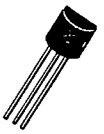
T-29-21

Signal Transistors

GES5814, GES5815, GES5816 GES5817, GES5818, GES5819

Silicon Transistors



TO-92

Features:
- *Excellent gain linearity over wide range of collector current: ≤ 500 mA*
- *High collector current rating: 1000 mA (pulsed)*
- *Epoxy encapsulation with proved reliability: excellent characteristics stability under environmental stresses, 85°C — 85#RH*

The GE/RCA GES5814, GES5816, and GES5818 NPN types and GES5815, GES5817, and GES5819 PNP types are planar, passivated, epitaxial silicon transistors intended for wide range general purpose applications operating in audio and intermediat frequency ranges. PNP values are negative; observe proper polarity.

These types are supplied in JEDEC TO-92 package.

MAXIMUM RATINGS, *Absolute-Maximum Values:*

	GES5814 GES5816 GES5818	GES5815 GES5817 GES5819	
COLLECTOR TO EMITTER VOLTAGE (V_{CEO})	40	−40	V
COLLECTOR TO EMITTER VOLTAGE (V_{CES})	50	−50	V
EMITTER TO BASE VOLTAGE (V_{EBO})	5	−5	V
COLLECTOR TO BASE VOLTAGE (V_{CBO})	50	−50	V
CONTINUOUS COLLECTOR CURRENT (I_C)	750	−750	mA
COLLECTOR CURRENT (Pulsed)* (I_{CM})	1000	−1000	mA
TOTAL POWER DISSIPATION $T_A \leq 25°C$ (P_T)	500		mW
DERATE FACTOR, $T_A > 25°C$	4.55		mW/°C
OPERATING TEMPERATURE (T_J)	−65° to +135		°C
STORAGE TEMPERATURE (T_{STG})	−65° to +150		°C
LEAD TEMPERATURE, 1/16" ± 1/32" (1.58mm ± 0.8mm) from case for 10s max (T_L)	+260		°C

TERMINAL CONNECTIONS

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

File Number **2096**

Signal Transistors

GES5814, GES5815, GES5816 GES5817, GES5818, GES5819

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

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CHARACTERISTICS	SYMBOL	LIMITS				
		GES5814, GES5816, GES5818		GES5815, GES5817, GES5819		
		MIN.	MAX	MIN.	MAX	
Collector-Emitter Breakdown Voltage (I_C = 10mA, I_B = 0)	$V_{(BR)CEO}$	40	–	–40	–	V
Emiter-Base Breakdown Voltage (I_E = 10μA, I_C = 0)	$V_{(BR)EBO}$	5	–	–5	–	V
Collector-Emitter Breakdown Voltage (I_C = 10μA, V_{BE} = 0)	$V_{(BR)CES}$	50	–	–50	–	V
Collector-Emitter Saturation Voltage (I_C = 500mA, I_B = 50mA)*	$V_{CE(SAT)}$	–	0.75	–	–0.75	V
Base-Emitter Saturation Voltage (I_C = 500mA, I_B = 50mA)*	$V_{BE(SAT)}$	–	1.2	–	–1.2	V
Base-Emitter Voltage (I_C = 500mA, V_{CE} = 2V)*	V_{BE}	0.6	1.1	–0.6	–1.1	V
Collector-Cutoff Current (V_{CB} = –25 V, I_E = O)	I_{CBO}	–	100	–	–100	nA
(V_{CB} = 25V, I_E = 0, T_A = 100°C)		–	15	–	–15	μA
Emitter-Base Reverse Current (V_{EB} = 5V, I_C = 0)	I_{EBO}	–	10	–	–10	μA
DC Forward Current Transfer Ratio (V_{CE} = 2V, I_C = 2mA)	h_{FE}					–
GES5814, GES5815		60 min.		160 max.		
GES5816, GES5817		100 min.		200 max.		
GES5818, GES5819		150 min.		300 max.		
(V_{CE} = 2V, I_C = 500mA)						
GES5814, GES5815		20 min.				
GES5816, GES5817		25 min.				
GES5818, GES5819		25 min.				
Emitter-Base Input Capacitance (V_{EB} = 0.5V, I = 0, f = 1MHz)	C_{eb}	–	55	–	55	pF
Collector-Base Output Capacitance (V_{CB} = 10 V, I_E = 0, f = 1MHz	C_{cb}	–	15	–	15	pF
Gain-Bandwidth Product (V_{CE} = 2 V, I_C = 50mA, F = 20 MHz)	f_T					MHz
GES5814, GES5815		100 min.				
GES5816, GES5817		120 min.				
GES5818, GES5819		135 min.				

