

**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

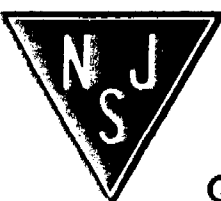
MAXIMUM RATINGS, Absolute-Maximum Values:

	GES5814	GES5815	
	GES5816	GES5817	
	GES5818	GES5819	
COLLECTOR TO EMITTER VOLTAGE (V_{CE0})	40	-40	V
COLLECTOR TO EMITTER VOLTAGE (V_{CEB})	50	-50	V
EMITTER TO BASE VOLTAGE (V_{EB0})	5	-5	V
COLLECTOR TO BASE VOLTAGE (V_{CB0})	50	-50	V
CONTINUOUS COLLECTOR CURRENT (I_C)	750	-750	mA
COLLECTOR CURRENT (Pulsed) (I_{CM})	1000	-1000	mA
TOTAL POWER DISSIPATION $T_A \leq 25^\circ\text{C}$ (P_T)	500		mW
DERATE FACTOR, $T_A > 25^\circ\text{C}$	4.55		mW/°C
OPERATING TEMPERATURE (T_J)	-65° to +135		°C
STORAGE TEMPERATURE (T_{STG})	-85° to +160		°C
LEAD TEMPERATURE, $V_{16} \pm 1/32"$ (1.58mm \pm 0.8mm) from case for 10s max (T_L)	+260		°C

TERMINAL CONNECTIONS

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

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



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

CHARACTERISTICS	SYMBOL	LIMITS				
		GES5814, GES5816, GES5818		GES5815, GES5817, GES5819		
		MIN.	MAX.	MIN.	MAX.	
Collector-Emitter Breakdown Voltage ($I_C = 10\text{mA}$, $I_B = 0$)	$V_{(BR)CEO}$	40	—	-40	—	V
Emitter-Base Breakdown Voltage ($I_E = 10\mu\text{A}$, $I_C = 0$)	$V_{(BR)EBQ}$	5	—	-5	—	
Collector-Emitter Breakdown Voltage ($I_C = 10\mu\text{A}$, $V_{BE} = 0$)	$V_{(BR)CES}$	50	—	-50	—	
Collector-Emitter Saturation Voltage ($I_C = 500\text{mA}$, $I_B = 50\text{mA}$) [*]	$V_{CE(SAT)}$	—	0.75	—	-0.75	
Base-Emitter Saturation Voltage ($I_C = 500\text{mA}$, $I_B = 50\text{mA}$) [*]	$V_{BE(SAT)}$	—	1.2	—	-1.2	
Base-Emitter Voltage ($I_C = 500\text{mA}$, $V_{CE} = 2\text{V}$) [*]	V_{BE}	0.6	1.1	-0.6	-1.1	
Collector Cutoff Current ($V_{CB} = -25\text{V}$, $I_E = 0$) ($V_{CB} = 25\text{V}$, $I_E = 0$, $T_A = 100^\circ\text{C}$)	I_{CBO}	—	100	—	~100	μA
Emitter-Base Reverse Current ($V_{EB} = 5\text{V}$, $I_C = 0$)	I_{EBO}	—	10	—	-10	
DC Forward Current Transfer Ratio ($V_{CE} = 2\text{V}$, $I_C = 2\text{mA}$) GES5814, GES5815 GES5816, GES5817 GES5818, GES5819 ($V_{CE} = 2\text{V}$, $I_C = 500\text{mA}$) GES5814, GES5815 GES5816, GES5817 GES5818, GES5819	β_{FE}	60 min.		160 max.		—
		100 min.		200 max.		
		150 min.		300 max.		
		20 min.				
		25 min.				
		25 min.				
Emitter-Base Input Capacitance ($V_{EB} = 0.5\text{V}$, $f = 0.1 = 1\text{MHz}$)	C_{EB}	—	55	—	55	pF
Collector-Base Output Capacitance ($V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$)	C_{CB}	—	15	—	15	
Gain-Bandwidth Product ($V_{CE} = 2\text{V}$, $I_C = 50\text{mA}$, $F = 20\text{MHz}$) GES5814, GES5815 GES5816, GES5817 GES5818, GES5819	f_T	100 min.				MHz
		120 min.				
		135 min.				

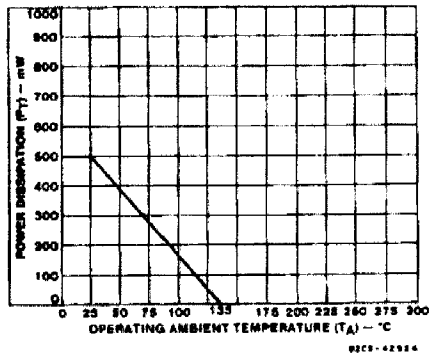


Fig. 1 - Derating curve for all types.

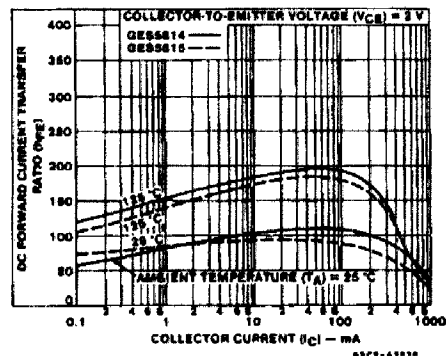


Fig. 2 - Typical dc forward-current transfer characteristics for GES 5814 and GES 5815.