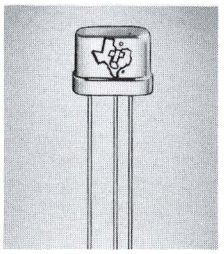
TYPES 2N1154/951, 2N1155/952, 2N1156/953
N-P-N GROWN JUNCTION SILICON TRANSISTOR

TYPES 2N1154/951, 2N1155/952, 2N1156/953
BULLETIN NO. DL-S 1085 JULY 1959
REPLACES BULLETIN NOS. DL-S563, DL-S 564, DL-S 565 AUGUST 1956

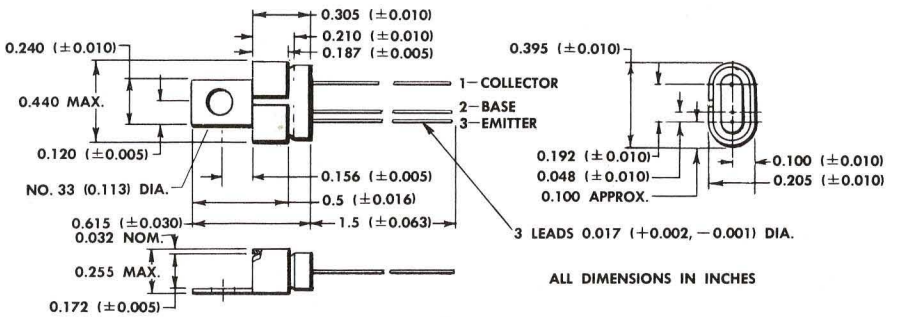
Minimum h_{fe} of 9
Designed for audio or servo amplifier stages requiring medium power output



All units are completely tested for electrical design characteristics shown on this data sheet. To insure maximum reliability, units are temperature cycled ten times between −65°C and +175°C. Rigorous tumble testing is conducted on every unit.

mechanical data

Metal case with glass-to-metal hermetic seal between case and leads. Approximate weight is 2 grams.



absolute maximum ratings at 25°C mounting clamp temperature
[except where advanced temperatures are indicated]

	2N1154/951	2N1155/952	2N1156/953
Collector Voltage Referred to Base	50v	80v	120v
Collector Current	60ma	50ma	40ma
Collector Dissipation	750mw	750mw	750mw
at 100°C	300mw	300mw	300mw
at 125°C	150 mw	150mw	150mw

junction temperature

Maximum Range . . . . . −55°C to +150 °C

typical design characteristics at T_j = 25°C

PARAMETER		TEST CONDITIONS	2N1154/951 min.	2N1154/951 max.	2N1155/952 min.	2N1155/952 max.	2N1156/953 min.	2N1156/953 max.	UNIT
I_{CBO}	Collector Cutoff Current	V_{CB} = 50v I_E = 0		5					μa
		V_{CB} = 80v I_E = 0				6			μa
		V_{CB} = 120v I_E = 0						8	μa
R_{CS}	Collector Saturation Resistance	I_C = 20ma I_B = 2.2ma		300					ohm
		I_C = 15ma I_B = 2.2ma				350			ohm
		I_C = 10ma I_B = 2.2ma						400	ohm
V_{BE}	Bias Voltage	I_C = 20ma I_B = 2.2ma		1					v
		I_C = 15ma I_B = 2.2ma				1			v
		I_C = 10ma I_B = 2.2ma						1	v
h_{ib}	Input Impedance	V_{CB} = 10v I_E = −5ma		30		30		30	ohm
h_{ob}	Output Admittance	V_{CB} = 10v I_E = −5ma		2		2		2	μ mho
h_{rb}	Feedback Voltage Ratio	V_{CB} = 10v I_E = −5ma		300		300		300	X10^{-6}
h_{fb}	Current Transfer Ratio	V_{CB} = 10v I_E = −5ma	−0.9	−1	−0.9	−1	−0.9	−1	—
PG_e	Power Gain*	See Diagram	30		30		30		db

* As measured in the circuit shown on next page.

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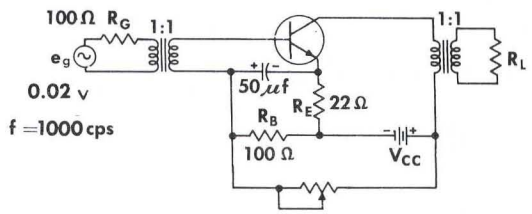
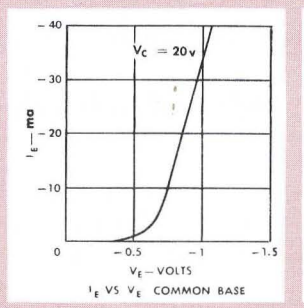
TYPES 2N1154/951, 2N1155/952, 2N1156/953

