RAYTHEON

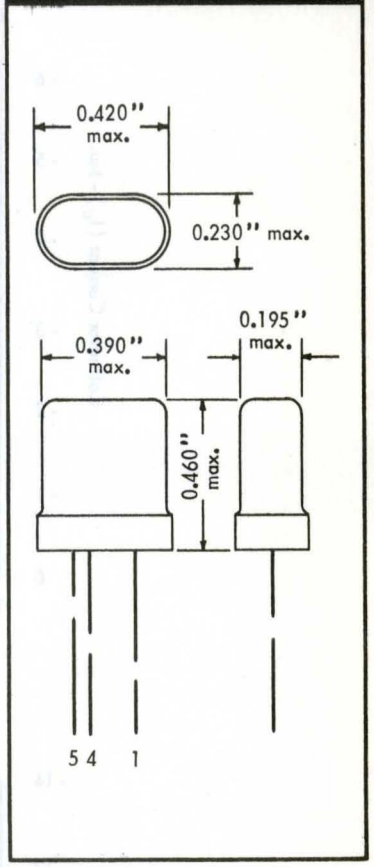
TECHNICAL INFORMATION

GERMANIUM TRANSISTOR

Excellence in Electronics

TYPE 2N65

The 2N65 is a hermetically sealed PNP junction transistor intended primarily for use in audio or low radio frequency applications. The tinned flexible leads may be soldered or welded directly to the terminals of circuit components without the use of sockets. Standard inline subminiature sockets may be used by cutting the leads to a suitable length.



MECHANICAL DATA

CASE: Metal and Glass

BASE: None (0.016" tinned flexible leads. Length: 1.5" min. Spacing: Leads 1-4 0.144" center-to-center; Other Leads 0.048" center-to-center)

TERMINAL CONNECTIONS:

Lead 1 Collector
Lead 4 Base
Lead 5 Emitter

MOUNTING POSITION: Any

ELECTRICAL DATA

RATINGS - ABSOLUTE MAXIMUM VALUES:

Collector Voltage ($\hat{V}c$)	-12	volts
Peak Collector Voltage (Vc) ♦ ⊕	-24	volts
Collector Current	-10	ma.
Collector Dissipation ★		
Emitter Current	10	ma.
Ambient Temperature ■	85	°C

AVERAGE CHARACTERISTICS: (at 27°C)

Collector Voltage	-6	volts
Emitter Current	1.0	ma.
Collector Resistance	2.0	meg.
Base Resistance	1500	ohms
Emitter Resistance	25	ohms
Base Current Amplification Factor	90	
Cut-off Current (approx.)	6	μa.
Noise Factor (max.) ●	20	db

AVERAGE CHARACTERISTICS - COMMON EMITTER: (at 27°C)

Collector Voltage	-1.5	-6 volts
Emitter Current	0.5	1.0 ma.
Input Resistance	4300	2700 ohms
Load Resistance	20,000	20,000 ohms
Power Gain (Matched Input)	40	42 db

AVERAGE CHARACTERISTICS - COMMON COLLECTOR: (at 27°C)

Collector Voltage	-6 volts
Emitter Current	1.0 ma.
Input Resistance ▲	1.0 meg.
Load Resistance	20,000 ohms
Power Gain (Matched Input)	16 db

AVERAGE CHARACTERISTICS - COMMON BASE: (at 27°C)

Collector Voltage	-6 volts
Emitter Current	1.0 ma.
Input Resistance	110 ohms
Load Resistance	0.1 meg.
Power Gain (Matched Input)	30 db.

■ *This is the maximum operating temperature recommended, However, characteristic damage will not result from occasional exposures to storage temperatures up to 100° C.*

● *Measured under conditions for grounded emitter operation at Vcb = 2.5 volts for 1 cycle bandwidth at 1000 cycles.*

▲ *Higher input impedances, without appreciable loss in gain, can be achieved by operating at lowered collector current.*

★ *This is a function of maximum ambient temperature (TA) expected. It is approximately equal to 1.7 (85° C - TA) milliwatts.*

