

Chapter 38

SILICON POWER RECTIFIERS, INTERNATIONAL
RECTIFIER TYPES

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LEADING PARTICULARS

Load current	250A
Maximum reverse current	40 mA
Mounting torque minimum	190 lb. in.
Maximum	...	...	...	...	...	...	...	...	250 lb. in.
Storage temperature	...	...	...	...	...	...	...	...	-65°C to +200°C
Operating temperature range	...	...	...	...	...	...	...	...	-25°C to 170°C
Maximum junction temperature	...	...	...	...	...	...	...	...	190°C
PIV rating	...	...	...	...	...	...	...	...	50 to 1000V
Maximum dimensions	...	...	...	...	...	...	...	...	1¼ × 6⅞ in.
Weight	...	...	...	...	...	...	...	...	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 recognisable 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.
70U 5	50V.
70U 10	100V.
70U 20	200V.
70U 40	400V.
70U 60	600V.
70U 80	800V.
70U 100	1000V.

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