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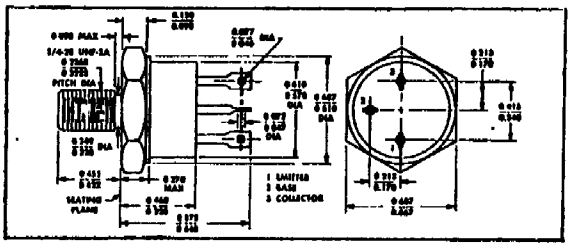
2N5330
30 AMP
HIGH SPEED NPN TRANSISTOR
150 VOLTS

JEDEC TO–61
ALL TERMINALS ISOLATED FROM CASE



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING, 350 NSEC MAX ton
- HIGH FREQUENCY, TYPICAL f_T 100 MHZ
- BVCEO 90 VOLTS MIN, TYPICALLY 150 VOLTS
- HIGH LINEAR GAIN, LOW SATURATION VOLTAGE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH SPT5330

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	90	Volts
Collector - Base Voltage	V_{CBO}	150	Volts
Emitter - Base Voltage	V_{EBO}	8	Volts
Collector Current	I_C	30	Amps
Base Current	I_B	5	Amps
Total Device Dissipation @ TC = 100°C Derate above 100 °C	P_D	80 800	Watts mW/°C
Operating and Storage Temperature	Tj, Tstg	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC	1.25	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I_C= 100 mAdc)	BV_{CEO}*	90		Vdc
ollector - Base Breakdown Voltage (I_C= 200 uAdc)	BV_{CBO}	150		Vdc
Emitter - Base Breakdown Voltage (I_E= 200 uAdc)	BV_{EBO}	8		Vdc

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current (V_{CE}= 150 Vdc, V_{BE}= 500 mVdc)	I_{CEV}		10**	mAdc
Collector Cutoff Current (V_{CE}= 150 Vdc, V_{BE} = 500 mVdc, TC= 150°C)	I_{CEV}		50***	mAdc
Emitter Cutoff Current (V_{EB} = 8 Vdc)	I_{EBO}		5	mAdc
DC Current Gain* (I_C = 10 Adc, V_{CE} = 2 Vdc) (I_C = 30 Adc, V_{CE} = 3 Vdc)	h_{FE}*	40 10	120 50	
Collector - Emitter Saturation Voltage* (I_C = 10 Adc, I_B = 500 mAdc) (I_C = 30 Adc, I_B = 3 Adc)	$V_{CE\ (SAT)}$*		0.6 1.8	Vdc
Base - Emitter Saturation Voltage* (I_C = 10 Adc, I_B = 300 m Adc) (I_C = 30 Adc, I_B = 3 Adc)	$V_{BE\ (SAT)}$*		1.3 1.8	Vdc
Current - Gain - Bandwith Product (I_C = 3 Adc, V_{CE} = 10 Vdc, f = 10 MHz)	f_T	80		MHz
Output Capacitance (V_{CB} = 10 Vdc I_E = 0, f = 1 MHz)	C_{ob}		500	pf
Input Capacitance (V_{BE} = 1.0 Vdc, I_C = 0, f = 1 MHz)	C_{ib}		1250	pf
Delay Time Rise Time	(V_{CC} = 21 Vdc, I_C = 10 Adc, I_{B1} = I_{B2} = 500 m Adc) (t_{on})	t_d + t_r		350	ns
Storage Time Fall Time	(V_{CC} = 21 Vdc, I_C = 10 Adc, I_{B1} = I_{B2} = 500 m Adc) (t_{off})	t_s + t_f		1.25	us

*Pulse Test: Pulse width = 300 us, DutyCycle = 2% **Typically 1 uAdc ***Typically 50 uAdc

TYPICAL OPERATING CURVES