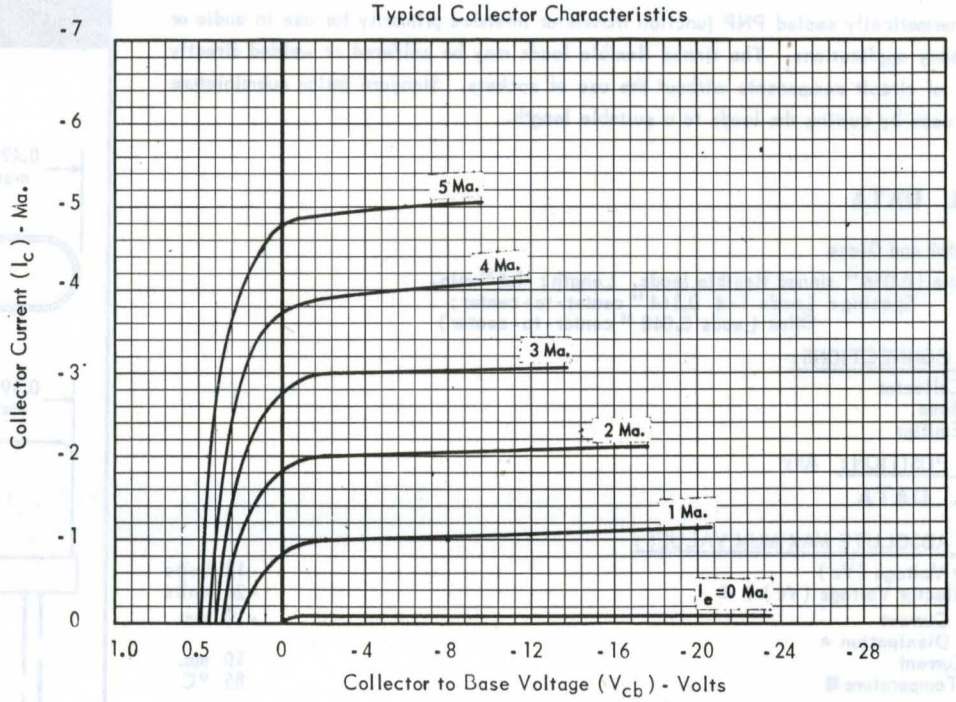
♦ *Collector voltage Vce at which Ic rises to 2 ma. in common emitter circuit with base lead connected directly to emitter lead. Ambient temperature = 25° C.*

⊕ *In circuits stabilized for Ic or Ie and which do not have critical distortion requirements, absolute maximum peak voltage is 45 volts.*

