

# Silicon Diode

## **BY249-800**

800V/7A

# DATASHEET

OEM – Philips

Source: Philips Databook 1999

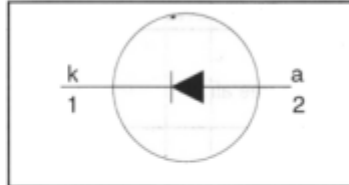
## Rectifier diodes general purpose

## BY249 series

### FEATURES

- Low forward volt drop
- High thermal cycling performance
- Low thermal resistance

### SYMBOL



### QUICK REFERENCE DATA

$$V_R = 300 \text{ V} / 600 \text{ V} / 800 \text{ V}$$

$$V_F \leq 1.05 \text{ V}$$

$$I_{F(AV)} = 7 \text{ A}$$

$$I_{FSM} \leq 60 \text{ A}$$

### GENERAL DESCRIPTION

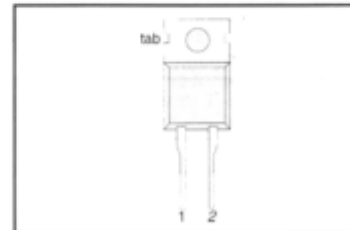
Glass-passivated double diffused rectifier diodes. The devices are intended for low frequency power rectifier applications.

The BY249 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			UNIT
		<b>BY249</b>		<b>-300</b>	<b>-600</b>	<b>-800</b>	
$V_{RSM}$	Peak non-repetitive reverse voltage		-	300	600	800	V
$V_{RRM}$	Peak repetitive reverse voltage		-	300	600	800	V
$V_{RWM}$	Crest working reverse voltage		-	200	500	700	V
$V_R$	Continuous reverse voltage		-	200	500	700	V
$I_{F(AV)}$	Average forward current <sup>1</sup>	sinusoidal; $a = 1.57$ ; $T_{mb} \leq 131 \text{ }^\circ\text{C}$	-	7			A
$I_{F(RMS)}$	RMS forward current		-	11			A
$I_{FRM}$	Peak repetitive forward current	sinusoidal; $a = 1.57$ ;	-	60			A
$I_{FSM}$	Peak non-repetitive forward current.	$t = 10 \text{ ms}$	-	60			A
		$t = 8.3 \text{ ms}$	-	66			A
		sinusoidal; $T_j = 150 \text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RWM(max)}$					
$I^2t$	$I^2t$ for fusing	$t = 10 \text{ ms}$	-	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.

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**THERMAL RESISTANCES**

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{thj-mb}$	Thermal resistance junction to mounting base	in free air.	-	-	2.0	K/W
$R_{thj-a}$	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	$I_F = 20\text{ A}$	-	1.2	1.6	V
		$I_F = 5\text{ A}; T_j = 100\text{ }^\circ\text{C}$	-	0.9	1.05	V
$I_R$	Reverse current	$V_R = V_{RWM}; T_j = 125\text{ }^\circ\text{C}$	-	0.1	0.4	mA

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