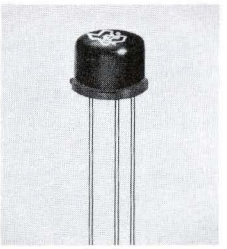
TYPE 2N332

N-P-N GROWN JUNCTION SILICON TRANSISTOR

TYPE 2N332
BULLETIN NO. DL-S 1035, MARCH, 1959
REPLACES BULLETIN NO. DL-S 891, MARCH, 1958



Beta From 9 to 20

Specifically designed for high gain at high temperatures

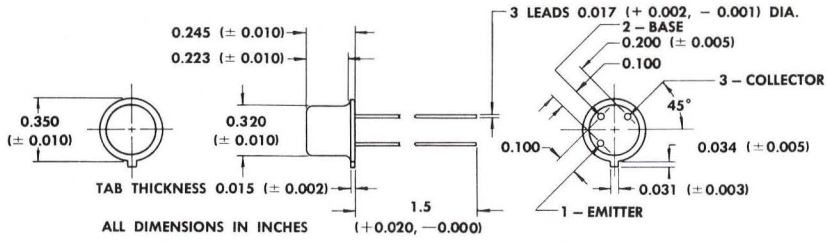
qualification testing

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 $T_j = 25°C$ [except where advanced temperatures are indicated]

		test conditions		min.	design center	max.	unit
BV_{CBO}	Collector Breakdown Voltage	$I_C = 50\mu A$	$I_E = 0$	45	—	—	Volt
I_{CBO}	Collector Cutoff Current }	$V_{CB} = 30V$	$I_E = 0$	—	—	2	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	0.5	1.2	μmho
h_{rb} †	Feedback Voltage Ratio	$V_{CB} = 5V$	$I_E = -1mA$	0.0	195	500	$X10^{-6}$
h_{fb} †	Current Transfer Ratio	$V_{CB} = 5V$	$I_E = -1mA$	−0.9	−0.925	−0.953	—
NF	Noise Figure*‡	$V_{CE} = 5V$	$I_E = -1mA$	—	20	30	db
$f\alpha_b$	Frequency Cutoff	$V_{CB} = 5V$	$I_E = -1mA$	1	6	—	mc
C_{ob}	Output Capacitance (1mc)	$V_{CB} = 5V$	$I_E = -1mA$	—	10	30	$\mu\mu f$
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