Tentative Data

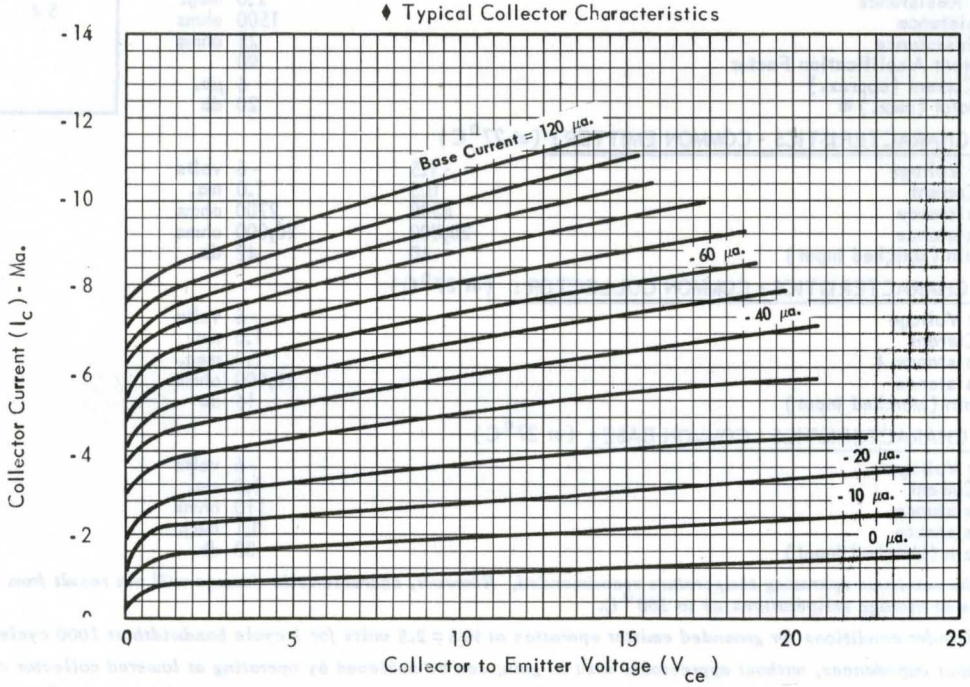
GROUNDED BASE

Typical Collector Characteristics



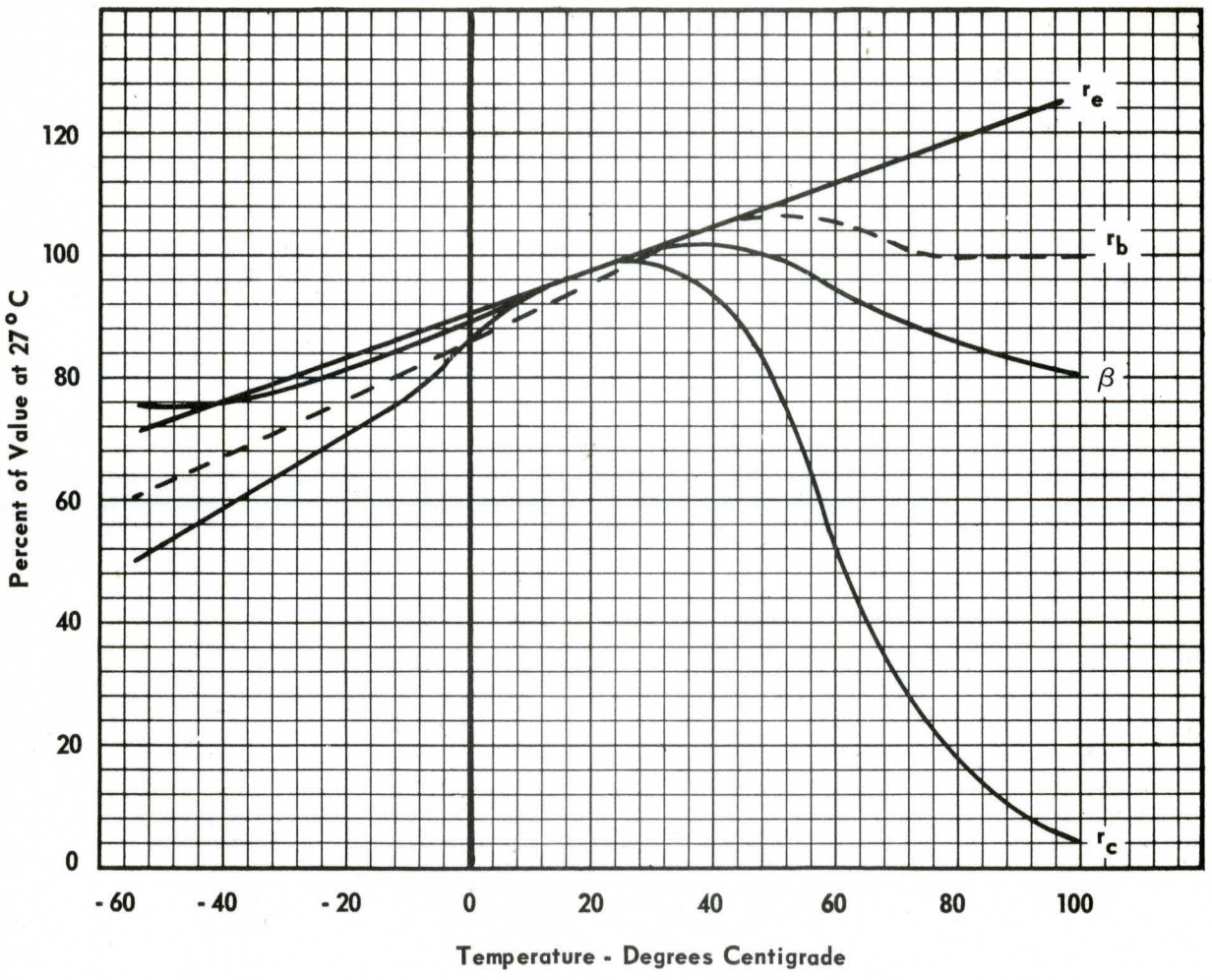
GROUNDED EMITTER

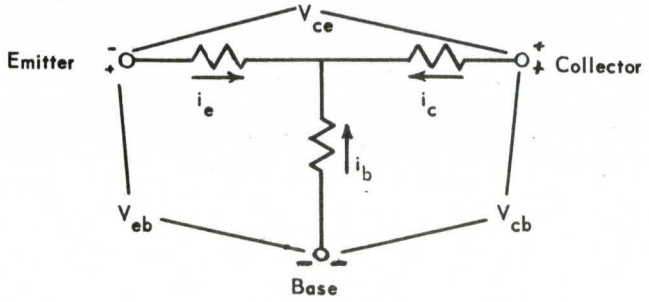
♦ Typical Collector Characteristics



♦ *This family is a function of 1-α and thus changes appreciably with small changes in α.*

TYPICAL CHARACTERISTICS AS A FUNCTION OF JUNCTION TEMPERATURE





Arrows refer to positive electrode current flow.