RCA TUBE HANDBOOK HB-3

SEMICONDUCTOR DEVICE SECTION

In this section data are given for semiconductor devices such as crystal diodes and transistors. These electron devices depend for their functioning on the flow of electrons in a solid—a semiconductor.

For further Technical Information, write to [illegible] Engineering, Tube Department, [illegible] Corporation of America, Harrison, N. J.

PRICES□

OF SEMICONDUCTOR DEVICES

Type	Schedule D●	Schedule U▲
1N34-A	$ 2.00	-
1N38-A	-	$ 2.55
1N54-A	-	1.45
1N55-A	-	4.70
1N56-A	-	1.45
1N58-A	-	1.80
2N32	-	15.40
2N33	-	23.00
2N34	-	13.40
2N35	-	18.40

□ This price list applies only in the United States of America and is subject to change without notice. All prices are exclusive of all Federal, State and local excise, sales, and similar taxes.

▲ Schedule U shows user prices for types priced for distribution through other than dealer and service channels.

● Schedule D shows list prices for types priced for distribution through dealer and service channels.

INFORMATION ON PURCHASING ABOVE TYPES

Information as to where *RCA Semiconductor Devices* can be purchased may be obtained from our *regional office* nearest you or from *Tube Department, Radio Corporation of America, Harrison, N.J.*

TRANSISTORS

Transistors are a new form of electron device. They can perform many of the functions of an electron tube and, in addition, can do some things better and more efficiently than electron tubes. Unlike electron tubes which depend for their functioning on the flow of electrons through a vacuum, a gas, or a vapor, transistors make use of the flow of electrons in a solid — a semiconductor.

A semiconductor is a material having a conductivity lower than that of metals but higher than that of insulators. There are many varieties of semiconductors, but the one employed for the transistors described in this section is germanium. Germanium in its very purest state behaves like an insulator, but its conductivity can be increased by the addition of exact but almost infinitesimal amounts of certain impurities. Peculiarly, the manner in which a germanium crystal conducts can be changed by the choice of the impurity. Thus, by the addition of the proper amount of certain impurities to pure germanium, its conductivity is increased because a surplus of electrons which can migrate freely through the crystal is provided. A conducting germanium crystal so made is identified as *n*-type because it depends on negative particles of electricity, electrons, for conduction.

On the other hand, the addition of other impurities provides a deficiency of electrons which effectively behave like positive particles of electricity. This deficiency of electrons leaves vacancies or holes in the crystal structure. These holes which are free to migrate can carry current but in a direction opposite to that of the *n*-type crystal. Because these carriers of the conduction current are positive in nature, a germanium crystal of this type is identified as *p*-type.

It should be noted that whereas electron tubes depend ordinarily on electrons for conduction, transistors not only make use of electrons but also of holes for obtaining conduction.

The transistors described in this section make use of both kinds of conduction and employ two different types of structures. These two types of structures are identified as "point-contact" and "junction".

Fig. 1 shows the structure of a point-contact transistor. It consists of a crystal of *n*-type germanium having three electrical contacts. Two of these are point contacts and are known as the emitter and collector. A third, the

base, makes area contact with the germanium crystal. The complete assembly is encased in plastic to provide ruggedness and freedom from atmospheric contaminants.

Fig.1 also shows the point-contact transistor connected in a simple circuit in which the base connection serves as the common return for the input circuit and the output circuit. The input circuit on the left is completed through the battery, the emitter, and the germanium crystal to the base connection. When a positive voltage is applied to the emitter, electrons will be drawn from the crystal into the emitter and thus leave holes in the crystal structure. Under the influence of the negative field of the collector, these holes flow to the collector and thereby increase the collector current appreciably. Or as is sometimes stated, the emitter electrode injects holes into the germanium crystal. Holes near the collector allow electrons to pass into the crystal. Some of these electrons neutralize the holes; others flow to the base connection and thus complete the circuit.

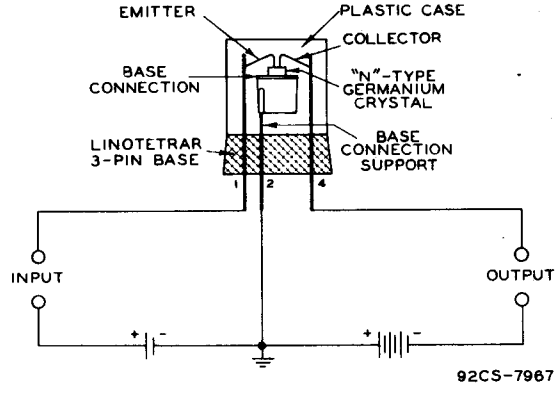


Fig.1 - Diagrammatic Sketch Showing Structural Arrangement of Type 2N32 or Type 2N33 with Associated Simple Circuit.

If the assumption is made that every unit of hole current which leaves the emitter reaches the collector, it follows that a small change in emitter current will result in an equivalent change in collector current, and consequently produce a current amplification factor of one. The current

amplification factor or "alpha" of a transistor is defined as the ratio of change in collector current to a change in emitter current when collector voltage is maintained constant. In point-contact transistors "alpha" is greater than unity; in junction-type transistors, it is less than but approaches unity.

If the germanium crystal employed in Fig.1 is of the *p*-type, a negative voltage is applied to the emitter and holes will be drawn from the crystal into the emitter and thus leave an excess of electrons in the crystal structure. Under the influence of the positive field of the collector, these electrons flow through the crystal to the collector. In general, the *p*-type germanium crystal has characteristics similar to the *n*-type except that in operation all battery polarities are reversed.

Fig.2 shows the structure of a junction transistor of the *n-p-n* type. It is composed of a wafer of *p*-type germanium between two smaller layers of *n*-type germanium. Low-resistance connections are made to the *n*-layers, one of which serves as the emitter and the other as the collector. A third low-resistance connection to the *p*-layer is the base connection. The complete assembly is encased in plastic to provide ruggedness and freedom from atmospheric contaminants.