LICENSED UNDER BELL SYSTEM PATENTS

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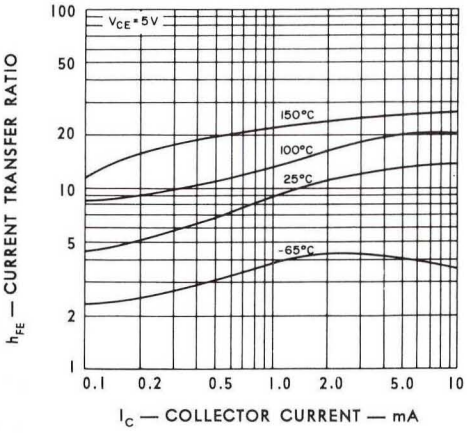
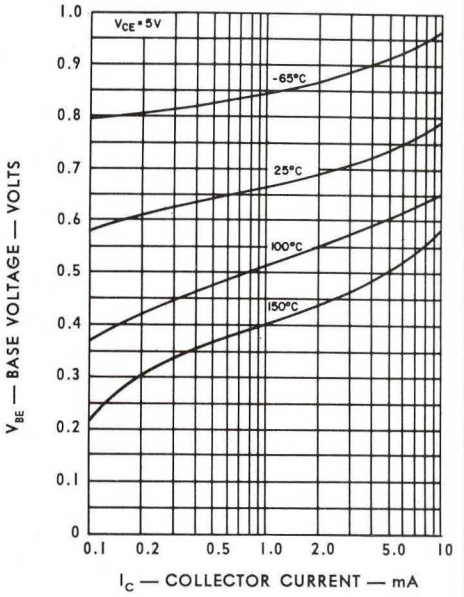
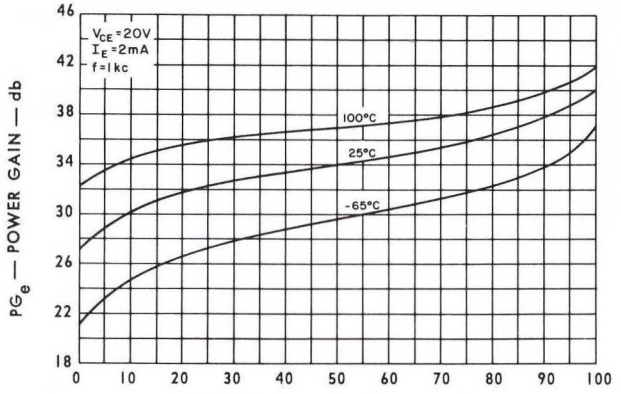
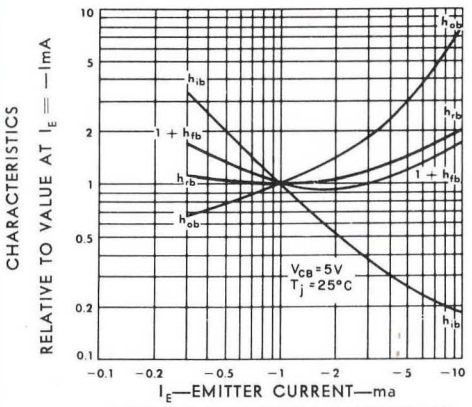
TYPICAL CHARACTERISTICS AND PRODUCTION DISTRIBUTIONS



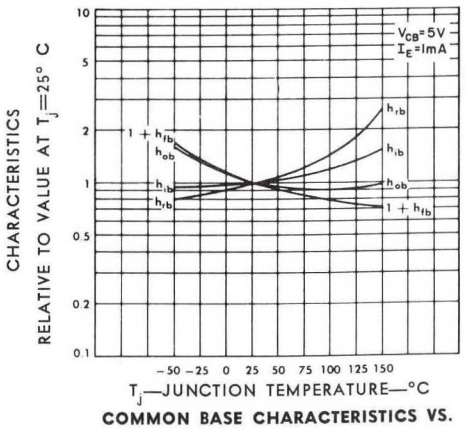




(TYPICAL POWER GAIN 34 db Rg=1K; R_L=20K)



