

2N5330
30 AMP
HIGH SPEED NPN TRANSISTOR
150 VOLTS

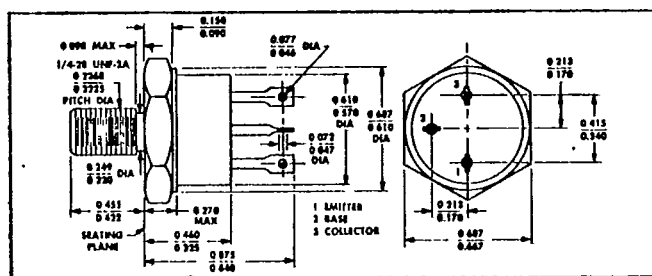


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CASE STYLE T

JEDEC TO-61

ALL TERMINALS ISOLATED FROM CASE



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING, 350 NSEC MAX t_{on}
- 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_{CE0}	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 @ $T_C = 100^\circ\text{C}$	P_D	80	Watts
Derate above 100°C		800	mW/ $^\circ\text{C}$
Operating and Storage Temperature	T_j, T_{stg}	-65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	R _{θJC}	1.25	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 100 \text{ mA}_{DC}$)	BV_{CEO}^*	90		Vdc
Collector - Base Breakdown Voltage ($I_C = 200 \text{ uA}_{DC}$)	BV_{CBO}	150		Vdc
Emitter - Base Breakdown Voltage ($I_E = 200 \text{ uA}_{DC}$)	BV_{EBO}	8		Vdc

ELECTRICAL CHARACTERISTICS

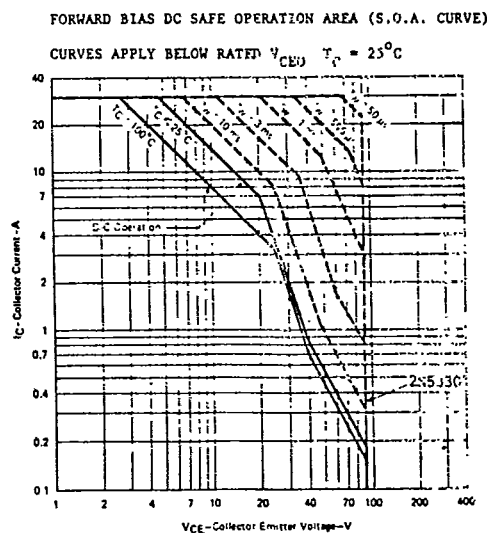
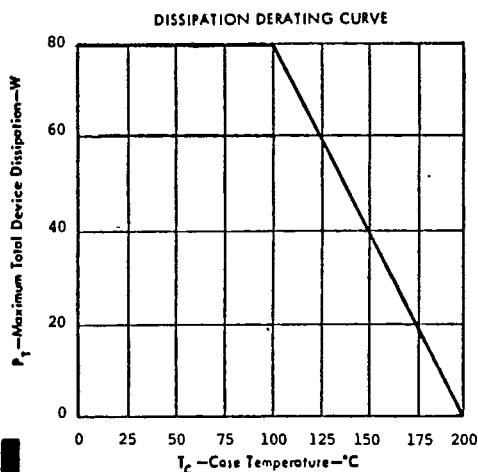
Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current ($V_{CE} = 150 \text{ Vdc}$, $V_{BE} = 500 \text{ mVdc}$)	I_{CEV}		10**	mAdc
Collector Cutoff Current ($V_{CE} = 150 \text{ Vdc}$, $V_{BE} = 500 \text{ mVdc}$, $TC = 150^{\circ}\text{C}$)	I_{CEV}		50***	mAdc
Emitter Cutoff Current ($V_{EB}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

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

**Typically 1 uAdc

***Typically 50 uAdc

TYPICAL OPERATING CURVES



SOLID STATE DEVICES, INC.