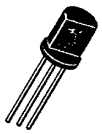
2N5365, 2N5366

Silicon Transistors



TO-98

This GE/RCA series of economy transistors are planar epitaxial passivated PNP silicon devices. These units feature low collector saturation voltage, good current gain linearity over a wide collector current range, high gain-bandwidth product, and low noise. These characteristics make these units excellent for use in general purpose consumer and industrial amplifier and switching applications. These types are supplied in JEDEC TO-98 package.

Devices in TO-98 package are supplied with and without seating flange (see Dimensional Outline).

MAXIMUM RATINGS, *Absolute-Maximum Values:*

COLLECTOR TO EMITTER VOLTAGE (V_{CEO})	40 V
COLLECTOR TO BASE VOLTAGE (V_{CBO})	4 V
EMITTER TO BASE VOLTAGE (V_{EBO})	40 V
CONTINUOUS COLLECTOR CURRENT (I_C)	300 mA
COLLECTOR CURRENT (Pulsed) (I_C	700 mA
TOTAL POWER DISSIPATION ($T_A \leq 25°C$)**	360 mW
TOTAL POWER DISSIPATION ($T_A \leq 55°C$)**	260 mW
OPERATING TEMPERATURE (T_J)	−65 to +125 °C
STORAGE TEMPERATURE (T_{STG})	−65 to +150 °C
LEAD TEMPERATURE, 1/16" ± 1/32" (1.58mm ± 0.8mm) from case at 10s max. (T_L)	+260 °C

* Pulsed conditions: 10μs pulse width, ≤2% duty cycle.

** Derate 3.6mW/°C increase in ambient temperature above 25°C.

File Number **2066**

Signal Transistors

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ELECTRICAL CHARACTERISTICS, At Ambient Temperature (T_A) = 25°C Unless Otherwise Specified

CHARACTERISTICS	SYMBOL	LIMITS						UNITS
		2N5365			2N5366			
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX	
Collector-Emitter Breakdown Voltage (I_C = 10 mA)	$V_{(BR)CEO}$	−40	—	—	−40	—	—	V
Collector Cutoff Current (V_{CB} = −40V)	I_{CBO}	—	—	−100	—	—	−100	nA
(V_{CB} = −40V, T_A = 100°C)		—	—	−10	—	—	−10	μA
Cutoff Current (V_{EB} = −4V)	I_{EBO}	—	—	−10	—	—	−10	μA
DC Forward Current Transfer Ratio (V_{CE} = −10V, I_C = −2mA)	h_{FE}	32	—	—	80	—		—
(V_{CE} = −10, I_C = −50mA)		40	—	120	100	—	300	
(V_{CE} = −5V, I_C = −300mA)		20	—	—	40	—		
Small-Signal Forward Current Transfer Ratio (V_{CE} = −10V, I_C = −2mA, f = 1kHz)	h_{fe}	32	—	180	80	—	450	—
Collector-Emitter Saturation Voltage (I_C = −50mA, I_B = −2.5mA)	$V_{CE(SAT)}$	—	—	−0.25	—	—	−0.25	V
(I_C = −300mA, I_B = −30mA)	$V_{CE(SAT)}$	—	—	−1	—	—	−1	
Base-Emitter Voltage (V_{CE} = −10V, I_C = −2mA)	V_{BE}	−0.5	—	−0.8	−0.5	—	−0.8	
Output Capacitance, Common Base (V_{EB} = −0.5V, I_E = 0, f = 1MHz)	C_{cb}	—	—	8	—	—	8	pF
Input Capacitance, Common Base (V_{EB} = −0.5V, I_C = 0, f = 1MHz)	C_{eb}	—	—	35	—	—	35	
Gain Bandwidth Product (V_{CE} = −10V, I_C = −2mA)	f_T	—	250	—	—	250	—	MHz

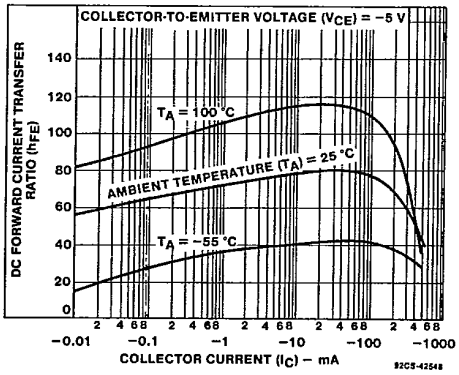

Fig. 1—Typical dc forward current transfer ratio characteristics for 2N5365.

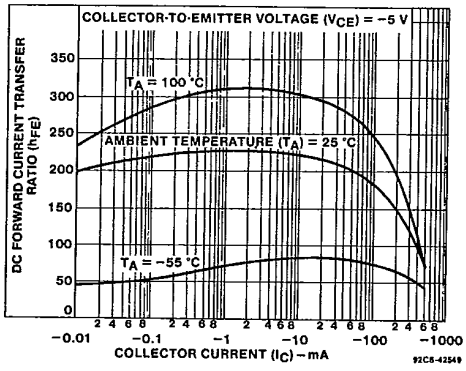

Fig. 2—Typical dc forward-current transfer ratio characteristics for 2N5366.

