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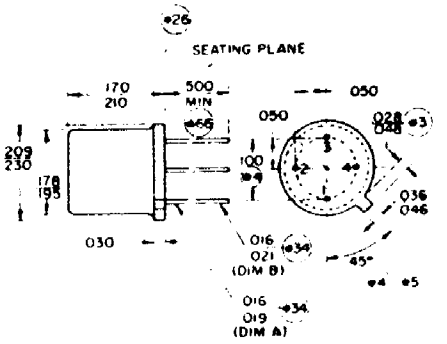
2N998
2N999
(SILICON)



MAXIMUM RATINGS

Rating	Symbol	2N998	2N999	Unit
Collector-Emitter Voltage	V_{CEO}	60	60	Vdc
Collector-Base Voltage	V_{CB}	100	60	Vdc
Emitter-Base Voltage	V_{EB}	15		Vdc
Collector Current	I_C	500		mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.5 2.86		Watt mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.8 10.3		Watts mW/°C
Operating Junction Temperature	T_J	+200		°C
Storage Temperature Range	T_{stg}	-65 to +200		°C

TO-72



ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage* (I_C = 30 mAdc, I_B = 0)		$BV_{CEO(sus)}$*	60	—	Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	2N998 2N999	BV_{CBO}	100 60	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)		BV_{EBO}	15	—	Vdc
Collector Cutoff Current (V_{CB} = 90 Vdc, I_E = 0)	2N998	I_{CBO}	—	0.01	μAdc
(V_{CB} = 90 Vdc, I_E = 0, T_A = 150°C)	2N998		—	15	
(V_{CB} = 60 Vdc, I_E = 0)	2N999		—	0.01	
(V_{CB} = 60 Vdc, I_E = 0, T_A = 150°C)	2N999		—	10	
Emitter Cutoff Current (V_{BE} = 10 Vdc, I_C = 0)		I_{EBO}	—	0.01	μAdc
ON CHARACTERISTICS					
DC Current Gain* (I_C = 1 mAdc, V_{CE} = 5 Vdc)	2N998	h_{FE}*	800	—	—
(I_C = 10 mAdc, V_{CE} = 5 Vdc)	2N998		1,600	8,000	
(I_C = 100 mAdc, V_{CE} = 5 Vdc)	2N998		2,000	—	
(I_C = 0.1 mAdc, V_{CE} = 10 Vdc)	2N999		1,000	—	
(I_C = 10 mAdc, V_{CE} = 10 Vdc)	2N999		4,000	—	
(I_C = 100 mAdc, V_{CE} = 10 Vdc)	2N999		7,000	70,000	
(I_C = 100 mAdc, V_{CE} = 10 Vdc, T_A = -55°C)	2N999		1,000	—	
(I_C = 10 mAdc, V_{CE} = 5 Vdc, measured across each transistor within the device)	2N998		25	—	
(I_C = 10 mAdc, V_{CE} = 10 Vdc, measured across each transistor within the device)	2N999		25	—	
DYNAMIC CHARACTERISTICS					
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 140 kHz)	2N998 2N999	C_{ob}	— —	30 20	pF
Input Capacitance (V_{BE} = 0.5 Vdc, I_C = 0, f = 140 kHz)	2N998 2N999	C_{ib}	— —	50 10	pF
Small-Signal Current Gain (I_C = 1 mAdc, V_{CE} = 5 Vdc, f = 1 kHz)	2N998	h_{fe}	1,000	—	—
Noise Figure** (I_C = 0.1 mAdc, V_{CE} = 10 Vdc, R_g = 5 kohms, f = 1 kHz, Bandwidth = 200 Hz)	2N998	NF**	—	6	dB

*Pulse Test: Pulse Width = 300 μs, Duty Cycle = 1%

Quality Semi-Conductors

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