COMMON BASE CHARACTERISTICS VS. EMITTER CURRENT



COMMON BASE CHARACTERISTICS VS. JUNCTION TEMPERATURE

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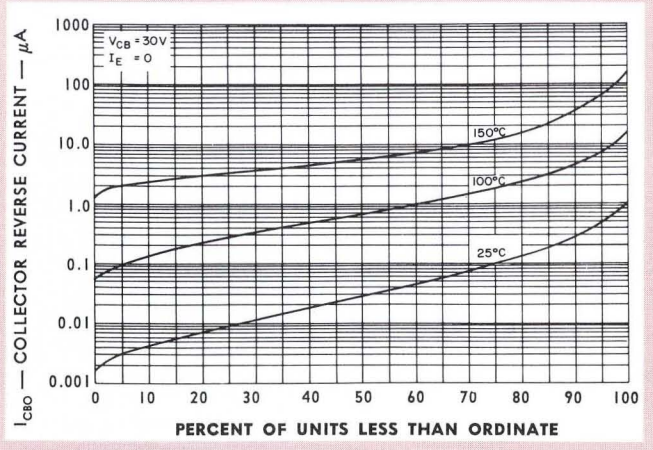
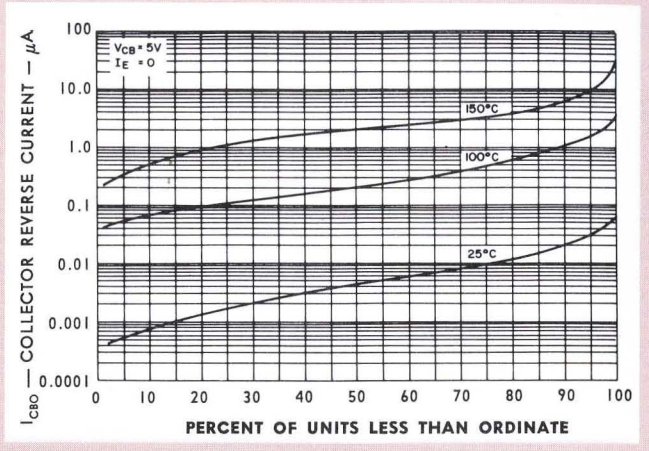
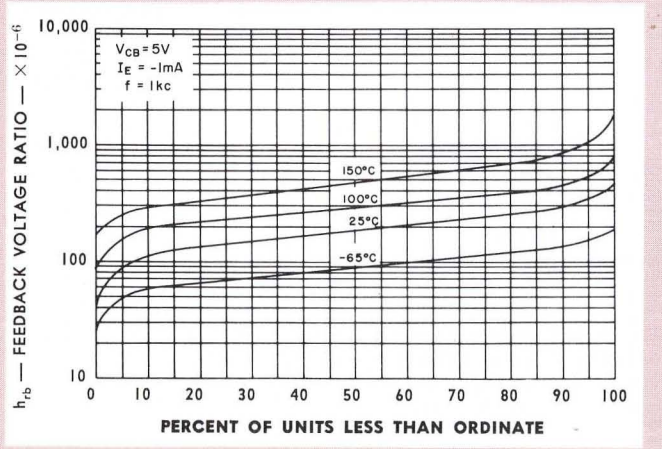
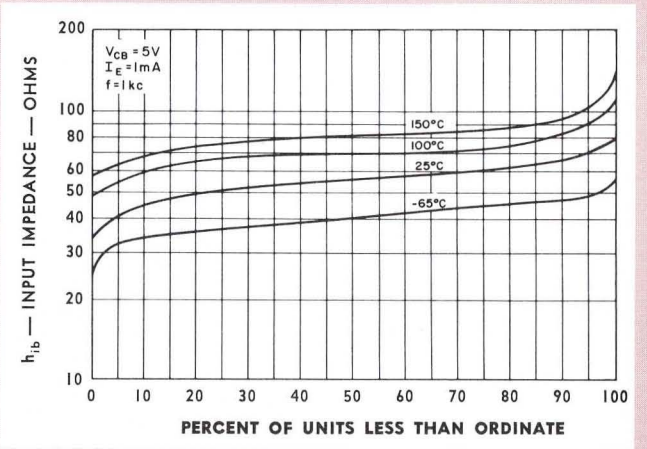
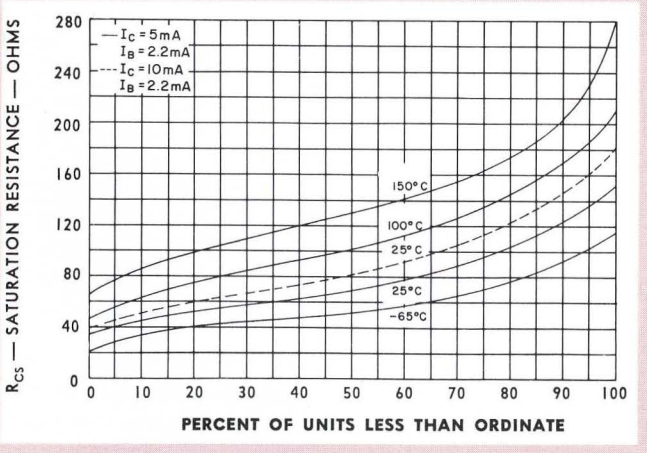
TYPICAL PRODUCTION DISTRIBUTIONS