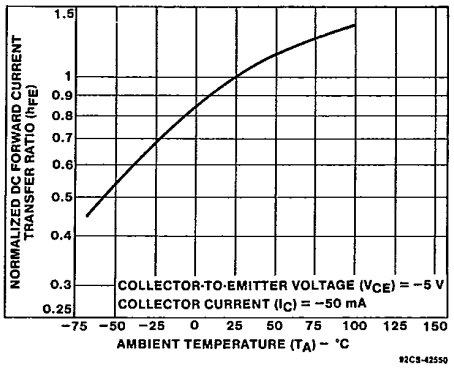

Fig. 3—Normalized dc forward-current transfer ratio characteristics for both types.

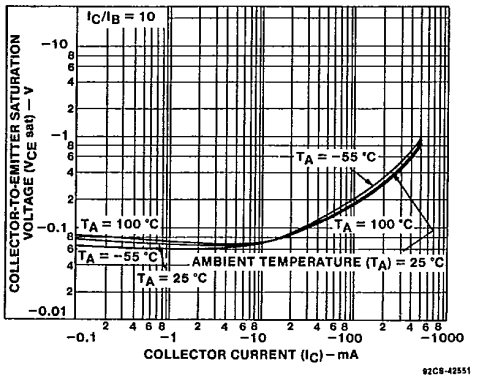

Fig. 4—Typical collector-to-emitter saturation voltage characteristics for 2N5365.

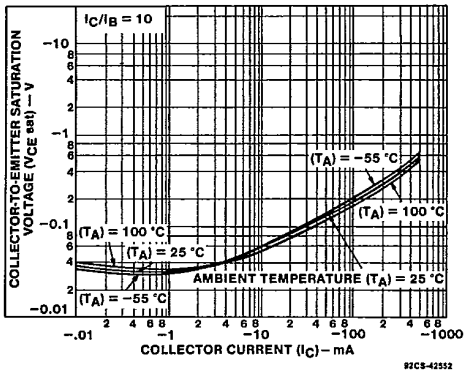

Fig. 5—Typical collector-to-emitter saturation voltage characteristics for 2N5366.

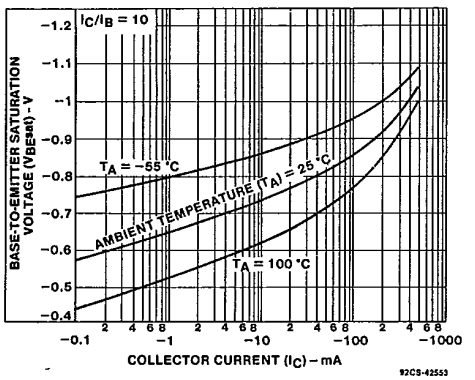

Fig. 6—Typical base-to-emitter saturation voltage characteristics for both types.

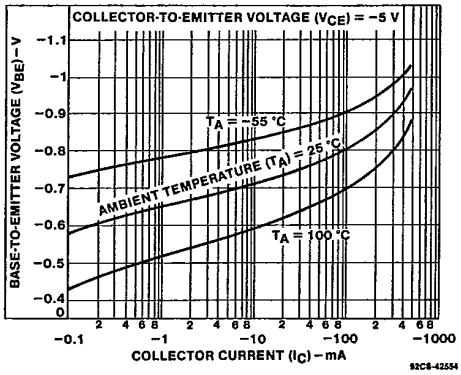

Fig. 7—Typical base-to-emitter voltage characteristics for 2N5365.

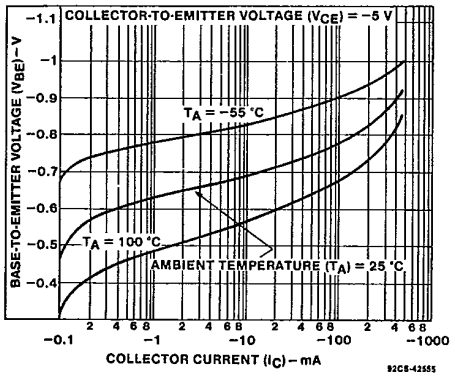

Fig. 8—Typical base-to-emitter voltage characteristics for 2N5366.

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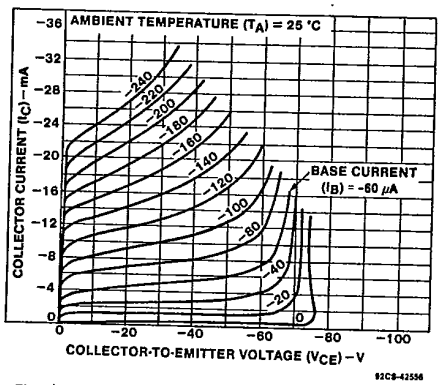

Fig. 9—Typical collector current characteristics for 2N5365.

