

Chapter 38

**SILICON POWER RECTIFIERS, INTERNATIONAL
RECTIFIER TYPES**

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LEADING PARTICULARS

<i>Load current</i>	250A
<i>Maximum reverse current</i>	40 mA
<i>Mounting torque minimum</i>	190 lb. in.
<i>Maximum</i>	250 lb. in.
<i>Storage temperature</i>	-65°C to +200°C
<i>Operating temperature range</i>	-25°C to 170°C
<i>Maximum junction temperature</i>	190°C
<i>PIV rating</i>	50 to 1000V
<i>Maximum dimensions</i>	1¼ × 6⅞ in.
<i>Weight</i>	8 ozs.

Introduction

1. These semi-conductors are used on some aircraft electrical systems as blocking devices to prevent current flowing from the battery to the generator. In use the rectifier is mounted on a heat sink for cooling purposes.

DESCRIPTION

2. The body of the rectifier forms a hexagon with a ¾ in. diameter stud protruding

from it, which facilitates mounting. A beryllium copper washer is incorporated in the mounting and torque loaded to 190 to 200 lb. in.

3. Reverse polarity types are available, exhibiting the same characteristics but recognizable by the addition of a suffix R to the basic type number.

WARNING . . .

Personnel are warned that beryllium is a toxic material

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and inhalation of beryllium dust will cause harmful effects. The diode mounting assembly should be handled with extreme caution and the torque-loading figures specified must be strictly adhered to in order to prevent damage, cracking or chipping of the beryllium washer. Detailed handling precautions will be found in A.P.4795A, Vol. 1, Book 3, Sect. 6, Chap. 2, App. 1.

SERVICING

4. Little routine servicing is possible apart from an inspection for signs of physical damage and a check to ensure the mounting torque is within the limits stated. The

serviceability can be established by measurement of the forward voltage drop under full load conditions and at 250A should not exceed 0.9V. The rectifier should only be tested under full load conditions when attached to its heat sink.

TABLE 1
Rated Voltage

Type No.	P.I.V.
7OU 5	50V.
7OU 10	100V.
7OU 20	200V.
7OU 40	400V.
7OU 60	600V.
7OU 80	800V.
7OU 100	1000V.

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