

2N4999 AND 2N5001

2 AMP

HIGH SPEED PNP TRANSISTOR

100 VOLTS

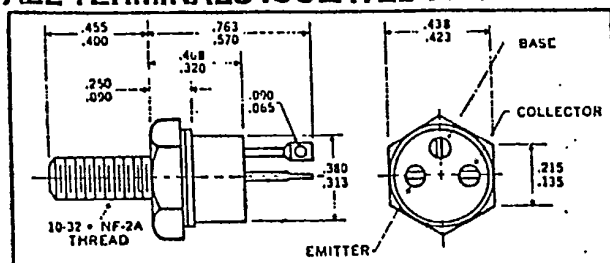


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CASE STYLE X

JEDEC TO-59

ALL TERMINALS ISOLATED FROM CASE



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING, 200 NSEC MAX t_{on}
- HIGH FREQUENCY, TYPICAL f_T 100 MHZ
- V_{CE0} 80 VOLTS MIN
- HIGH LINEAR GAIN, LOW SATURATION VOLTAGE
- 200 °C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH 2N3996 AND 2N3997

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CE0}	80	Volts
Collector - Base Voltage	V_{CB0}	100	Volts
Emitter - Base Voltage	V_{EB0}	5.5	Volts
Collector Current	I_C	2	Amps
Base Current	I_B	1	Amps
Total Device Dissipation @ $T_C = 50^\circ\text{C}$	P_D	30	Watts
Derate above 50 °C		200	mW/°C
Operating and Storage Temperature	T_j, T_{stg}	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5.0	°C/W

ELECTRICAL CHARACTERISTICS

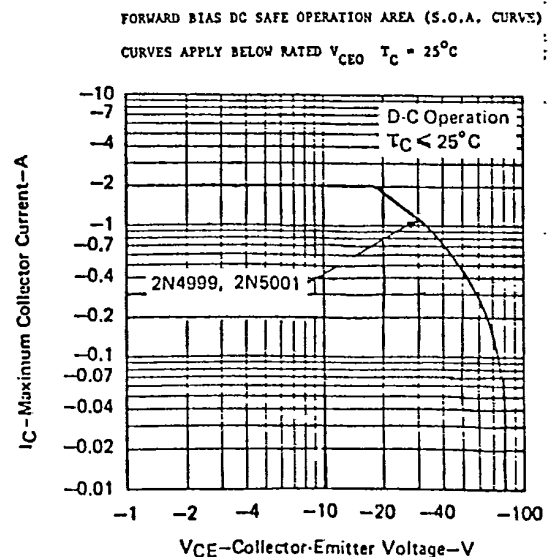
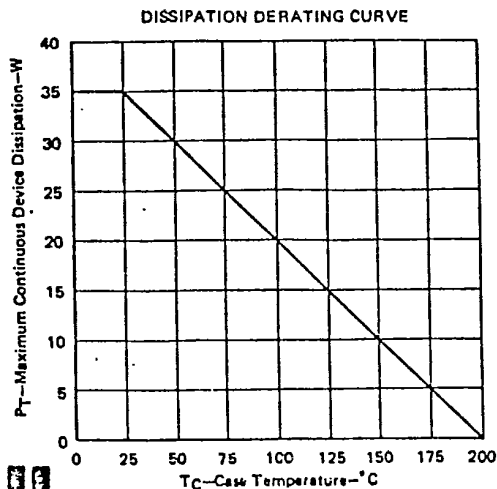
Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 100$ mA dc)	BV_{CE0}	80		Vdc
Collector - Base Breakdown Voltage ($I_C = 200$ uA dc)	BV_{CB0}	100		Vdc
Emitter - Base Breakdown Voltage ($I_E = 200$ uA dc)	BV_{EB0}	5.5		Vdc

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current ($V_{CE} = 40 \text{ Vdc}$)	I_{CEO}		50	μAdc
Emitter Cutoff Current ($V_{EB} = 4 \text{ Vdc}$) ($V_{EB} = 5.5 \text{ Vdc}$)	I_{EBO}		1.0 1.0	μAdc mAdc
DC Current Gain* $(I_C = 50 \text{ mAdc}, V_{CE} = 5 \text{ Vdc})$ $(I_C = 1 \text{ Adc}, V_{CE} = 5 \text{ Vdc})$ $(I_C = 3 \text{ Adc}, V_{CE} = 5 \text{ Vdc})$	h_{FE}	20 50 30 70 5 15	90 200	
Collector - Emitter Saturation Voltage* $(I_C = 1 \text{ Adc}, I_B = 100 \text{ mAdc})$ $(I_C = 2 \text{ Adc}, I_B = 200 \text{ mAdc})$	$V_{CE(SAT)}$		0.46 0.85	Vdc
Base - Emitter Saturation Voltage* $(I_C = 1 \text{ Adc}, I_B = 100 \text{ mAdc})$ $(I_C = 2 \text{ Adc}, I_B = 200 \text{ mAdc})$	$V_{BE(SAT)}$		1.2 1.5	Vdc
Current - Gain - Bandwidth Product $(I_C = 200 \text{ Adc}, V_{CE} = 5 \text{ Vdc}, f = 20 \text{ MHz})$	f_T	50 60		MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 1 \text{ MHz}$)	C_{ob}		120	pf
Base - Emitter Voltage* $V_{CE} = 5 \text{ Vdc}, I_C = 2 \text{ Adc}$	$V_{BE(on)}$		1.5	Vdc
Delay Time ($V_{CC} = 30 \text{ Vdc}$)	t_d			
Rise Time $V_{EB(Off)} = 3.7 \text{ Vdc}$	t_r		200	ns
Storage Time $I_C = 2 \text{ Adc}$	t_s			
Fall Time $I_{B1} = I_{B2} = 200 \text{ mAdc}$ $R_L = 15 \text{ Ohms}$	t_f		400	ns

*Pulse Test: Pulse width = 300 μs , DutyCycle = 2%

TYPICAL OPERATING CURVES



SOLID STATE DEVICES, INC.