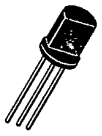
Signal Transistors

T-35-15

2N4424

Silicon Transistors



TO-98

Features:
- *Low Saturation Voltage*
- *High Beta*
- *900 mW @ T_C = 25°C*

The GE/RCA 2N4424 type is a planar, passivated, epitaxial NPN silicon transistor intended for general purpose industrial circuits. This transistor is especially suited for high level linear amplifiers or medium speed switching circuits in industrial control applications. This type is 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
EMITTER TO BASE VOLTAGE (V_{EBO})	5 V
COLLECTOR TO BASE VOLTAGE (V_{CBO})	60 V
CONTINUOUS COLLECTOR CURRENT (I_C) (Note 1)	500 mA
TOTAL POWER DISSIPATION ($T_A \leq 25°C$) (P_T) (Note 2)	360 mW
TOTAL POWER DISSIPATION ($T_A \leq 65°C$) (P_T) (Note 2)	250 mW
OPERATING TEMPERATURE (T_J)	−55° to +150°C
STORAGE TEMPERATURE (T_{STG})	−55° to +150°C
LEAD TEMPERATURE, 1/16" ± 1/32" (1.58mm ± 0.8mm) from case for 10 sec. max. (T_L)	+260°C

NOTES:
1. Determined from power limitations due to saturation voltage at this current.
2. Derate 2.88mW/°C increase in ambient temperature above 25°C

File Number **2059**

2N4424

T-35-15

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

CHARACTERISTICS	SYMBOL	LIMITS MIN.	LIMITS MAX.	UNITS
Collector Cutoff Current (V_{CB} = 40V)	I_{CBO}	–	30	nA
(V_{CB} = 40V, T_A = 100°C)	I_{CBO}	–	10	μA
(V_{CB} = 40V base-emitter junction short-circuited)	I_{CES}	–	30	nA
Emitter Cutoff Current (V_{EB} = 5V)	I_{EBO}	–	100	nA
DC Forward Current Transfer Ratio (V_{CE} = 4.5V, I_C = 2 mA)	h_{FE}	180	540	–
Collector Emitter Breakdown Voltage (I_C = 10 mA)	$V_{(BR)CEO}$	40	–	V
Collector Base Breakdown Voltage (I_C = 10 μA)	$V_{(BR)CBO}$	60	–	V
Emitter Base Breakdown Voltage (I_E = 0.1 μA)	$V_{(BR)EBO}$	5	–	V
Collector Saturation Voltage (I_B = 3 mA, I_C = 50 mA)	$V_{CE(sat)}$	–	0.3	V
Base Saturation Voltage (I_B = 3 mA, I_C = 50 mA)	$V_{BE(sat)}$	–	0.85	V
Small-Signal Forward Current Transfer Ratio (V_{CE} = 4.5 V, I_C = 2 mA, f = 1 kHz)	h_{fe}	180	–	–
(V_{CE} = 10V, I_C = 1 mA, f = 1 kHz)	h_{fe}	180 typ.		–
Input Impedance (V_{CE} = 10V, I_C = 1 mA, f = 1 kHz)	h_{ie}	5100 typ.		Ω
Output Admittance (V_{CE} = 10V, I_C = 1 mA, f = 1 kHz)	h_{oe}	14 typ.		μmhos
Voltage Feedback Ratio (V_{CE} = 10V, I_C = 1 mA, f = 1 kHz)	h_{re}	0.27 typ.		x 10-3

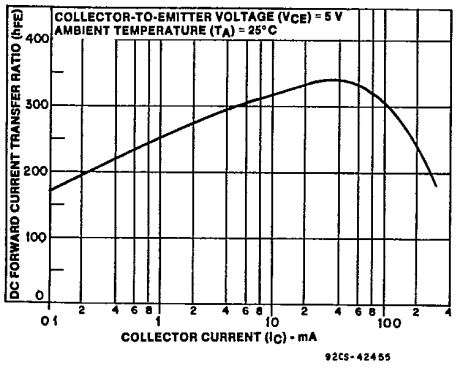


Fig. 1 – Typical dc forward current transfer ratio characteristics.