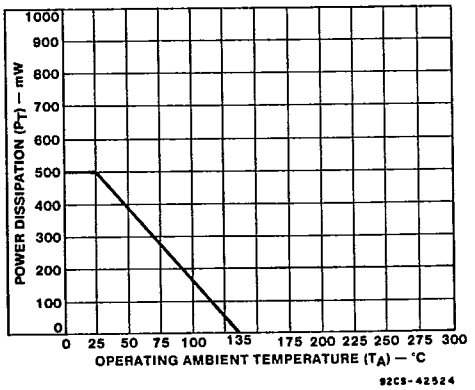

Fig. 1 — Derating curve for all types.

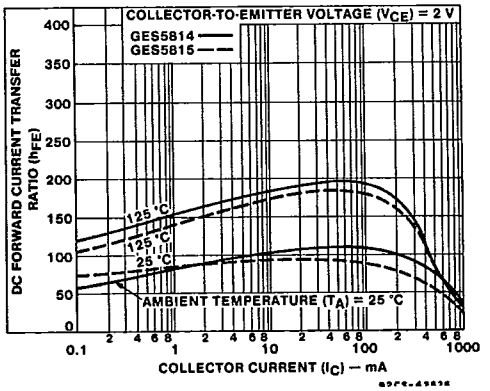

Fig. 2 — Typical dc forward-current transfer ratio characteristics for GES 5814 and GES 5815.

GES5814, GES5815, GES5816 GES5817, GES5818, GES5819

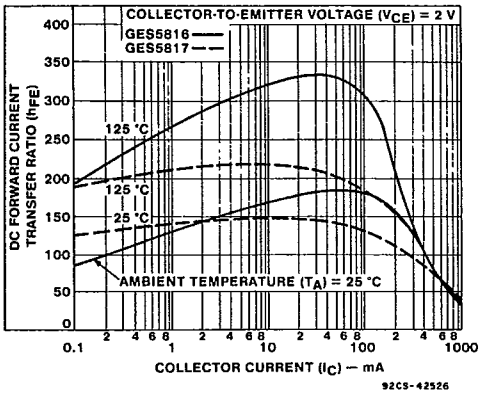

Fig. 3—Typical dc forward-current transfer ratio characteristics for GES5816, and GES5817.

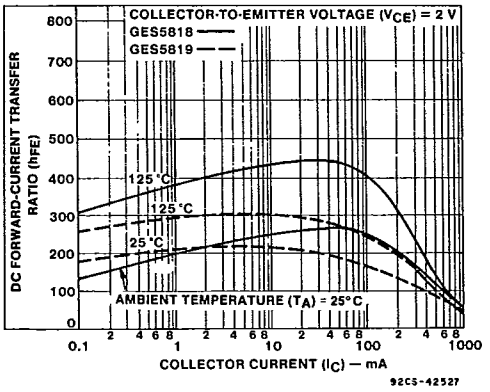

Fig. 4—Typical dc forward-current transfer ratio characteristics for GES5818 and GES5819.

