

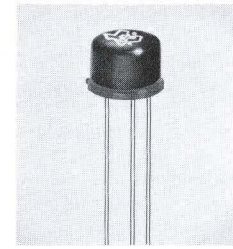


N-P-N GROWN JUNCTION SILICON TRANSISTOR

TYPE 2N335  
BULLETIN NO. DL-S 1038, MARCH, 1959  
REPLACES BULLETIN NO. DL-S 894, MARCH, 1958

Beta From 36 to 90

Specifically designed for high gain at high temperatures



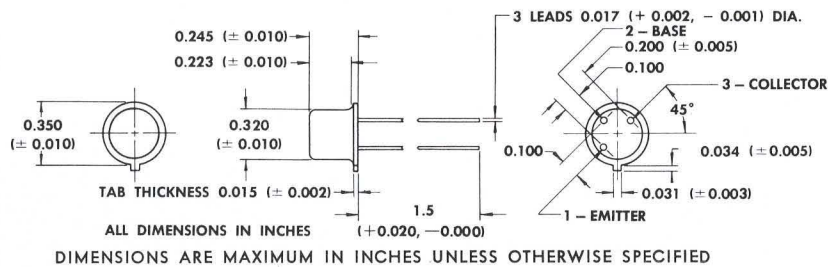
qualification testing

All units are heat cycled ten times from -65°C to +175°C. The units are hermetically sealed. All units are completely tested for design characteristics and undergo a rigorous tumble test to check for mechanical reliability. These units are designed to meet the requirements of MIL-T-19500/37.

mechanical data

Welded case with glass-to-metal hermetic seal between case and leads. Unit weight is approximately 1 gram. These units meet JEDEC outline TO-5 and E3-44 base dimensions.

ALL CONNECTIONS INSULATED FROM CASE



absolute maximum ratings at 25°C ambient [except where advanced temperatures are indicated]

Collector Voltage Referred to Base	45 V
Emitter Voltage Referred to Base	1 V
Collector Current	25 mA
Emitter Current	-25 mA
Device Dissipation	150 mW
at 100°C	100 mW
at 150°C	50 mW