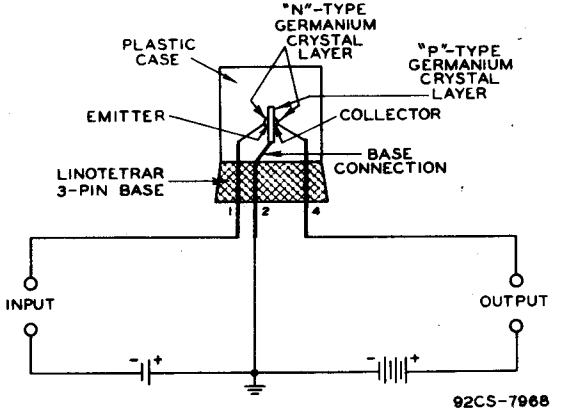


Fig.2 - Diagrammatic Sketch Showing Structural Arrangement of Type 2N35 with Associated Simple Circuit. For Illustration Purposes, the Crystal Assembly is Rotated 90° Within the Plastic Case.

TRANSISTORS

The principle of operation of the junction transistor is somewhat different from that of the point-contact transistor. In the *n-p-n* junction transistor, electrons from the *n*-layer diffuse through the *p*-layer and are attracted to the collector. The *p*-layer has a surplus of holes. Because the *p*-layer is very thin, most of the electrons entering the base region from the emitter will reach the collector region without recombining (neutralizing) the holes. Practically all of the electrons leaving the emitter reach the collector, thus resulting in a current amplification factor approaching unity.

The action of the *p-n-p* type of junction transistor is similar to that of the *n-p-n* type except that the polarities of the battery voltages are reversed and conduction is caused by holes instead of electrons.

Transistors are essentially low-impedance devices, that is, they deal with current changes rather than voltage changes. They are small in size and the power requirements for their operation are extremely small. In addition, they operate instantaneously on application of voltages to the electrodes.

The point-contact transistor has a current amplification factor greater than unity. This feature contributes to its usefulness in oscillator and triggering applications. In addition, the point-contact transistor can be operated at relatively high frequencies. Because of this feature, it has considerable application in switching circuits and in radio circuits such as intermediate-frequency amplifiers, radio-frequency amplifiers, and radio-frequency oscillators.

The junction transistor has a current amplification factor approaching unity. This characteristic contributes to the stability of the junction transistor even under short-circuit conditions. It has a high operating power gain and can operate with extremely low values of input power — features which are of primary importance in oscillator and amplifier applications in the audio-frequency and low-frequency ranges.

IN34-A
CRYSTAL DIODE

GERMANIUM POINT-CONTACT TYPE

A general-purpose type intended for low-power rectification in applications such as isolating, clipping, and switching circuits, as well as in certain meter circuits.

DATA

General:

Maximum Envelope Length (Including studs)	15/16"
Maximum Envelope Diameter	1/4"
Maximum Overall Length (Including flexible leads)	4-3/16"
Leads, Flexible	2
Length	1-3/8" to 1-5/8"
Diameter	0.025"
Envelope, Glass	T-1-1/2
Operating Position	Any

RECTIFIER SERVICE

For frequencies of 25 cps and above

Maximum Ratings, *Absolute Values:*

PEAK INVERSE VOLTAGE	60 max.	volts
FORWARD CURRENT:		
Peak	150 max.	ma
Average*	50 max.	ma
FAULT CURRENT▲ (For duration of 1 sec. max.)	500 max.	ma
AMBIENT TEMPERATURE RANGE	-50 to +75	°C

Characteristics at Ambient Temperature of 25°C:

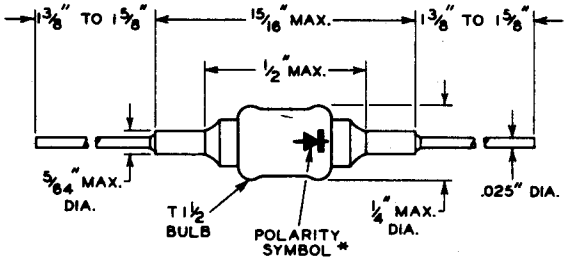
Minimum Forward Current at dc volts = 1	5	ma
Maximum Average Inverse Current:		
At dc volts = -10	30	μamp
At dc volts = -50	500	μamp
Minimum Peak Inverse Voltage for zero-dynamic resistance	75	volts
Shunt Capacitance (Approx.) - Measured Between Studs	1	μμf

* Averaged over one conduction cycle.

▲ Maximum fault current is the highest value of current that should be permitted to flow through the diode under a fault condition such as load short circuit.

IN34-A

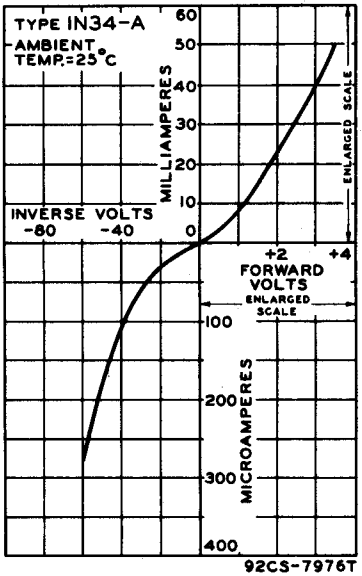
CRYSTAL DIODE



*ARROW INDICATES DIRECTION OF FORWARD (EASY) CURRENT AS INDICATED BY DC AMMETER.

92CS-7980

STATIC CHARACTERISTIC



92CS-7976T

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

1N38-A

CRYSTAL DIODE

GERMANIUM POINT-CONTACT TYPE

A large-signal type having a high peak inverse voltage rating and intended for use in electronic computers and clamping circuits.

