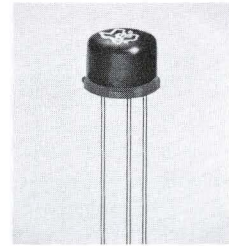




N-P-N GROWN JUNCTION SILICON TRANSISTOR

Beta From 76 to 333

Specifically designed for high gain at high temperatures



TYPE 2N336
BULLETIN NO. DL-S 1039, MARCH, 1959
REPLACES BULLETIN NO. DL-S 895, MARCH, 1958

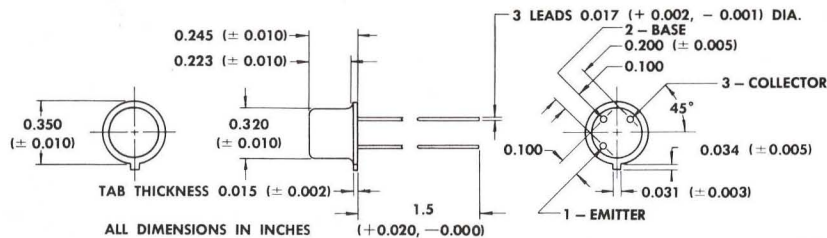
qualification testing

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 A.

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

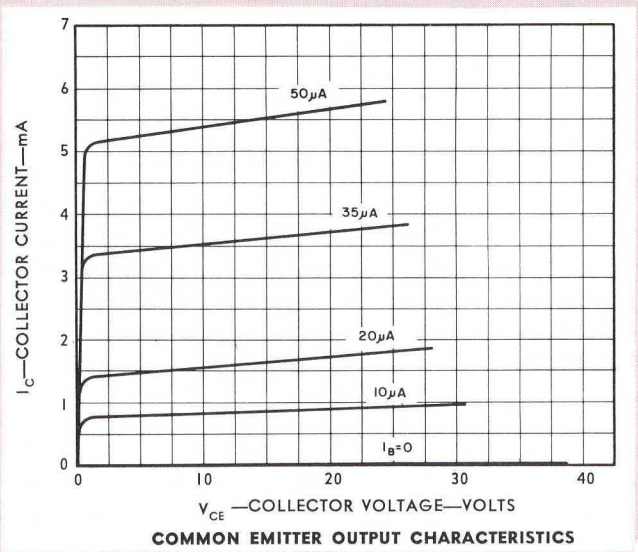
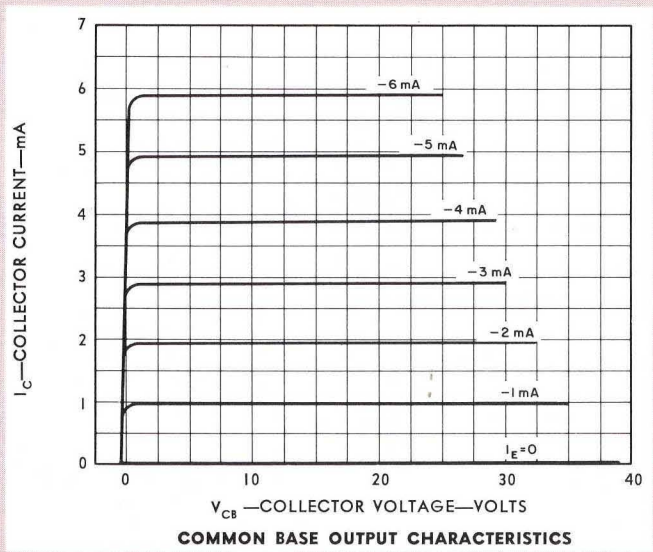
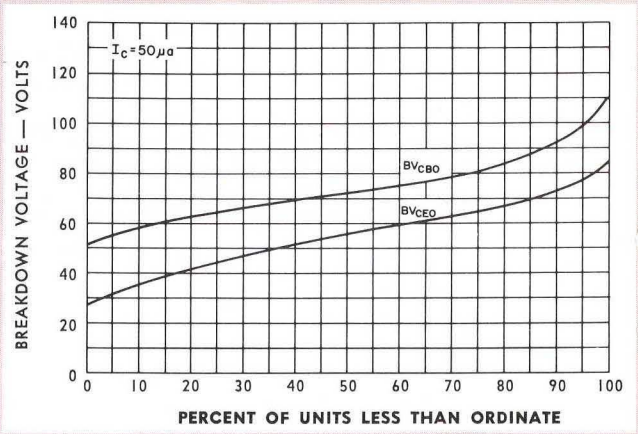
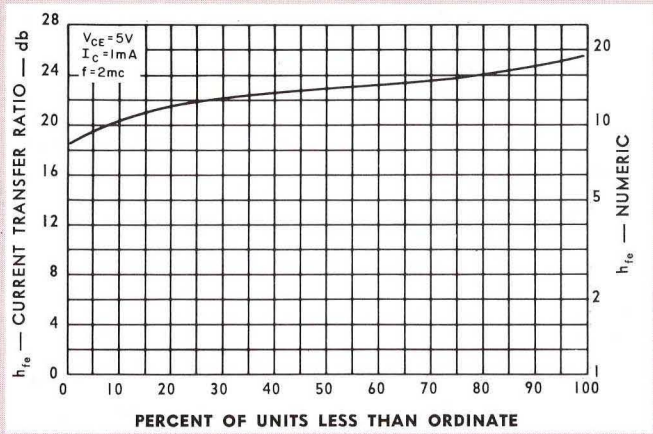
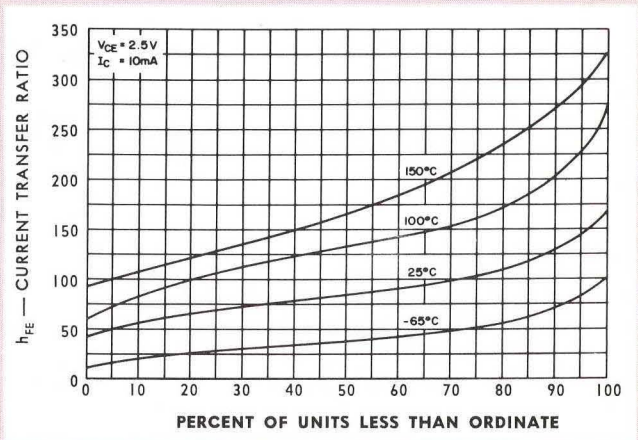
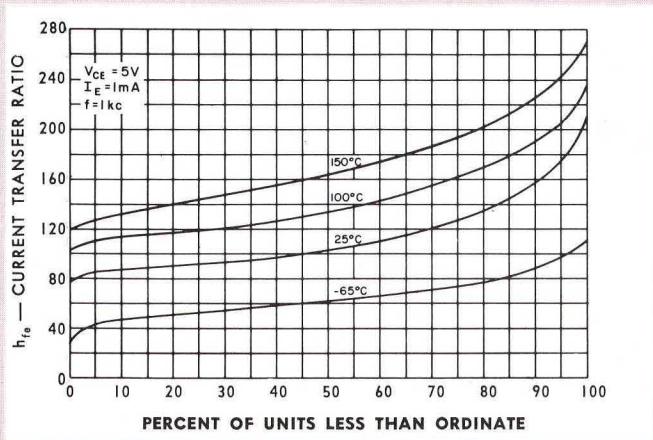
Maximum Range -65°C to +175°C