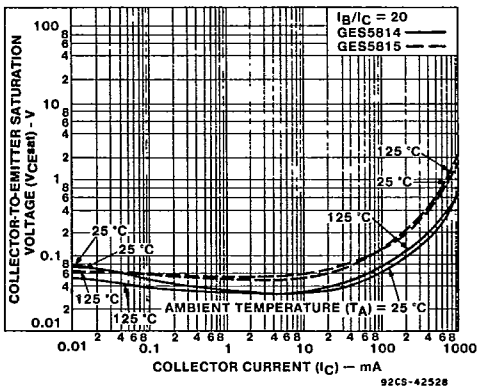

Fig. 5—Typical collector-to-emitter saturation voltage characteristics for GES5814 and GES5815 (h_{FE} = 20).

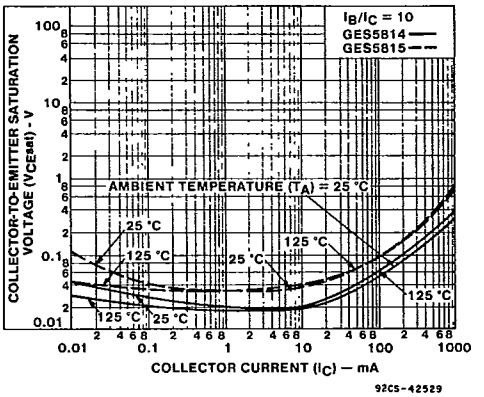

Fig. 6—Typical collector-to-emitter saturation voltage characteristics for GES5814 and GES5815 at h_{FE} = 10.

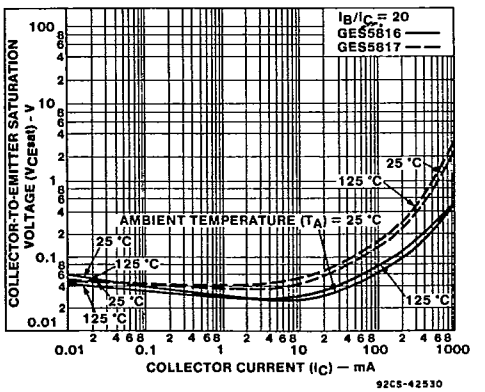

Fig. 7—Typical collector-to-emitter saturation voltage characteristics for GES5816 and GES5817 at h_{FE} = 20.

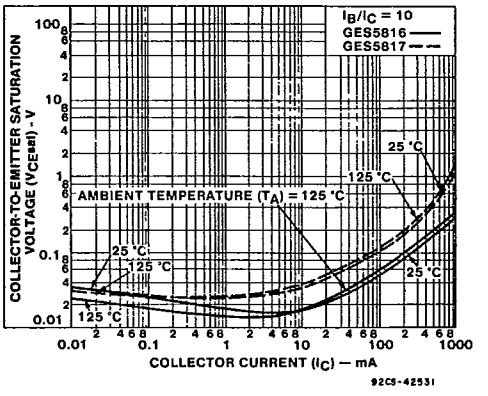

Fig. 8—Typical collector-to-emitter saturation voltage characteristics for GES5816 and GES5817 at h_{FE} = 10.

GES5814, GES5815, GES5816
GES5817, GES5818, GES5819

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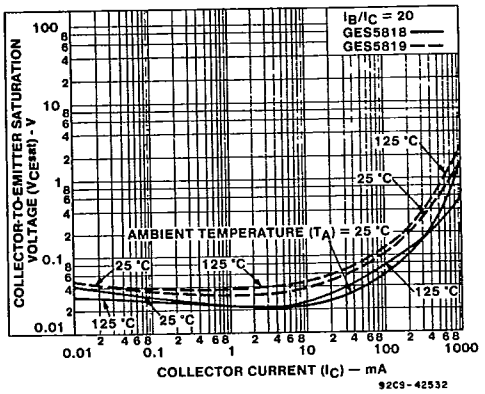

Fig. 9—Typical collector-to-emitter saturation voltage characteristics for GES5818 and GES5819 at h_{FE} = 20.

