



ELECTRONIC TUBE REFERENCE

1129

Rectifier - Half Wave electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
RECTIFIER

Directly heated Philips gas-filled industrial rectifier with oxide-coated filament for battery-charger service. Rated for approximately 185 V peak inverse voltage and 1.5 A nominal rectified output.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	1.9 V / 5.5 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Rectifier	
PEAK INVERSE VOLTAGE	185 V
NOMINAL OUTPUT CURRENT	1.5 A
PEAK FORWARD CURRENT	9 A
WARM-UP TIME	60 s
<i>Gas-filled industrial rectifier with directly heated oxide-coated filament.</i>	

1129 — Gas-Filled Double-Anode Rectifying Valve

The **1129** is a gas-filled, double-anode rectifying valve designed primarily for industrial and battery charging applications. It is capable of charging a maximum of 20 lead-acid (Pb) cells, delivering a rectified current of up to 3 A per valve. The device features a directly heated, oxide-coated filament and is designed for vertical operation.

Mechanical Design, Mounting, and Base Connection

The 1129 is constructed with a glass envelope. Its physical dimensions are characterized by a maximum bulb diameter of 71 mm, a maximum overall height of 142 mm, and a maximum seated height of 124 mm. The net weight of the valve is approximately 75 g, while a bulk shipment of 50 valves has a gross weight of approximately 5200 g.

To ensure proper operation and heat dissipation, the valve must be mounted in a vertical position with the base facing down. It utilizes a Type A base and is designed to fit a type 40465 socket or support.

The electrical connections are distributed across the four-pin Base A configuration as follows:

- **Pin 3:** Filament (f)
- **Pin 8:** Filament (f)
- **Pin 10:** Anode (a)
- **Pin 4:** Anode (a')

Filament and Heating Requirements

The 1129 utilizes a directly heated, oxide-coated filament. The heating supply must be alternating current (A.C.). The electrical requirements for the filament are:

Parameter	Value
Filament Voltage (V_f)	1.9 V
Filament Current (I_f)	5.5 A
Recommended Pre-heating Time (t_w)	60 seconds

The recommended pre-heating time of 60 seconds is specified to ensure the filament reaches its proper operating temperature before anode voltage is applied. In urgent situations, this pre-heating period may be reduced to a minimum of 30 seconds.

Electrical Characteristics and Operating Limits

The typical operating characteristics of the gas-filled discharge path within the 1129 are defined by its arc and ignition voltages:

- **Arc Voltage (V_{arc}):** 9 V
- **Ignition Voltage (V_{ign}):** 16 V

To ensure reliable operation and prevent damage to the valve, the circuit must be designed to respect the following limiting values:

Parameter	Minimum	Maximum
Transformer Voltage (V_{tr})	12 V_{eff}	60 V_{eff}

Parameter	Minimum	Maximum
Peak Inverse Anode Voltage (V_{ainvp})	—	185 V
Anode Current (I_a)	—	1.5 A
Peak Anode Current (I_{ap})	—	9 A
Series Resistance (R_t)	2.5 $\mu\Omega$	—
Ambient Temperature (t_{amb})	-55 $^{\circ}\text{C}$	+75 $^{\circ}\text{C}$

The minimum series resistance (R_t) of 2.5 $\mu\Omega$ is required to limit the peak currents and protect the cathode from excessive ion bombardment during conduction. The transformer voltage limits are specified for standard operating circuits.

Technical Summary

The **1129** is a robust, gas-filled double-anode rectifier designed for low-voltage, high-current applications such as charging up to 20 lead-acid battery cells. Operating with a 1.9 V, 5.5 A directly heated filament, it requires a vertical, base-down mounting position using a Type A base. With a maximum average anode current of 1.5 A per anode (enabling 3 A total charging current per valve) and a peak anode current limit of 9 A, the 1129 provides efficient rectification with a low typical arc drop of 9 V and an ignition voltage of 16 V.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1999 Philips 0-D

Published test conditions and operating points. Values on this page are preserved as reported by this source.

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Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
MinimumSeriesResistance	2.5 ohm	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
TypicalArcVoltage	3 V	—
IgnitionVoltage	16 V	—