common base design characteristics at T_j = 25°C [except where advanced temperatures are indicated]

	test conditions	min.	design center	max.	unit	
BV _{CB0}	Collector Breakdown Voltage	I _C = 50 μA	I _E = 0	45	—	Volt
I _{CB0}	Collector Cutoff Current	V _{CB} = 30V	I _E = 0	—	—	μA
	at 100° C	V _{CB} = 5V	I _E = 0	—	—	10 μA
	at 150° C	V _{CB} = 5V	I _E = 0	—	—	50 μA
h _{ib} †	Input Impedance	V _{CB} = 5V	I _E = -1mA	30	55	80 Ohm
h _{ob} †	Output Admittance	V _{CB} = 5V	I _E = -1mA	0.0	0.25	1.2 μmho
h _{rb} †	Feedback Voltage Ratio	V _{CB} = 5V	I _E = -1mA	0.0	700	1000 X10 ⁻⁶
h _{fb} †	Current Transfer Ratio	V _{CB} = 5V	I _E = -1mA	-0.987	-0.99	-0.997
NF	Noise Figure* ‡	V _{CE} = 5V	I _E = -1mA	—	20	30 db
f _{αb}	Frequency Cutoff	V _{CB} = 5V	I _E = -1mA	2	13	— mc
C _{ob}	Output Capacitance (1mc)	V _{CB} = 5V	I _E = -1mA	—	10	30 μμf
R _{CS}	Saturation Resistance*	I _B = 2.2mA	I _C = 5mA	—	70	200 Ohm