DATA

General:

Maximum Envelope Length (Including studs)	15/16"
Maximum Envelope Diameter	1/4"
Maximum Overall Length (Including flexible leads)	4-3/16"
Leads, Flexible	2
Length	1-3/8" to 1-5/8"
Diameter	0.025"
Envelope, Glass	T-1-1/2
Operating Position	Any

RECTIFIER SERVICE

For frequencies of 25 cps and above

Maximum Ratings, *Absolute Values:*

PEAK INVERSE VOLTAGE	100 max.	volts
FORWARD CURRENT:		
Peak	150 max.	ma
Average*	50 max.	ma
FAULT CURRENT▲ (For duration of 1 sec. max.)	500 max.	ma
AMBIENT TEMPERATURE RANGE	-50 to +75	°C

Characteristics at Ambient Temperature of 25°C:

Minimum Forward Current at dc volts = 1	4	ma
Maximum Average Inverse Current:		
At dc volts = -3	5	μamp
At dc volts = -100	500	μamp
Minimum Peak Inverse Voltage for zero dynamic resistance	120	volts
Shunt Capacitance (Approx.) - Measured Between Studs	1	μμf

* Averaged over one conduction cycle.

▲ Maximum fault current is the highest value of current that should be permitted to flow through the diode under a fault condition such as load short circuit.

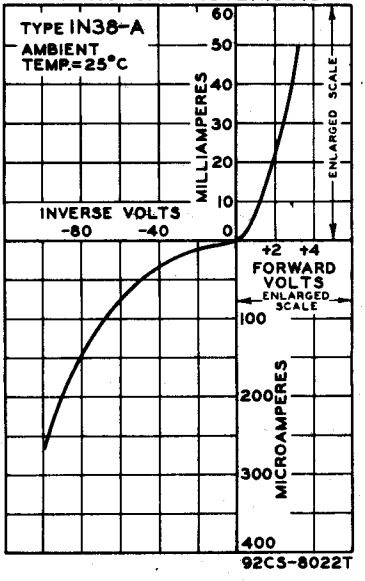
DIMENSIONAL OUTLINE

for Type 1N38-A is the same as that shown for Type 1N34-A

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

IN38-A
CRYSTAL DIODE

STATIC CHARACTERISTIC



TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

1N54-A

CRYSTAL DIODE

GERMANIUM POINT-CONTACT TYPE

A high-back-resistance type intended for use in clipping circuits, high-impedance high-voltage probes, dc restorer circuits, and high-impedance detector circuits.

DATA

General:

Maximum Envelope Length (Including studs)	15/16"
Maximum Envelope Diameter	1/4"
Maximum Overall Length (Including flexible leads)	4-3/16"
Leads, Flexible	2
Length	1-3/8" to 1-5/8"
Diameter	0.025"
Envelope, Glass	T-1-1/2
Operating Position	Any

RECTIFIER SERVICE

For frequencies of 25 cps and above.

Maximum Ratings, *Absolute Values:*

PEAK INVERSE VOLTAGE	50 max.	volts
FORWARD CURRENT:		
Peak	150 max.	ma
Average*	50 max.	ma
FAULT CURRENT▲ (For duration of 1 sec. max.)	500 max.	ma
AMBIENT TEMPERATURE RANGE	-50 to +75	°C

Characteristics at Ambient Temperature of 25°C:

Minimum Forward Current at dc volts = 1	5	ma
Maximum Average Inverse Current:		
At dc volts = -10	7	μamp
At dc volts = -50	100	μamp
Minimum Peak Inverse Voltage for zero dynamic resistance	75	volts
Shunt Capacitance (Approx.)		
Measured Between Studs	1	μμf

* Averaged over one conduction cycle.

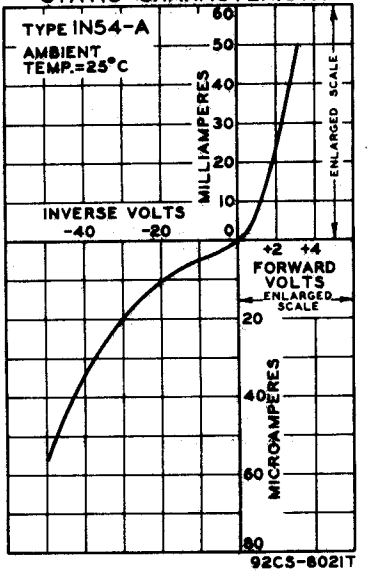
▲ Maximum fault current is the highest value of current that should be permitted to flow through the diode under a fault condition such as load short circuit.

DIMENSIONAL OUTLINE

for Type 1N54-A is the same as that shown for Type 1N34-A

IN54-A
CRYSTAL DIODE

STATIC CHARACTERISTIC



TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

IN55-A

CRYSTAL DIODE

GERMANIUM POINT-CONTACT TYPE

A large-signal type having a high peak inverse voltage rating and intended for use in electronic computers, clamping circuits, dc restorer circuits, and in high-voltage probes.

DATA

General:

Maximum Envelope Length (Including studs)	15/16"
Maximum Envelope Diameter	1/4"
Maximum Overall Length (Including flexible leads)	4-3/16"
Leads, Flexible	2
Length	1-3/8" to 1-5/8"
Diameter	0.025"
Envelope, Glass	T-1-1/2
Operating Position	Any

RECTIFIER SERVICE

For frequencies of 25 cps and above

Maximum Ratings, *Absolute Values:*

PEAK INVERSE VOLTAGE	150 max.	volts
FORWARD CURRENT:		
Peak	150 max.	ma
Average*	50 max.	ma
FAULT CURRENT▲ (For duration of 1 sec. max.)	500 max.	ma
AMBIENT TEMPERATURE RANGE	-50 to +75	°C

Characteristics at Ambient Temperature of 25°C:

Minimum Forward Current at dc volts = 1	4	ma
Maximum Average Inverse Current:		
At dc volts = -150	500	μamp
Minimum Peak Inverse Voltage for zero dynamic resistance	170	volts
Shunt Capacitance (Approx.)- Measured Between Studs	1	μμf

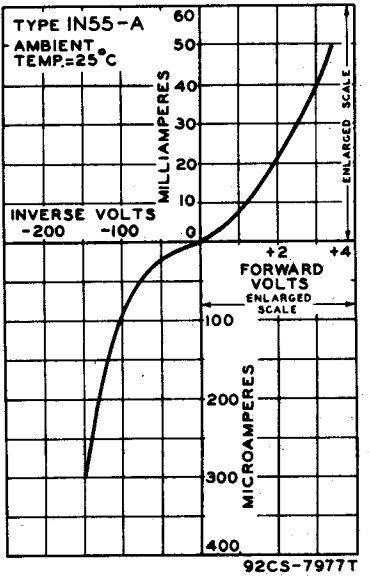
* Averaged over one conduction cycle.

