RCA Solid State Division

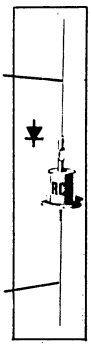
Rectifiers

1N440B 1N443B
1N441B 1N444B
1N442B 1N445B

DIFFUSED-JUNCTION SILICON RECTIFIERS

FLANGED-CASE AXIAL-LEAD TYPES

For Power-Supply Applications In Industrial and Military Electronic Equipment



H-967
JEDEC DO-1

RCA-1N440B, 1N441B, 1N442B, 1N443B, 1N444B, and 1N445B are hermetically sealed silicon rectifiers of the diffused-junction type, designed for use in power supplies of magnetic amplifiers, radio receivers, dc blocking circuits, power supplies, and other military and industrial applications.

These devices have dc forward-current ratings to 0.75 ampere at an ambient temperature of 25°C, and peak reverse voltage ratings of 100, 200, 300, 400, 500 and 600 volts, respectively.

The 1N440B through 1N445B feature (1) sturdy and compact mount structure, (2) axial leads for flexibility of circuit connections, (3) welded hermetic seals—every unit is pressure-tested to assure protection against moisture and contamination, (4) superior junction formation made possible by a diffusion process with very precise controls. In addition, these devices are designed to meet the following stringent environmental, mechanical and life requirements of prime importance in military applications: (a) special temperature-cycling tests to assure stable performance over the entire operating temperature range, (b) special coating to provide protection against the effects of severe environmental conditions,

FEATURES:

- **stringent environmental and mechanical tests to insure dependable performance in industrial and military applications**
- **hermetically sealed JEDEC DO-1 package**
- **wide operating-temperature range:**
  - **1N440B, 1N441B, 1N442B, 1N443B: -65 to +165°C**
  - **1N444B, 1N445B: -65 to +150°C**

RECTIFIER SERVICE

Absolute-Maximum Ratings, for a Supply Frequency of 60 Hz:

	1N440B	1N441B	1N442B	1N443B	1N444B	1N445B	UNITS
PEAK REVERSE VOLTAGE	100	200	300	400	500	600	V
RMS SUPPLY VOLTAGE For resistive or inductive loads	70	140	210	280	350	420	V
DC REVERSE (BLOCKING) VOLTAGE	100	200	300	400	500	600	V
FORWARD CURRENT:[a]							
DC:							
at T_A = 50°C	750	750	750	750	650	650	mA
at T_A = 100°C	500	500	500	500	425	400	mA
at T_A = 150°C	250	250	250	250	0	0	mA
Peak, Repetitive	3.5	3.5	3.5	3.5	3.5	3.5	A
Surge, One-Cycle	15	15	15	15	15	15	A
TEMPERATURE RANGE (Ambient):							
Operating	165	165	165	165	150	150	°C
Storage	-65 to +175						°C

[a] For maximum dc forward current values at ambient temperatures other than those specified, See Rating Chart Fig. 1.

Characteristics, at Ambient Temperature (T_A) = 25°C

CHARACTERISTICS	1N440B	1N441B	1N442B	1N443B	1N444B	1N445B	UNITS
Maximum Forward Voltage Drop (DC) at full load current.	1.5	1.5	1.5	1.5	1.5	1.5	V
Maximum Reverse Current (DC) at maximum peak reverse voltage	0.3	0.75	1	1.5	1.75	2	μA
Maximum Reverse Current (averaged over 1 complete cycle of supply voltage): at maximum rated PRV, T_A = 150°C	100	100	200	200	200	200	μA

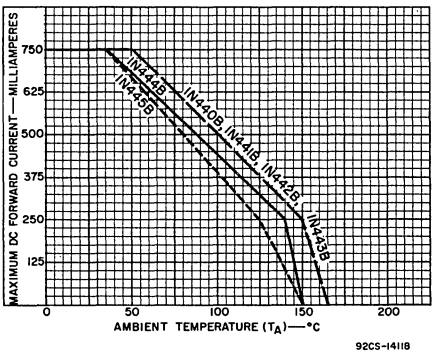


Fig. 1 - Rating Chart for RCA-1N440B through 1N445B.

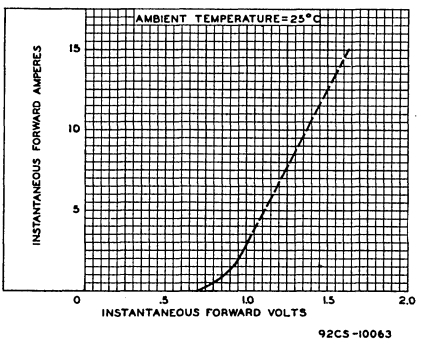


Fig. 2 - Typical Forward Voltage and Current Characteristic for RCA-1N440B through 1N445B.

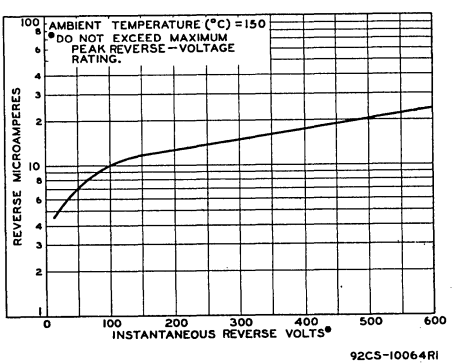


Fig. 3 - Typical Dynamic Reverse Characteristic for RCA-1N440B through 1N445B.