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

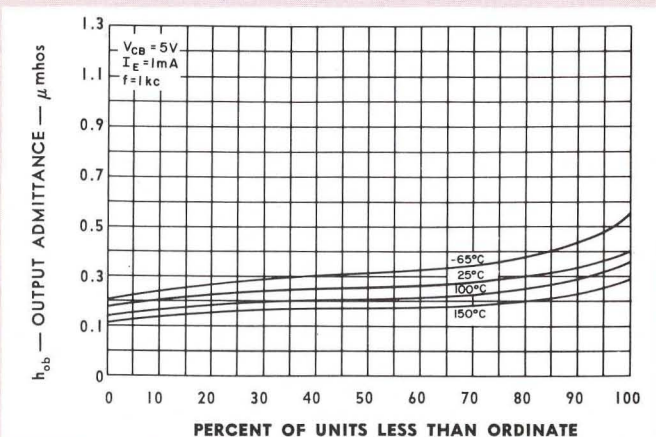
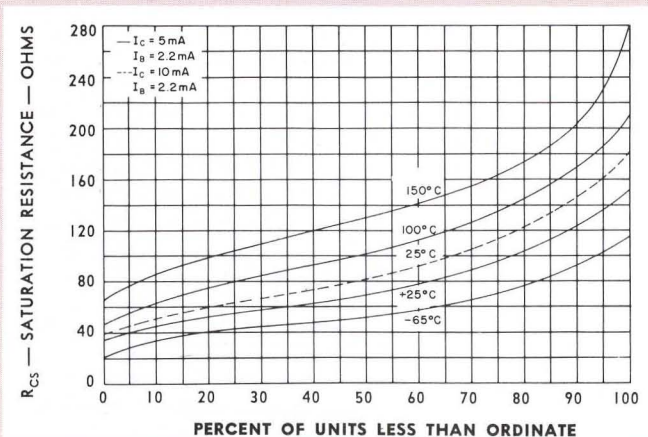
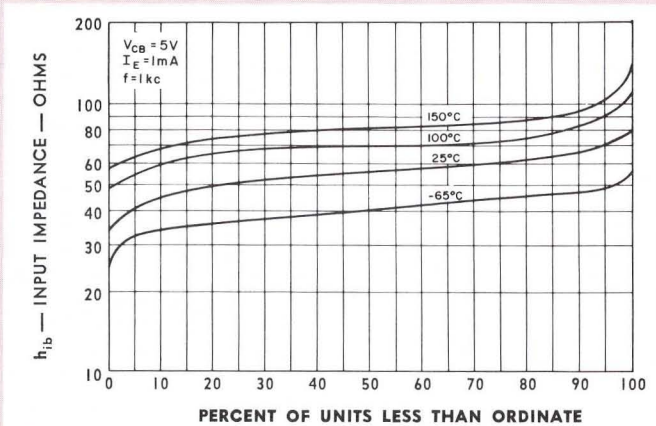
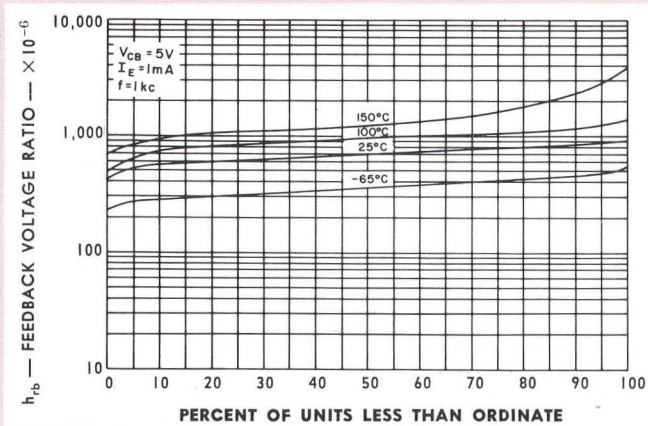
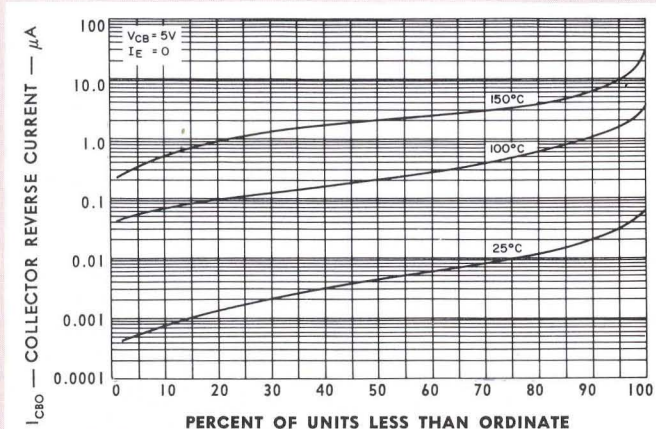
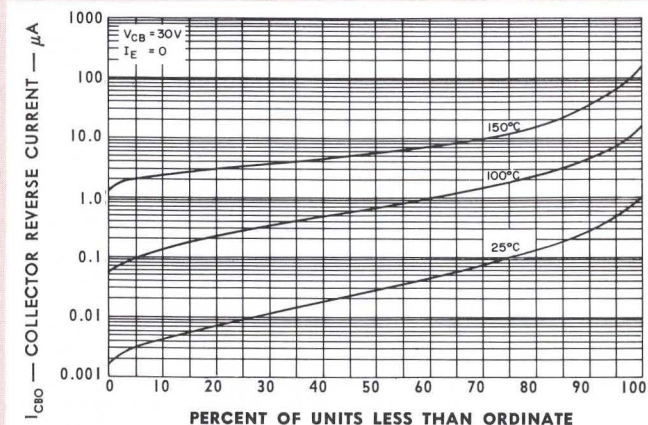
TYPICAL CHARACTERISTICS AND PRODUCTION DISTRIBUTIONS



EXPLANATION OF CURVES:

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

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