▲ Maximum fault current is the highest value of current that should be permitted to flow through the diode under a fault condition such as load short circuit.

DIMENSIONAL OUTLINE
for Type 1N55-A is the same as that shown for Type 1N34-A

IN55-A
CRYSTAL DIODE

STATIC CHARACTERISTIC



IN56-A

CRYSTAL DIODE

GERMANIUM POINT-CONTACT TYPE

A high-conduction type featuring exceptionally low dynamic impedance and intended for limiter service in FM receivers.

DATA

General:

Maximum Envelope Length (Including studs)	15/16"
Maximum Envelope Diameter	1/4"
Maximum Overall Length (Including flexible leads)	4-3/16"
Leads, Flexible	2
Length	1-3/8" to 1-5/8"
Diameter	0.025"
Envelope, Glass	T-1-1/2
Operating Position	Any

RECTIFIER SERVICE

For frequencies of 25 cps and above

Maximum Ratings, *Absolute Values:*

PEAK INVERSE VOLTAGE	40 max.	volts
FORWARD CURRENT:		
Peak	200 max.	ma
Average*	60 max.	ma
FAULT CURRENT▲ (For duration of 1 sec. max.)	1000 max.	ma
AMBIENT TEMPERATURE RANGE	-50 to +75	°C

Characteristics at Ambient Temperature of 25°C:

Minimum Forward Current at dc volts = 1	15	ma
Maximum Average Inverse Current:		
At dc volts = -30	300	μamp
Minimum Peak Inverse Voltage for zero dynamic resistance	50	volts
Shunt Capacitance (Approx.) - Measured Between Studs)	1	μμf

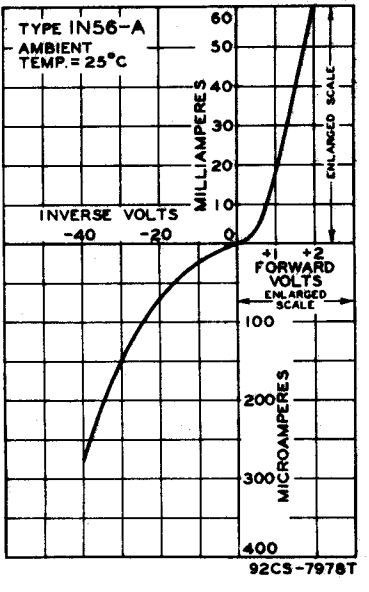
* Averaged over one conduction cycle.

▲ Maximum fault current is the highest value of current that should be permitted to flow through the diode under a fault condition such as load short circuit.

DIMENSIONAL OUTLINE
for Type 1N56-A is the same as that shown for Type 1N34-A

IN56-A
CRYSTAL DIODE

STATIC CHARACTERISTIC



TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

IN58-A

CRYSTAL DIODE

GERMANIUM POINT-CONTACT TYPE

A large-signal type having a high peak inverse voltage rating and intended for use in electronic computers, clamping circuits, dc restorer circuits, and in high-voltage probes.

DATA

General:

Maximum Envelope Length (Including studs)	15/16"
Maximum Envelope Diameter	1/4"
Maximum Overall Length (Including flexible leads)	4-3/16"
Leads, Flexible	2
Length	1-3/8" to 1-5/8"
Diameter	0.025"
Envelope, Glass	T-1-1/2
Operating Position	Any

RECTIFIER SERVICE

For frequencies of 25 cps and above

Maximum Ratings, *Absolute Values*:

PEAK INVERSE VOLTAGE	100 max.	volts
FORWARD CURRENT:		
Peak	150 max.	ma
Average*	50 max.	ma
FAULT CURRENT[▲] (For duration of 1 sec. max.)	500 max.	ma
AMBIENT TEMPERATURE RANGE	-50 to +75	°C

Characteristics at Ambient Temperature of 25°C:

Minimum Forward Current at dc volts = 1	4	ma
Maximum Average Inverse Current:		
At dc volts = -100	600	μamp
Minimum Peak Inverse Voltage for zero dynamic resistance	120	volts
Shunt Capacitance (Approx.)- Measured Between Studs	1	μμf

* Averaged over one conduction cycle.

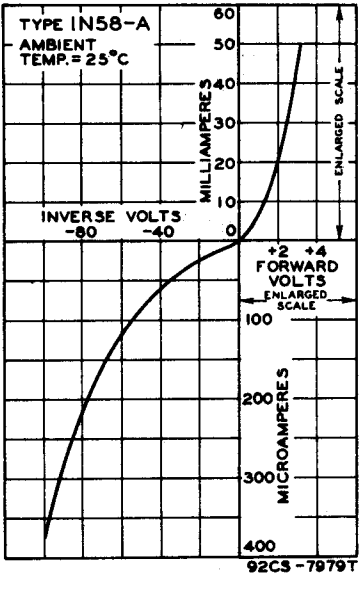
▲ Maximum fault current is the highest value of current that should be permitted to flow through the diode under a fault condition such as load short circuit.