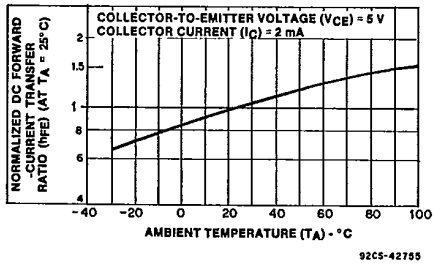


Fig. 2 – Normalized dc forward current transfer ratio characteristics.

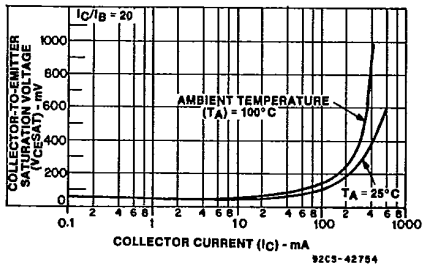


Fig. 3 – Typical collector-to-emitter saturation voltage characteristics.

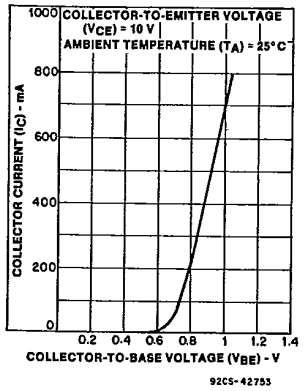


Fig. 4 – Typical collector current characteristic.

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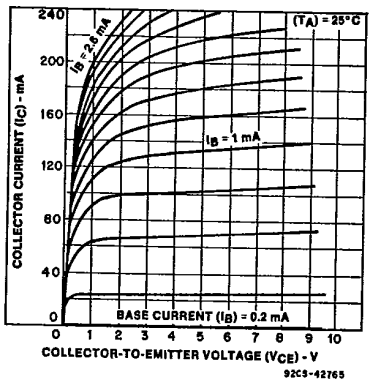


Fig. 5—Typical collector current characteristics.

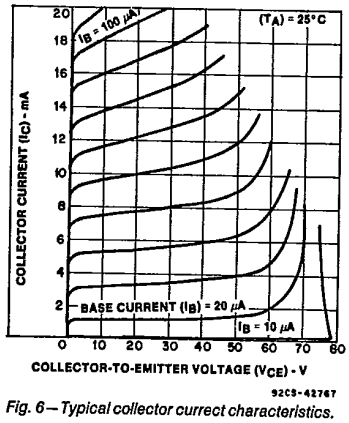


Fig. 6—Typical collector currect characteristics.

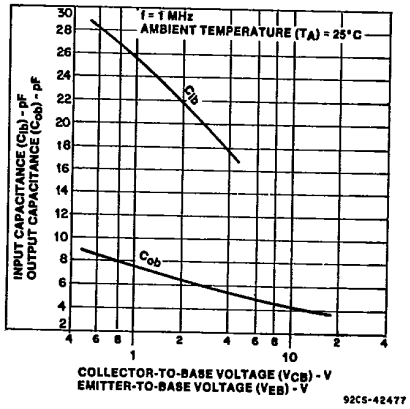


Fig. 7—Typical input and output capacitance characteristics.

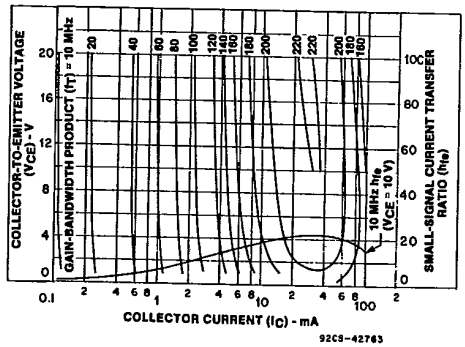


Fig. 8—Typical gain-bandwidth product characteristics.

TERMINAL CONNECTIONS

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