junction temperature

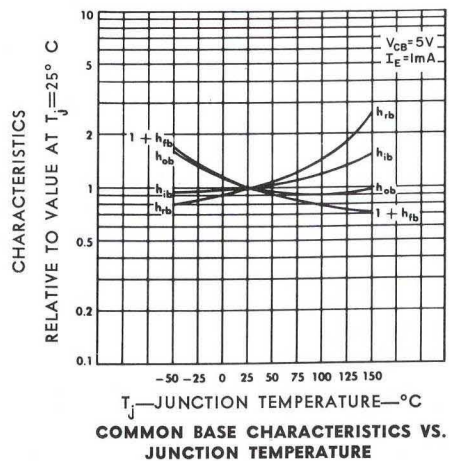
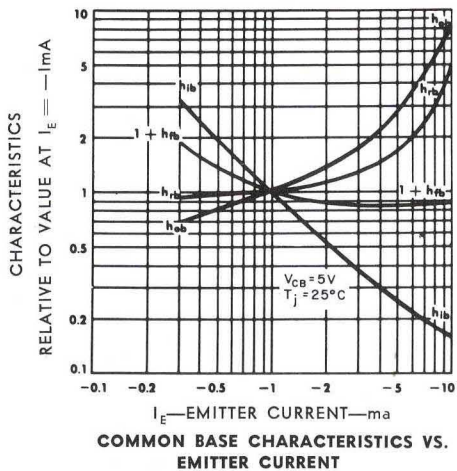
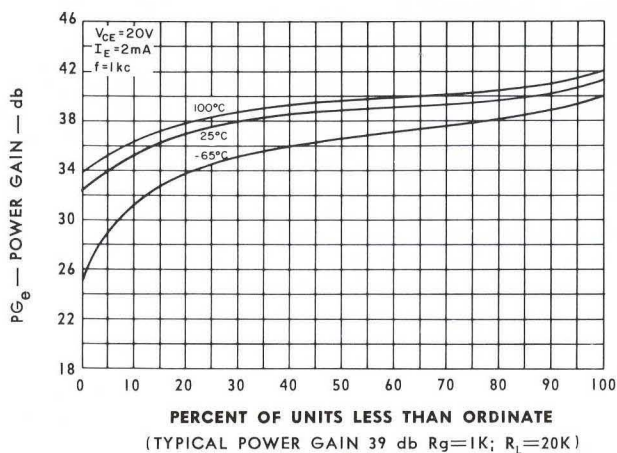
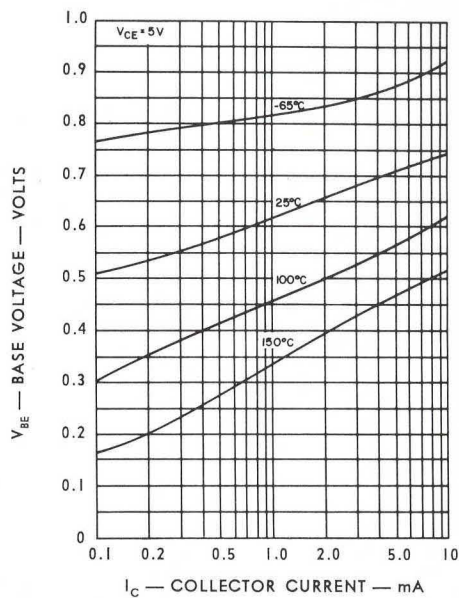
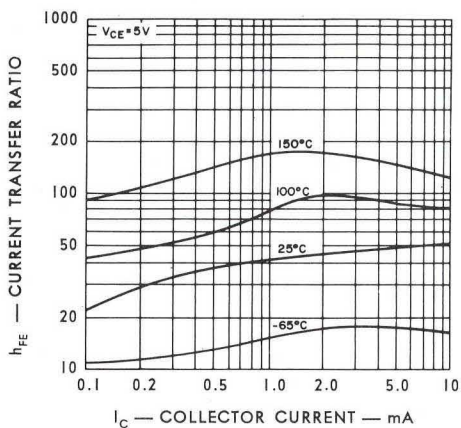
Maximum Range . . . . . -65°C to +175°C

common base design characteristics at T<sub>j</sub> = 25°C [except where advanced temperatures are indicated]