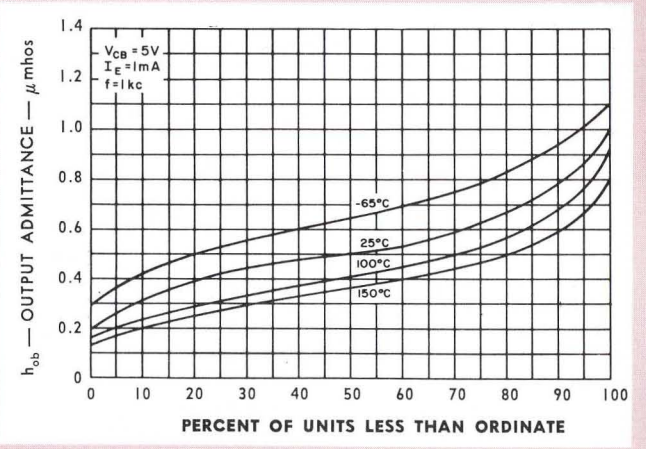












conform exactly to the curves. Hence, these curves should be considered to be typical.

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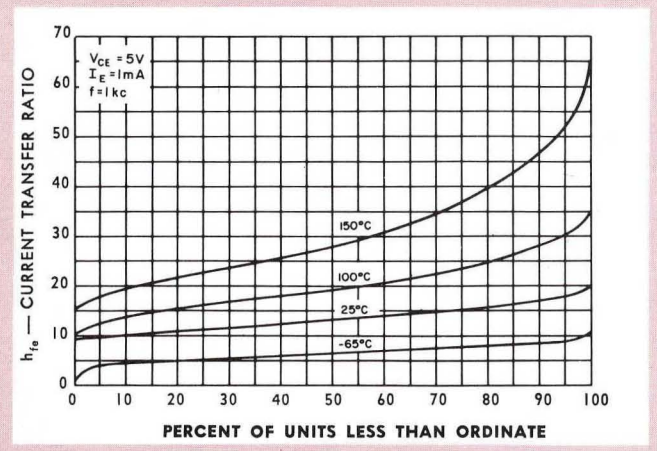
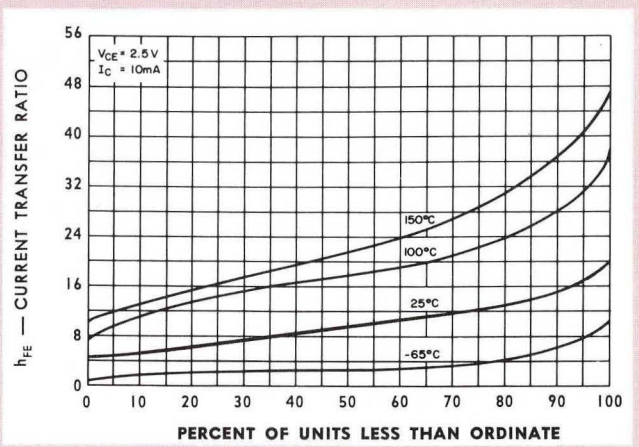
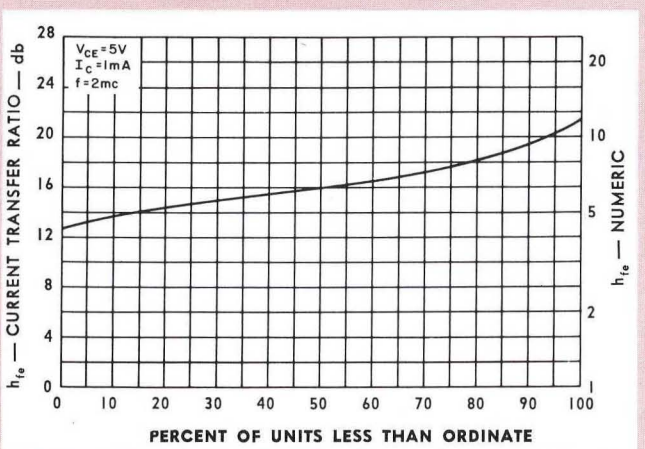
