

Description

Complement to the 2N6988

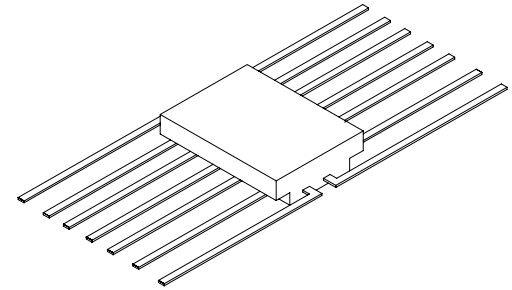
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N6990J)
- JANTX level (2N6990JX)
- JANTXV level (2N6990JV)
- JANS level (2N6990JS)
- QCI to the applicable level
- 100% die visual inspection per MIL-STD-750 method 2072 for JANTXV and JANS
- Radiation testing (total dose) upon request

Please contact Semicoa for special configurations
www.SEMICOA.com or (714) 979-1900

Applications

- General purpose switching
- 4 Transistor Array
- NPN silicon transistor



Features

- Hermetically sealed 14 Lead Flat Pack
- Also available in chip configuration
- Chip geometry 0400
- Reference document: MIL-PRF-19500/559

Benefits

- Qualification Levels: JAN, JANTX, JANTXV and JANS
- Radiation testing available

Absolute Maximum Ratings		$T_C = 25^\circ\text{C}$ unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	50	Volts
Collector-Base Voltage	V_{CBO}	75	Volts
Emitter-Base Voltage	V_{EBO}	6	Volts
Collector Current, Continuous	I_C	800	mA
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above 25°C	P_T	1.0 5.71	W mW/ $^\circ\text{C}$
Operating Junction Temperature	T_J	-65 to +200	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65 to +200	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

characteristics specified at $T_A = 25^\circ\text{C}$

Off Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}$	50			Volts
Collector-Base Cutoff Current	I_{CBO1}	$V_{CB} = 75 \text{ Volts}$			10	μA
	I_{CBO2}	$V_{CB} = 60 \text{ Volts}$			10	nA
Collector-Base Cutoff Current	I_{CBO3}	$V_{CB} = 60 \text{ Volts}, T_A = 150^\circ\text{C}$			10	μA
Emitter-Base Cutoff Current	I_{EBO1}	$V_{EB} = 6 \text{ Volts}$			10	μA
	I_{EBO2}	$V_{EB} = 4 \text{ Volts}$			50	nA

On Characteristics

Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
DC Current Gain	h_{FE1}	$I_C = 0.1 \text{ mA}, V_{CE} = 10 \text{ Volts}$	50			
	h_{FE2}	$I_C = 1.0 \text{ mA}, V_{CE} = 10 \text{ Volts}$	75		325	
	h_{FE3}	$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ Volts}$	100			
	h_{FE4}	$I_C = 150 \text{ mA}, V_{CE} = 10 \text{ Volts}$	100		300	
	h_{FE5}	$I_C = 500 \text{ mA}, V_{CE} = 10 \text{ Volts}$	30			
	h_{FE6}	$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ Volts}$ $T_A = -55^\circ\text{C}$	35			
Base-Emitter Saturation Voltage	V_{BEsat1}	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$	0.6		1.2	Volts
	V_{BEsat2}	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			2.0	
Collector-Emitter Saturation Voltage	V_{CEsat1}	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$			0.3	Volts
	V_{CEsat2}	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			1.0	

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 20 \text{ Volts}, I_C = 20 \text{ mA}, f = 100 \text{ MHz}$	2.5		10	
Small Signal Short Circuit Forward Current Transfer Ratio	h_{FE}	$V_{CE} = 10 \text{ Volts}, I_C = 1 \text{ mA}, f = 1 \text{ kHz}$	50			
Open Circuit Output Capacitance	C_{OBO}	$V_{CB} = 10 \text{ Volts}, I_E = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			8	pF
Open Circuit Input Capacitance	C_{IBO}	$V_{EB} = 2 \text{ Volts}, I_C = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			25	pF
Transistor to Transistor Resistance	$ R_{T-T} $	$ V_{T-T} = 500 \text{ Volts}$	10^{10}			Ω

Switching Characteristics

Saturated Turn-On Time	t_{ON}				35	ns
Saturated Turn-Off Time	t_{OFF}				300	ns