TYPICAL CHARACTERISTICS

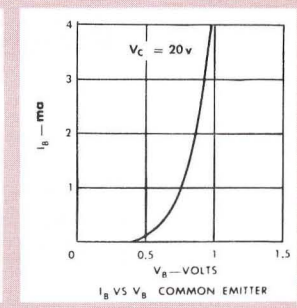
test circuit



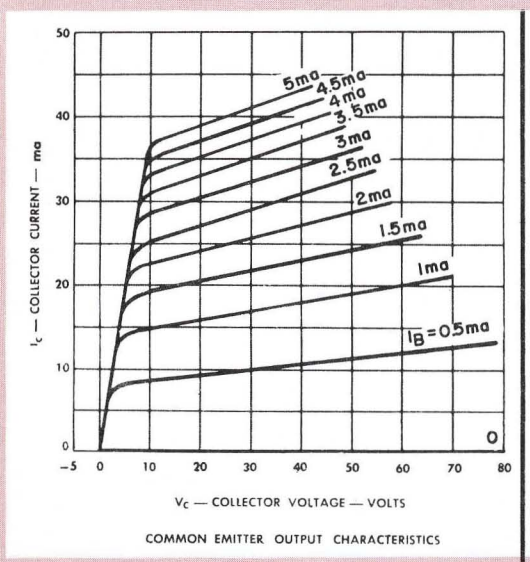
	2N1154/951	2N1155/952	2N1156/953
V_{CE} (volts)	28	45	67.5
I_C (ma)	20	15	10
R_L (ohm)	1K	2K	4K



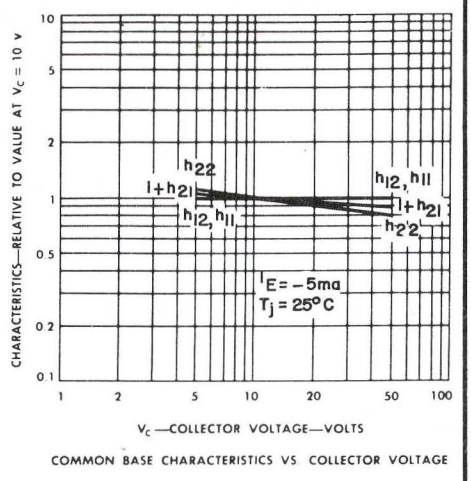
I_E VS V_E COMMON BASE



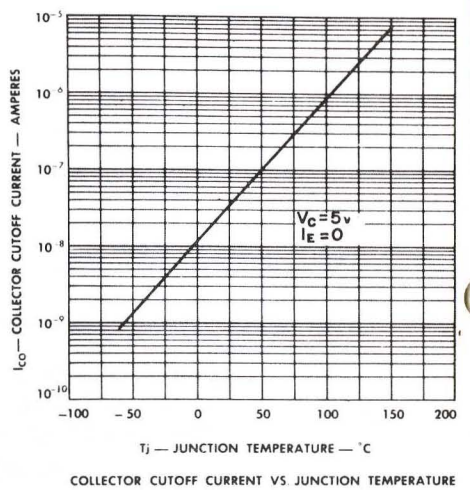
I_B VS V_B COMMON EMITTER



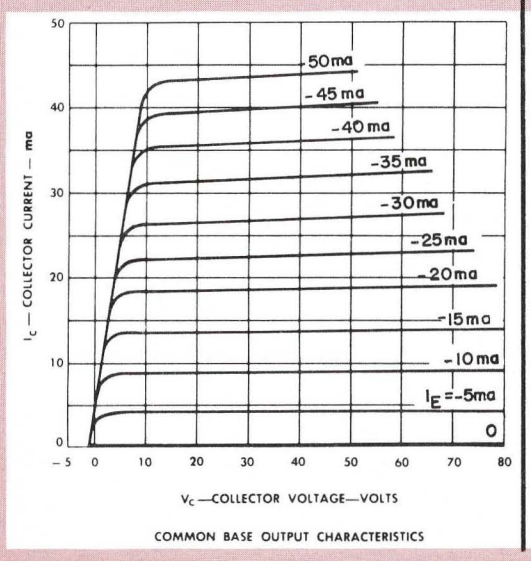
COMMON EMITTER OUTPUT CHARACTERISTICS



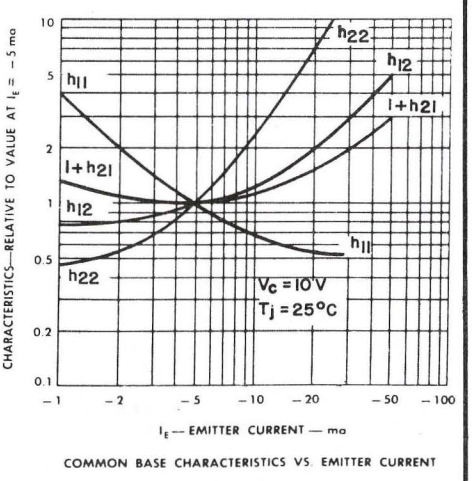
COMMON BASE CHARACTERISTICS VS. COLLECTOR VOLTAGE



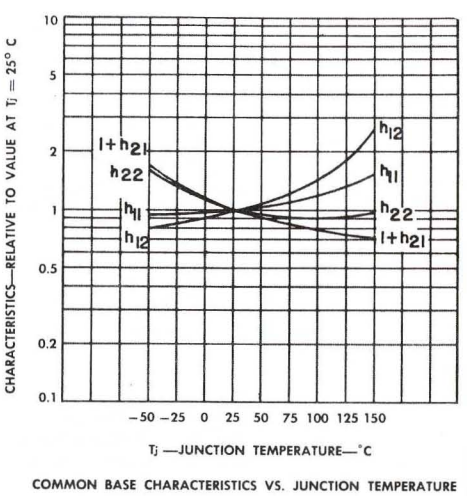
COLLECTOR CUTOFF CURRENT VS. JUNCTION TEMPERATURE



COMMON BASE OUTPUT CHARACTERISTICS



COMMON BASE CHARACTERISTICS VS. EMITTER CURRENT



COMMON BASE CHARACTERISTICS VS. JUNCTION TEMPERATURE

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