DIMENSIONAL OUTLINE

for Type 1N58-A is the same as that shown for Type 1N34-A

IN58-A
CRYSTAL DIODE

STATIC CHARACTERISTIC



TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

RCA

2N32

POINT-CONTACT TRANSISTOR

GERMANIUM TYPE FOR PULSE OR SWITCHING APPLICATIONS

DATA

General:

Maximum Overall Length	0.660"
Maximum Seated Length	0.445"
Width	0.320" ± .020"
Maximum Depth	0.240"
Case	Plastic
Base	Small-Oblong Linotetrar 3-Pin
Mounting Position	Any

PULSE or SWITCHING SERVICE

Voltage values are given with respect to base connection

Maximum Ratings, *Absolute Values:*

COLLECTOR:		
DC Voltage	-40 max.	volts
DC Current	-8 max.	ma
Dissipation	50 max.	mw
EMITTER:		
DC Voltage	-40 max.	volts
DC Current	3 max.	ma
AMBIENT TEMPERATURE	40 max.	°C

Characteristics at Ambient Temperature of 25°C:

With input circuit between emitter and base connection, and output circuit between collector and base connection

DC Collector Voltage	-25	volts
DC Emitter Current°	0.5	ma
Current Amplification Factor	2.2	
Resistance:		
Open-Circuit Input	400	ohms
Open-Circuit Output	31000	ohms
Feedback	140	ohms
Power Gain#	21	db
Frequency:		
For Voltage-gain cutoff†	0.9	Mc
For alpha cutoff††	2.7	Mc

Minimum Circuit Values:

Emitter-Circuit Resistance	1000 min.	ohms

° obtained by adjusting a variable resistor in series with power supply to give the desired current.

with collector load resistance of 10000 ohms, signal-source impedance of 500 ohms, and signal frequency of 5000 cycles per second.

† measured at a point 3 decibels down from the low-frequency value (100 KC) and with collector load resistance of 20000 ohms, signal-source impedance of 300 ohms, and signal voltage of 25 millivolts rms. The cutoff frequency is defined as the frequency at which the output voltage has dropped to 0.7 of its low-frequency value.

††, see next page.

2N32

2N32

POINT-CONTACT TRANSISTOR

†† Measured at a point 3 decibels down from its low-frequency value (100 KC). The cutoff frequency is defined as the frequency at which the current amplification factor has dropped to 0.7 of its low-frequency value.

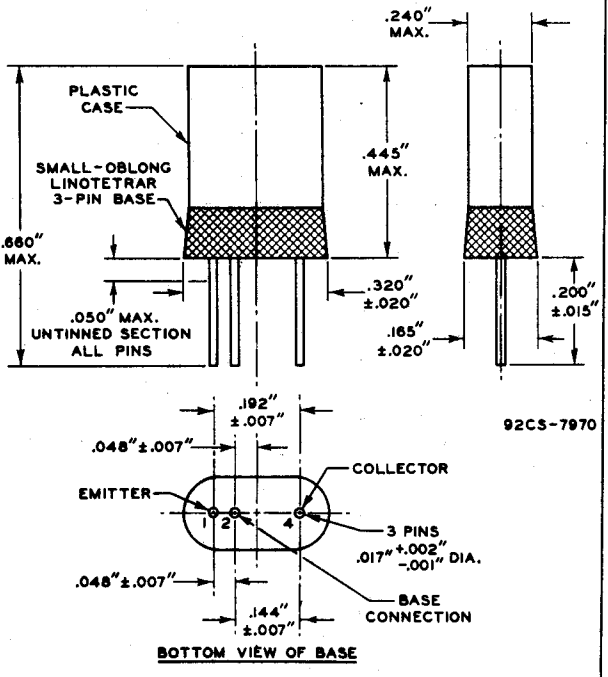
The 2N32 should not be inserted into or withdrawn from its socket with the power "on" because high transient currents may cause permanent damage to the transistor.

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

RCA

2N32

POINT-CONTACT TRANSISTOR



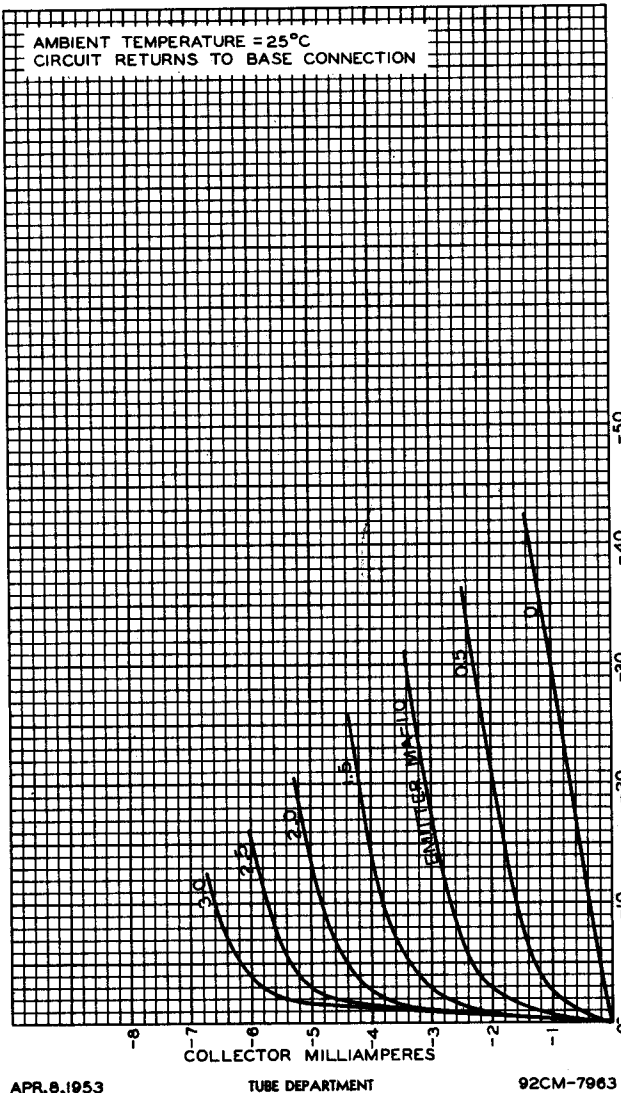
BOTTOM VIEW OF BASE

PIN-SPACING TOLERANCES ARE NOT CUMULATIVE

RCA

2N32

AVERAGE COLLECTOR CHARACTERISTICS



RCA

2N33

POINT-CONTACT TRANSISTOR

GERMANIUM TYPE FOR OSCILLATOR APPLICATIONS UP TO 50 Mc

DATA

General:

Maximum Overall Lengtn	0.660"
Maximum Seated Length	0.445"
Width	0.320" ± .020"
Maximum Depth	0.240"
Case	Plastic
Base	Small-Oblong Linotetrar 3-Pin
Mounting Position	Any

VHF OSCILLATOR SERVICE

Voltage values are given with respect to base connection

Maximum Ratings, *Absolute Values:*

COLLECTOR:		
DC Voltage	-8.5 max.	volts
DC Current	-7 max.	ma
Dissipation	30 max.	mw
EMITTER:		
DC Current	0.8 max.	ma
AMBIENT TEMPERATURE	40 max.	°C

Typical Operation in Accompanying 50-Mc Oscillator Test Circuit:

COLLECTOR:		
DC Supply Voltage	-8	volts
DC Current	-3.3	ma
DC Emitter Current	0.3	ma
Useful Power Output (Approx.)	1.0	mw

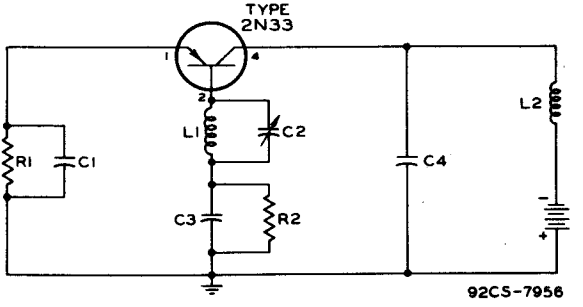
The 2N33 should not be inserted into or withdrawn from its socket with the power "on" because high transient currents may cause permanent damage to the transistor.

OUTLINE DIMENSIONS and TERMINAL CONNECTIONS for Type 2N33 are the same as those shown for Type 2N32

2N33

POINT-CONTACT TRANSISTOR

50-Mc Oscillator Test Circuit



C1: 1 μμf, ceramic, 25 volts
C2: 4 to 30 μμf, ceramic adjustable, 25 volts
C3: 270 μμf, mica, 25 volts
C4: 470 μμf, mica, 25 volts
L1: 0.46 μh tank inductance
L2: 1 mh rf choke
R1: 5100 ohms, 0.5 watt
R2: 1000 ohms, 0.5 watt

Devices and arrangements shown or described herein may use patents of RCA or others. Information contained herein is furnished without responsibility by RCA for its use and without prejudice to RCA's patent rights.

RCA

2N34

JUNCTION TRANSISTOR

P-N-P GERMANIUM TYPE
FOR LOW-POWER, LOW-FREQUENCY APPLICATIONS

DATA

General:

Maximum Overall Length	0.885"
Maximum Seated Length	0.670"
Width	0.320" ± 0.020"
Depth	0.165" ± 0.020"
Case	Plastic
Base	Small-Oblong Linotetrar 3-Pin
Mounting Position	Any

AUDIO-FREQUENCY AMPLIFIER SERVICE

Voltages are given with respect to base connection

Maximum Ratings, *Absolute Values*:

COLLECTOR:		
DC Voltage	-25 max.	volts
DC Current	-8 max.	ma
Dissipation	50 max.	mw
EMITTER:		
DC Current	8 max.	ma
AMBIENT TEMPERATURE	50 max.	°C

Characteristics at Ambient Temperature of 25°C:

With input circuit between base connection and emitter, and output circuit between collector and emitter

Collector:		
DC Voltage	-6	volts
DC Current	-10▲	μamp
DC Emitter Current●	1	ma
DC Base-Connection Current	-25	μamp
Current Amplification Factor (Approx.):		
Between Emitter and Collector	0.98	
Between Base Connection and Collector	40	
Power Gain#	40	db

▲ with collector voltage of -12 volts and emitter current of 0 milliamperes.

● obtained by adjusting a variable resistor in series with the power supply to give the desired current.

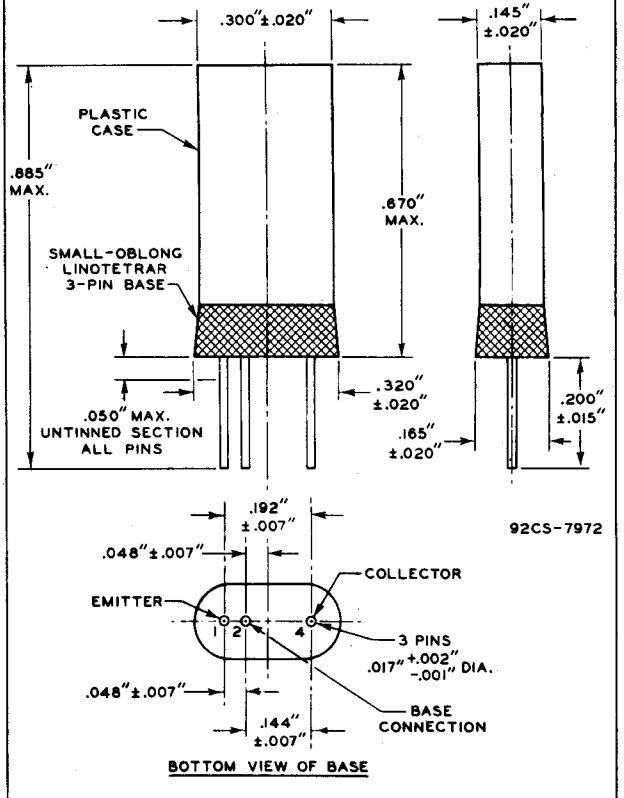
\# with collector load resistance of 30000 ohms, signal-source impedance of 500 ohms, and signal frequency of 5000 cycles per second.

