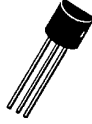


Signal Transistors

**GES2218A, 19A, GES2218, 19**

**Silicon Transistors**



TO-92

The GE/RCA GES2218, A, 19, A series are planar epitaxial NPN silicon transistors designed for medium speed switches

and as amplifiers from audio to VHF frequencies. These types are supplied in JEDEC TO-92 package.

**MAXIMUM RATINGS, Absolute-Maximum Values:**

	GES2218 GES2219	GES2218A GES2219A	
COLLECTOR TO EMITTER VOLTAGE ( $V_{CE0}$ )	30	40	V
EMITTER TO BASE VOLTAGE ( $V_{EB0}$ )	5	6	V
COLLECTOR TO BASE VOLTAGE ( $V_{CB0}$ )	60	75	V
CONTINUOUS COLLECTOR CURRENT ( $I_C$ )	800	800	mA
TOTAL POWER DISSIPATION $T_C \leq 25^\circ\text{C}$ ( $P_T$ )	3	1.8	W
TOTAL POWER DISSIPATION $T_A \leq 25^\circ\text{C}$ ( $P_T$ )	0.8	0.5	W
DERATE FACTOR, $T_C > 25^\circ\text{C}$	20	12	mW/ $^\circ\text{C}$
DERATE FACTOR, $T_A > 25^\circ\text{C}$	5.33	3.33	mW/ $^\circ\text{C}$
OPERATING TEMPERATURE ( $T_J$ )	-65° to +200		$^\circ\text{C}$
STORAGE TEMPERATURE ( $T_{STG}$ )	-65° to +200		$^\circ\text{C}$
LEAD TEMPERATURE $1/16" \pm 1/32"$ (1.58mm $\pm$ 0.8mm) from case at 10s max. ( $T_L$ )	+260		$^\circ\text{C}$

Signal Transistors

## GES2218A, 19A, GES2218, 19

T-35-11

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

CHARACTERISTICS	SYMBOL	LIMITS				UNITS
		GES2218 GES2219		GES2218A GES2219A		
		MIN.	MAX.	MIN.	MAX.	
Collector-Emitter Breakdown Voltage ( $I_C = 10\text{mA}$ , $I_B = 0$ )	$BV_{ECO}$	30	—	40	—	V
Collector-Base Breakdown Voltage ( $I_C = 10\mu\text{A}$ , $I_E = 0$ )	$BV_{CBO}$	60	—	75	—	
Emitter-Base Breakdown Voltage ( $I_E = 10\mu\text{A}$ , $I_C = 0$ )	$BV_{EBO}$	5	—	6	—	
Collector Cutoff Current ( $V_{CB} = 50\text{V}$ , $I_E = 0$ )	$I_{CBO}$	—	0.01	—	—	$\mu\text{A}$
( $V_{CB} = 60\text{V}$ , $I_E = 0$ )		—	—	—	0.01	
Emitter Cutoff Current ( $V_{EB} = 3\text{V}$ , $I_C = 0$ )	$I_{EBO}$	—	—	—	10	nA
Collector-Emitter Saturation Voltage ( $I_C = 150\text{mA}$ , $I_B = 15\text{mA}$ )	$V_{BE(SAT)}$	—	0.4	—	0.3	V
( $I_C = 500\text{mA}$ , $I_B = 50\text{mA}$ )		—	1.6	—	1	
Base-Emitter Saturation Voltage ( $I_C = 150\text{mA}$ , $I_B = 15\text{mA}$ )	$V_{BE(SAT)}$	0.6	2	0.6	1.2	
( $I_C = 500\text{mA}$ , $I_B = 50\text{mA}$ )		—	2.6	—	2	
		GES2218 GES2218A		GES2219 GES2219A		
DC Forward Current Transfer Ratio ( $I_C = 0.1\text{mA}$ , $V_{CE} = 10\text{V}$ )	$h_{FE}$	20	—	35	—	—
( $I_C = 1\text{mA}$ , $V_{CE} = 10\text{V}$ )		25	—	50	—	
( $I_C = 10\text{mA}$ , $V_{CE} = 10\text{V}$ )		35	—	75	—	
( $I_C = 150\text{mA}$ , $V_{CE} = 1\text{V}$ )		20	—	50	—	
( $I_C = 500\text{mA}$ , $V_{CE} = 10\text{V}$ )		20	—	40	—	
Gain Bandwidth Product ( $I_C = 20\text{mA}$ , $V_{CE} = 20\text{V}$ , $f = 100\text{MHz}$ )	$f_T$	250	—	250*	—	MHz

\* $f_T$  for 2219A = 300(min).TERMINAL CONNECTIONSLead 1 - Emitter  
Lead 2 - Base  
Lead 3 - Collector