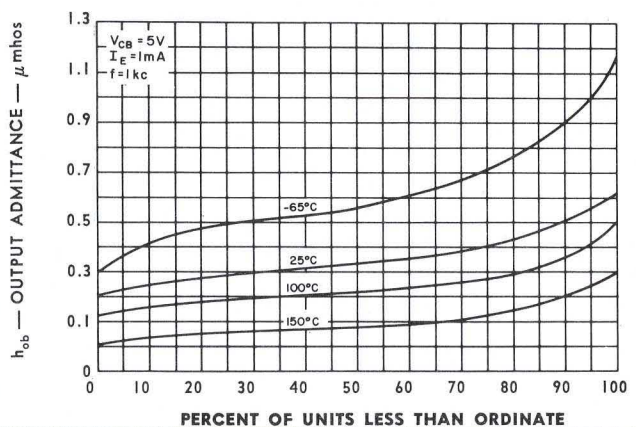
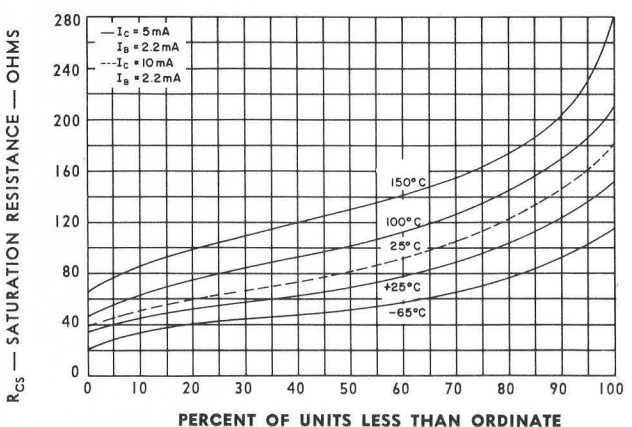
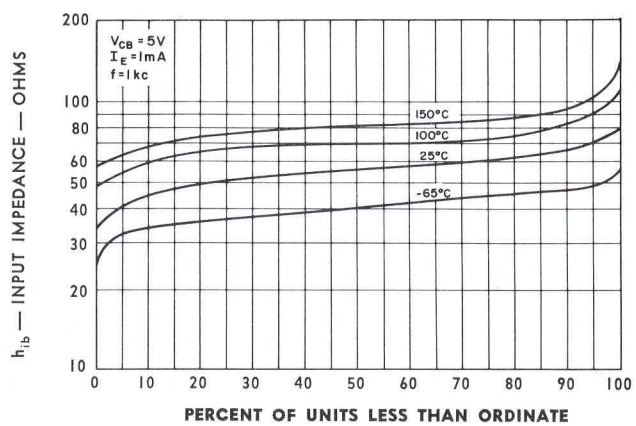
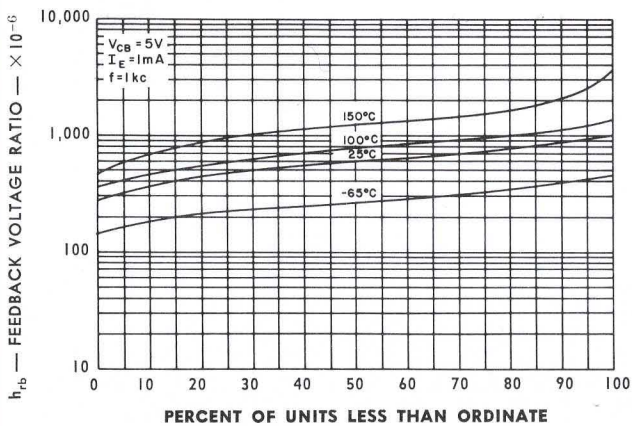
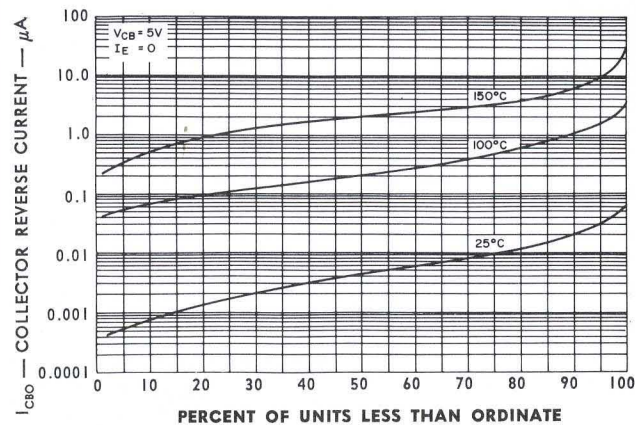
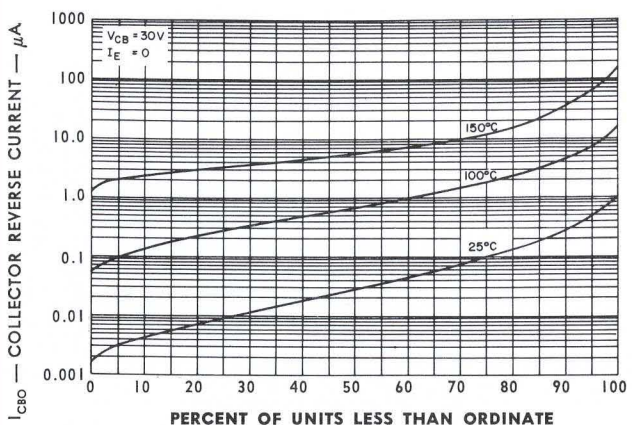
	test conditions	min.	design center	max.	unit
BV <sub>CB0</sub>	Collector Breakdown Voltage I <sub>C</sub> = 50 μA I <sub>E</sub> = 0	45	—	—	Volt
I <sub>CB0</sub>	Collector Cutoff Current V <sub>CB</sub> = 30V I <sub>E</sub> = 0	—	—	2	μA
		—	—	10	μA
		—	—	50	μA
h <sub>ib</sub> †	Input Impedance V <sub>CB</sub> = 5V I <sub>E</sub> = -1 mA	30	55	80	Ohm
		0.0	0.3	1.2	μmho
h <sub>ob</sub> †	Output Admittance V <sub>CB</sub> = 5V I <sub>E</sub> = -1 mA	0.0	600	1000	X10 <sup>-6</sup>
h <sub>rb</sub> †	Feedback Voltage Ratio V <sub>CB</sub> = 5V I <sub>E</sub> = -1 mA	-0.9735	-0.98	-0.989	—
h <sub>fb</sub> †	Current Transfer Ratio V <sub>CE</sub> = 5V I <sub>E</sub> = -1 mA	—	20	30	db
NF	Noise Figure* ‡ V <sub>CB</sub> = 5V I <sub>E</sub> = -1 mA	2	11	—	mc
f <sub>αb</sub>	Frequency Cutoff V <sub>CB</sub> = 5V I <sub>E</sub> = -1 mA	—	10	30	μμf
C <sub>ob</sub>	Output Capacitance (1mc) I <sub>B</sub> = 2.2mA I <sub>C</sub> = 5mA	—	70	200	Ohm
R <sub>CS</sub>	Saturation Resistance*	—	—	—	—