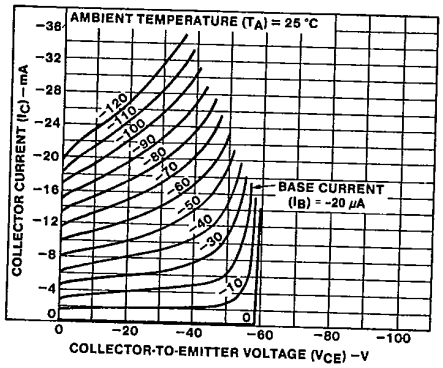

Fig. 10—Typical collector current characteristics for 2N5366.

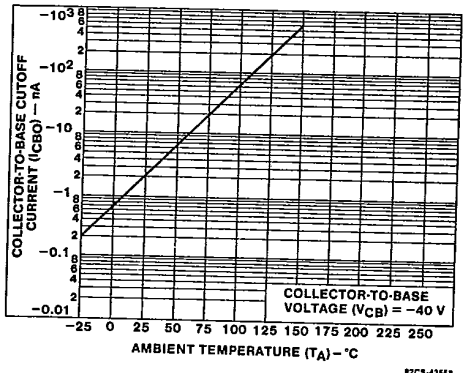

Fig. 11—Typical collector-to-base cutoff current characteristics for both types.

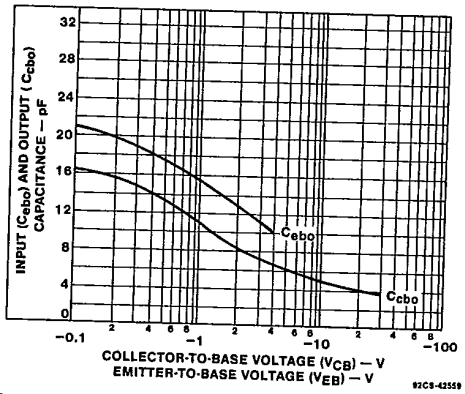

Fig. 12—Typical input and output capacitance characteristics for both types.

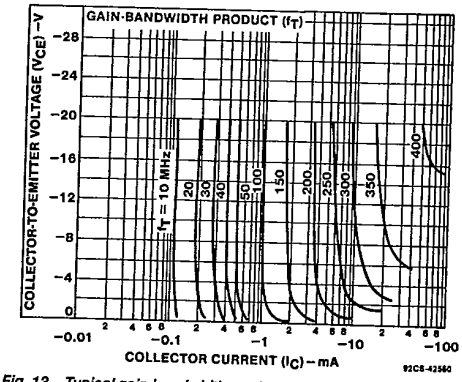

Fig. 13—Typical gain-bandwidth product characteristics for 2N5365.

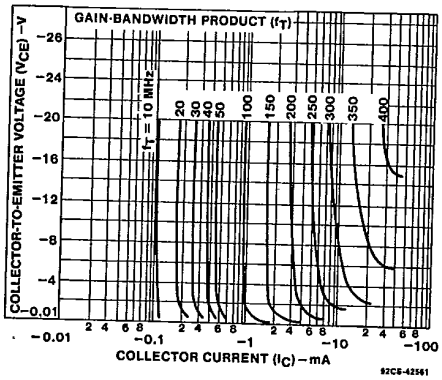

Fig. 14—Typical gain-bandwidth product characteristics for 2N5366.

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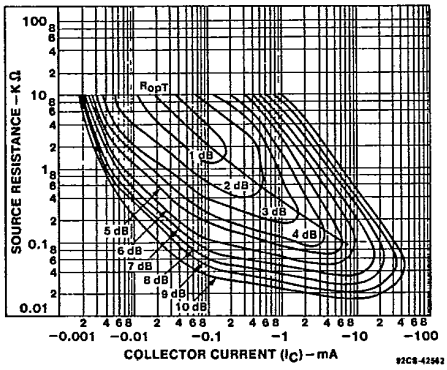

Fig. 15—Typical noise figure characteristics for 2N5365.

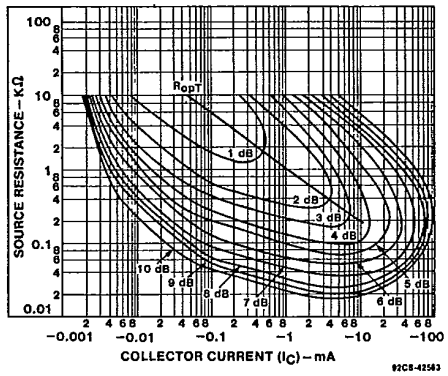

Fig. 16—Typical noise figure characteristics for 2N5366.

TERMINAL CONNECTIONS

Lead 1 - Emitter
Lead 2 - Collector
Lead 3 - Base