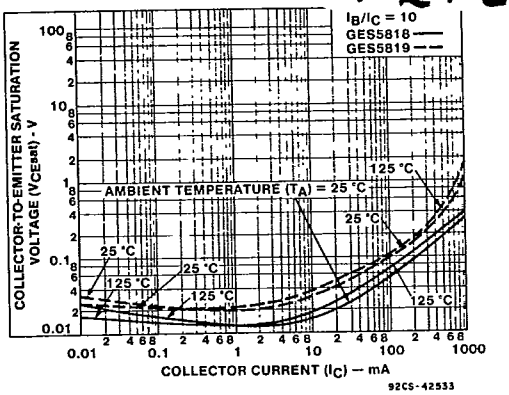

Fig. 10—Typical collector-to-emitter saturation voltage characteristics for GES5818 and GES5819 at h_{FE} = 10.

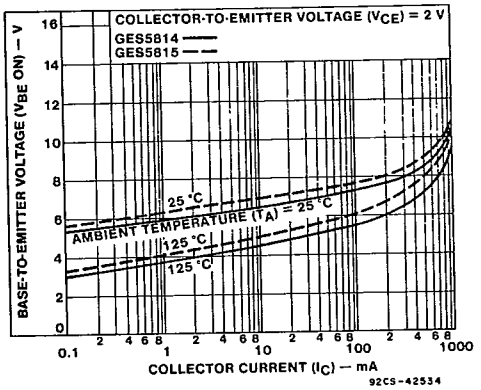

Fig. 11—Typical base-to-emitter voltage characteristics for GES5814 and GES5815.

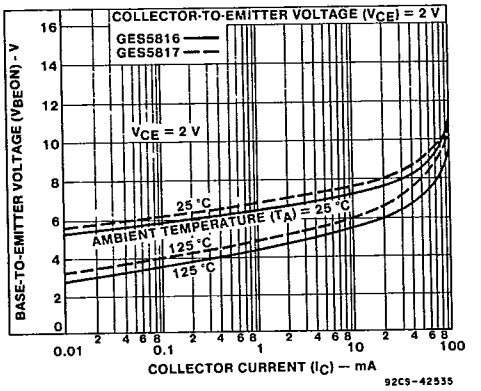

Fig. 12—Typical base-to-emitter voltage characteristics for GES5816 and GES5817.

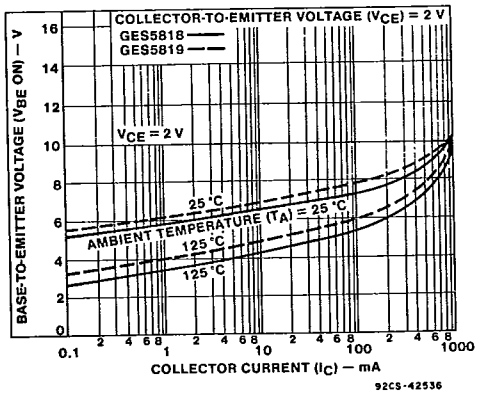

Fig. 13—Typical base-to-emitter voltage characteristics for GES5818 and GES5819.

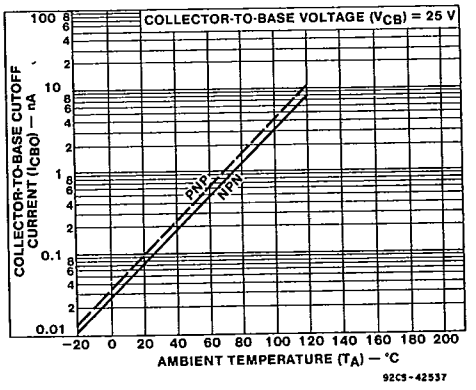

Fig. 14—Typical collector-to-base cutoff current characteristics for all types.