\* Common Emitter † f = 1 kc ‡ Conventional Noise—Compared to 1000 ohm resistor, 1000 cps and 1 cycle band width

# TYPICAL CHARACTERISTICS AND PRODUCTION DISTRIBUTIONS



# TYPICAL PRODUCTION DISTRIBUTIONS

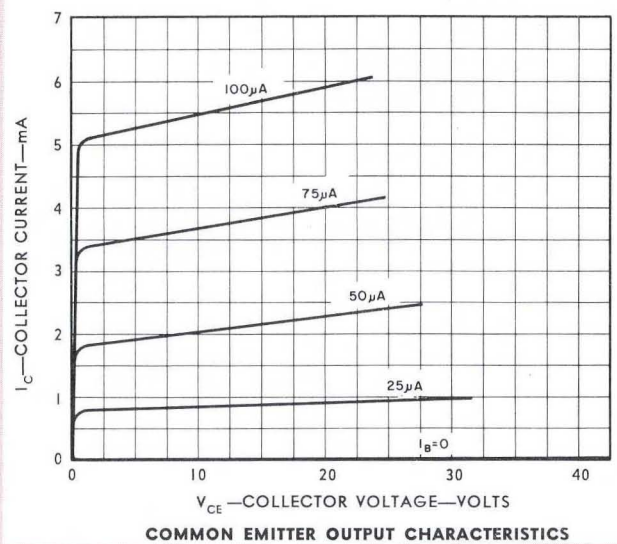
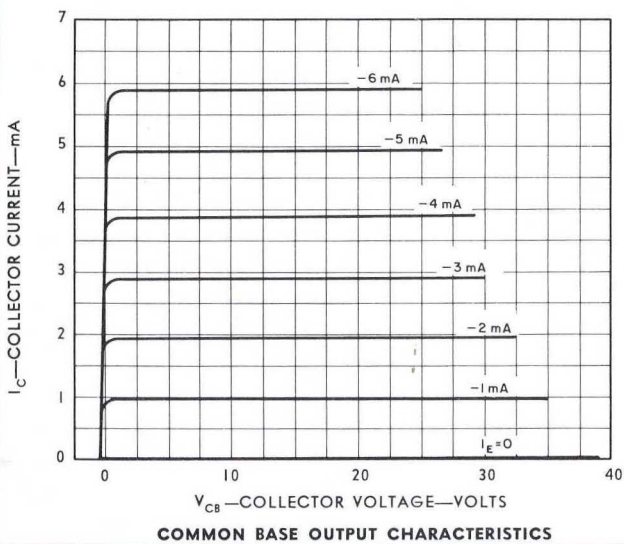
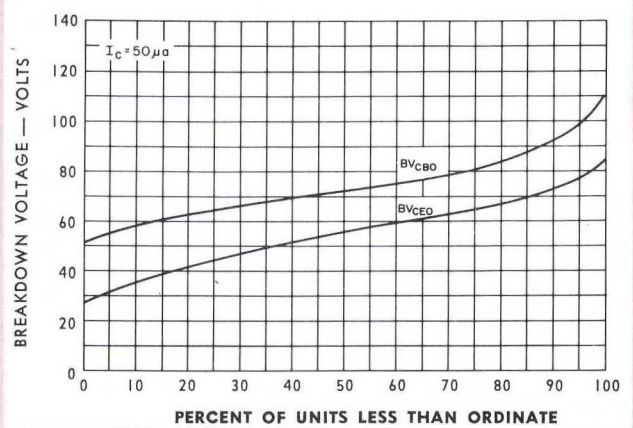
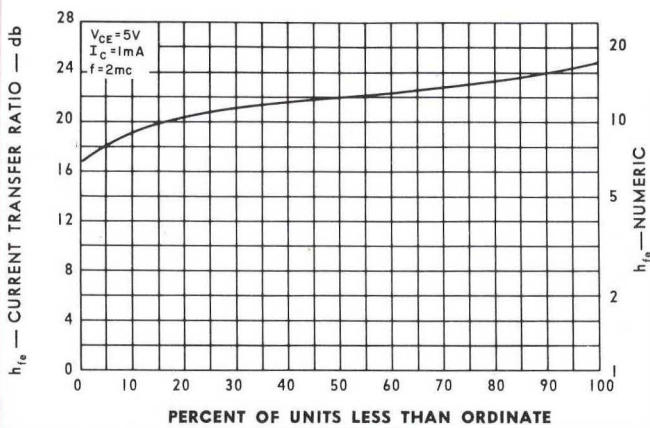
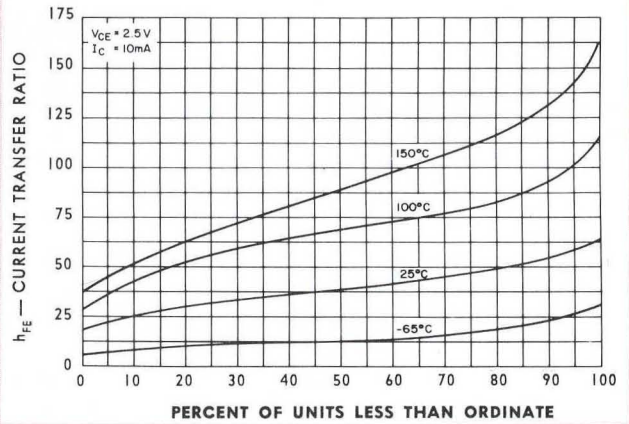
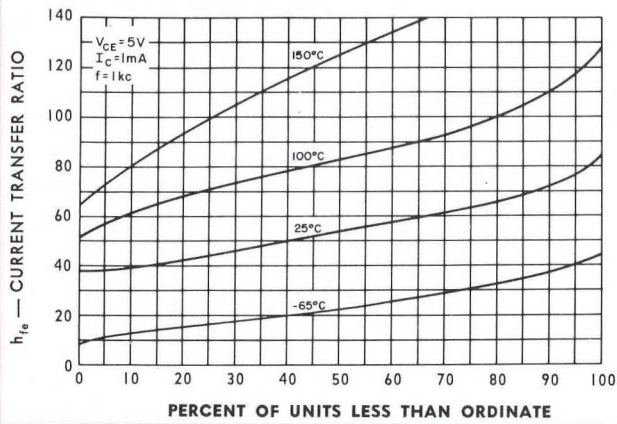


conform exactly to the curves. Hence, these curves should be considered to be typical.



SEMICONDUCTOR-COMPONENTS DIVISION

# TYPICAL CHARACTERISTICS AND PRODUCTION DISTRIBUTIONS



## EXPLANATION OF CURVES:

1. The curves shown are based on extensive data. Individual units or small groups of units may not conform to the curves.
2. All temperatures are ambient except where noted.