The 2N34 should not be inserted into or withdrawn from its socket with the power "on" because high transient currents may cause permanent damage to the transistor.

RCA

2N34

JUNCTION TRANSISTOR



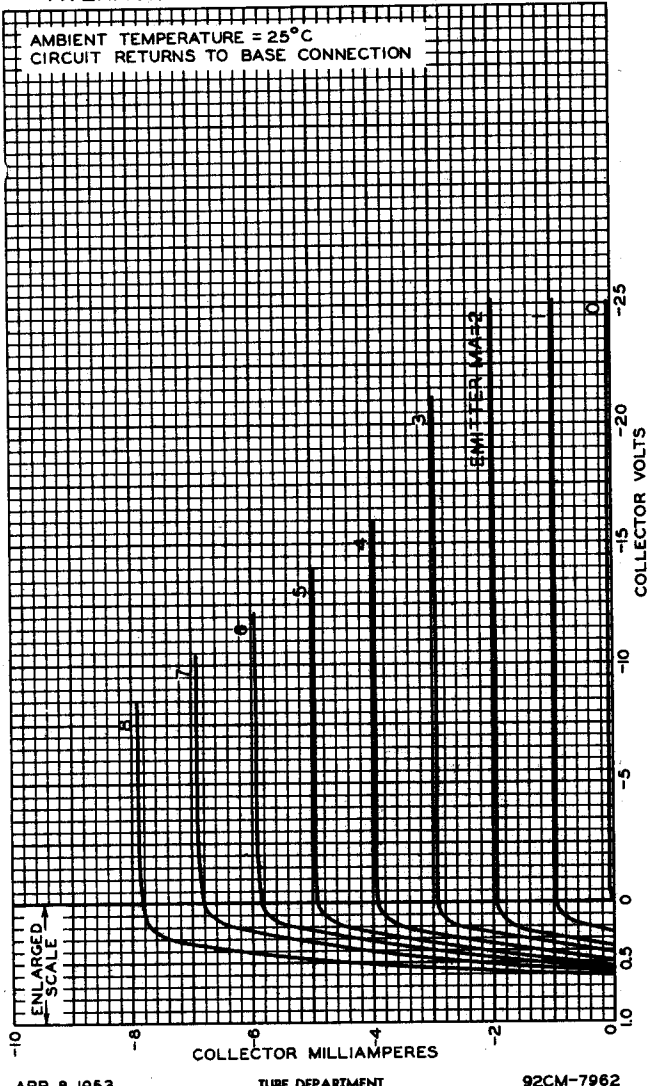
BOTTOM VIEW OF BASE

PIN-SPACING TOLERANCES ARE NOT CUMULATIVE

RCA

2N34

AVERAGE COLLECTOR CHARACTERISTICS



APR. 8, 1953

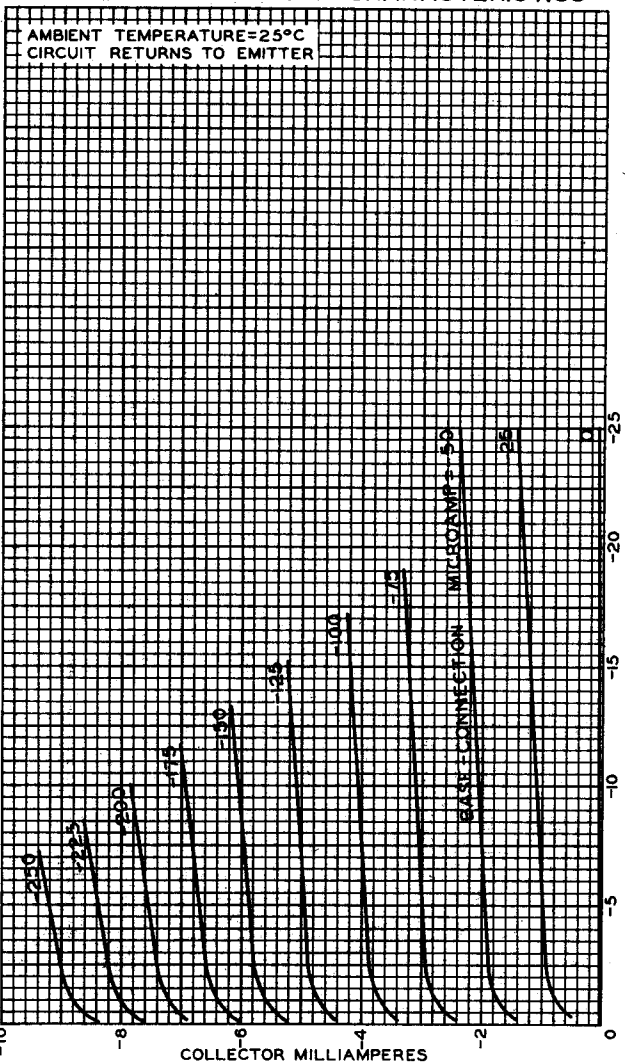
TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7962

RCA

2N34

AVERAGE COLLECTOR CHARACTERISTICS



RCA

2N35

JUNCTION TRANSISTOR

N-P-N GERMANIUM TYPE
FOR LOW-POWER, LOW-FREQUENCY APPLICATIONS

DATA

General:

Maximum Overall Length	0.885"
Maximum Seated Length	0.670"
Width	0.320" ± 0.020"
Depth	0.165" ± 0.020"
Case	Plastic
Base	Small-Oblong Linotetrar 3-Pin
Mounting Position	Any

AUDIO-FREQUENCY AMPLIFIER SERVICE

Voltages are given with respect to base connection

Maximum Ratings, *Absolute Values:*

COLLECTOR:		
DC Voltage	25 max.	volts
DC Current	8 max.	ma
Dissipation	50 max.	mw
EMITTER:		
DC Current	-8 max.	ma
AMBIENT TEMPERATURE	50 max.	°C

Characteristics at Ambient Temperature of 25°C:

With input circuit between base connection and emitter, and output circuit between collector and emitter

Collector:		
DC Voltage	6	volts
DC Current	10 ▲▲	μamp
DC Emitter Current●	-1	ma
DC Base-Connection Current	25	μamp
Current Amplification Factor (Approx.):		
Between Emitter and Collector	0.98	
Between Base Connection and Collector	40	
Power Gain#	40	db

▲▲ With collector voltage of 12 volts and emitter current of 0 milliamperes.

