other industrial or intellectual property rights.	

**LIFE SUPPORT APPLICATIONS**

These products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably 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.