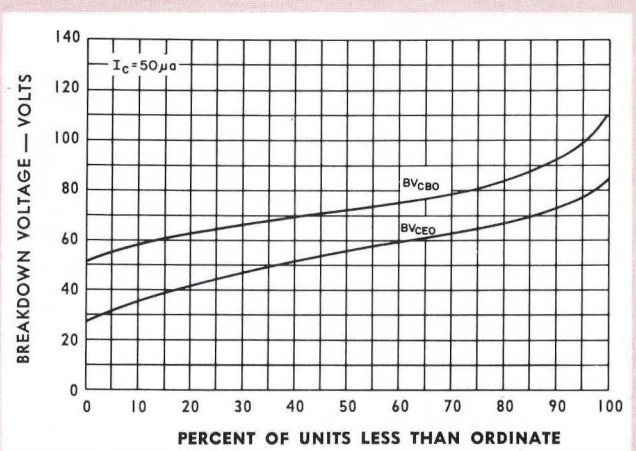
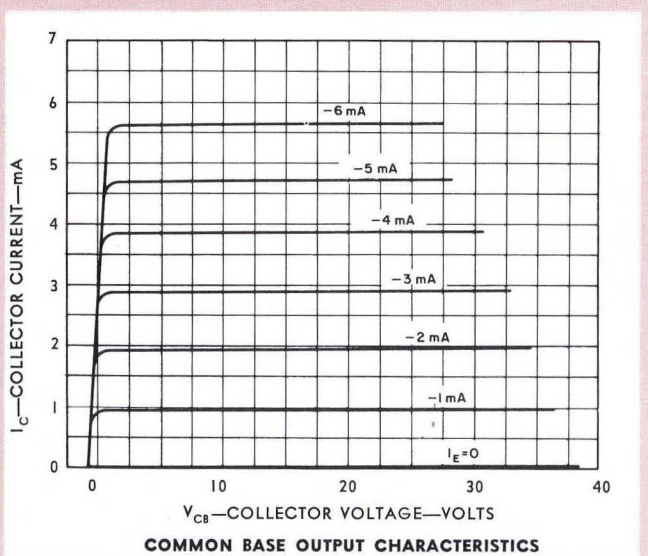
TYPICAL CHARACTERISTICS AND PRODUCTION DISTRIBUTIONS

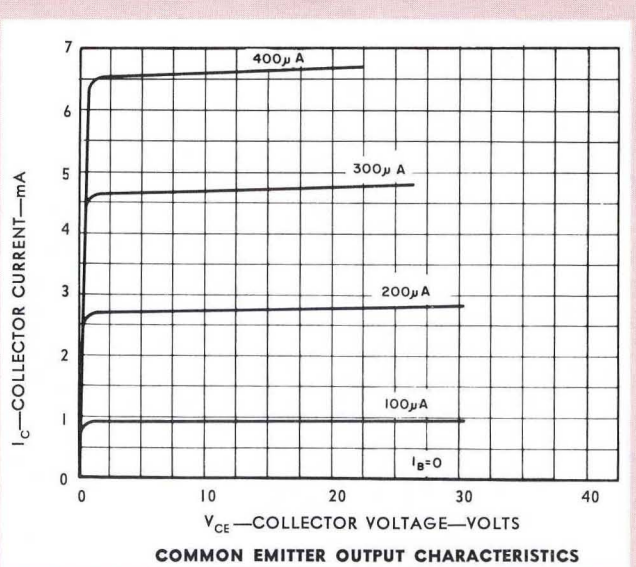












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EXPLANATION OF CURVES:

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