● Obtained by adjusting a variable resistor in series with the power supply to give the desired current.

\# With collector load resistance of 30000 ohms, signal-source impedance of 500 ohms, and signal frequency of 5000 cycles per second.

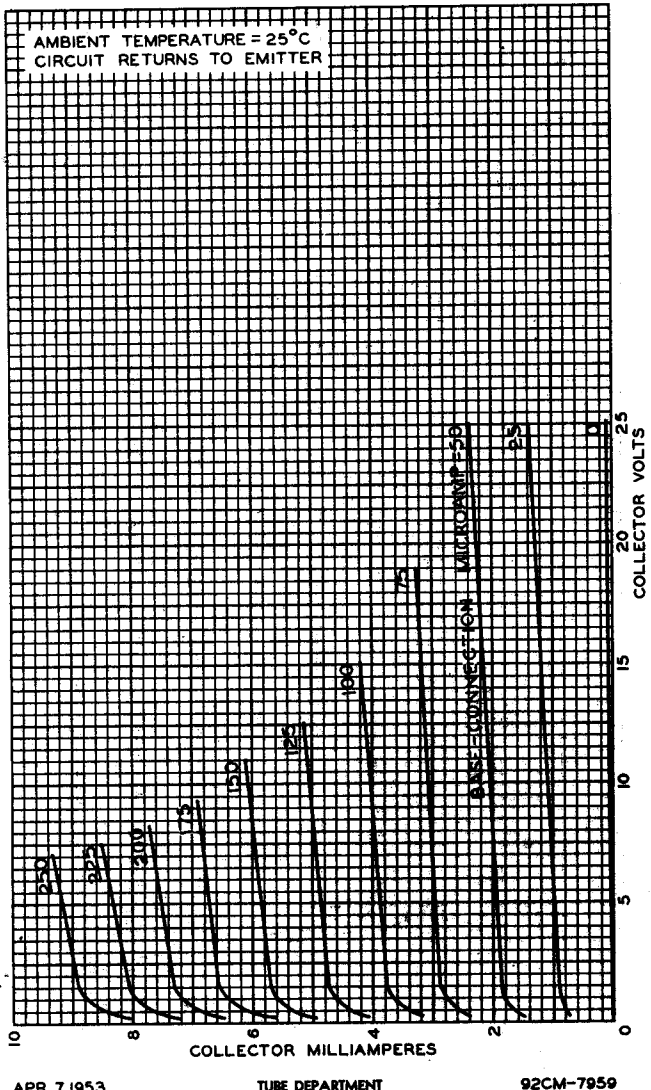
The 2N35 should not be inserted into or withdrawn from its socket with the power "on" because high transient currents may cause permanent damage to the transistor.

OUTLINE DIMENSIONS and TERMINAL CONNECTIONS for Type 2N35 are the same as those shown for Type 2N34

RCA

2N35

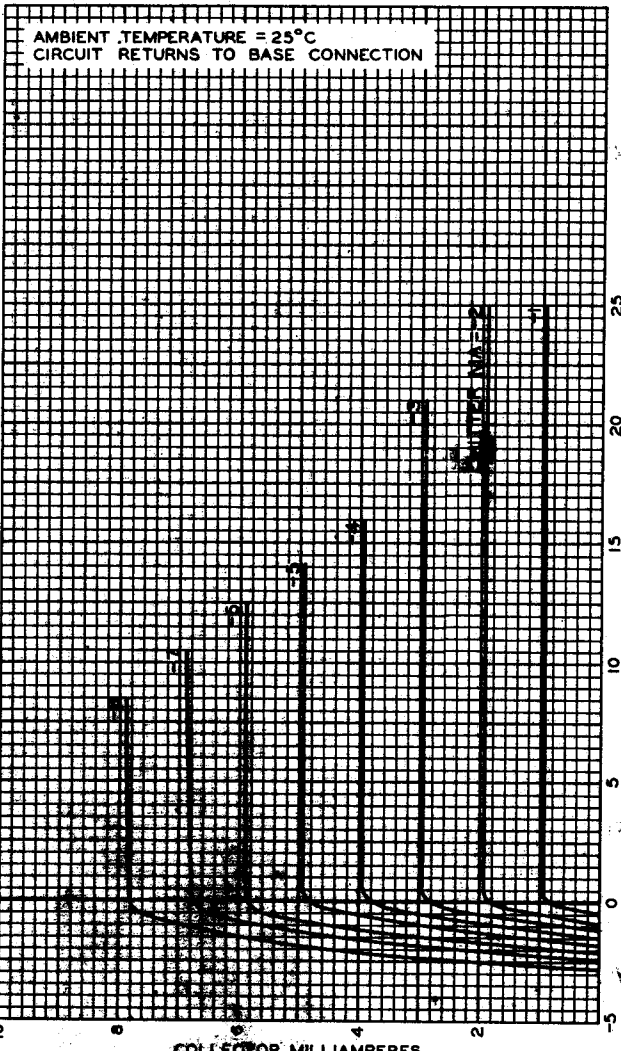
AVERAGE COLLECTOR CHARACTERISTICS



2N35

2N35

AVERAGE COLLECTOR CHARACTERISTICS



APR. 7, 1953

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7960