

X00154

SFT6200

10 AMP



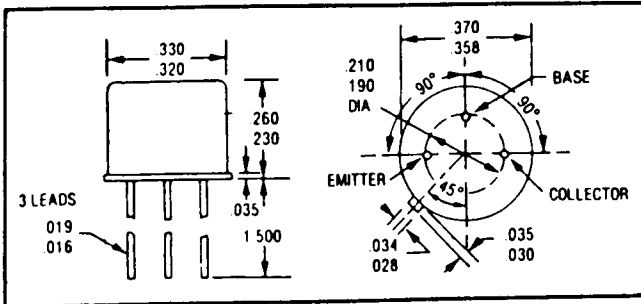
RADIATION TOLLERANT NPN TRANSISTOR

150 VOLTS

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CASE STYLE W

JEDEC TO-5



FEATURES

- MIN h_{FE} OF 10 AT 1A, 10V AFTER 1×10^{14} FAST NEUTRONS/ CM^2
- HIGH FREQUENCY, 150MHz TYPICAL
- ULTRA FAST, 150ns TYPICAL t_{on}
- BV_{CEO} 80 VOLTS MIN
- HIGH LINEAR GAIN, VERY LOW SATURATION
- 200°C OPERATING TEMPERATURE
- GOLD EUTECTIC DIE ATTACH

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	80	Volts
R_{BE} 1K Ohms	V_{CER}	150	
Collector - Base Voltage	V_{CBO}	150	Volts
Emitter - Base Voltage	V_{EBO}	6	Volts
Collector Current	I_C	10	Amps
Base Current	I_B	2	Amps
Total Device Dissipation @ $T_C = 25^\circ C$	P_D	10	Watts
Derate above 25 °C		66.6	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	$R_{\theta JC}$	15	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 10mA_{dc}$) ($I_C = 20\mu A_{dc}$, $R_{BE} = 1K\Omega$)	BV_{CEO} BV_{CER}	80 150		Vdc
Collector - Base Breakdown Voltage ($I_C = 20\mu A_{dc}$)	BV_{CBO}	150		Vdc
Emitter - Base Breakdown Voltage ($I_E = 20\mu A_{dc}$)	BV_{EBO}	6		Vdc

ELECTRICAL CHARACTERISTICS

Characteristics		Symbol	Min.	Max.	Unit
Collector Cutoff Current ($V_{CE} = 40 \text{ Vdc}$)		I_{CEO}		10	μAdc
Collector Cutoff Current ($V_{CB} = 100 \text{ Vdc}$)		I_{CBO}		10	μAdc
Emitter Cutoff Current ($V_{EB} = 4 \text{ Vdc}$)		I_{EBO}		1.0	μAdc
DC Current Gain* ($I_C = 500 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$) ($I_C = 1.0 \text{ Adc}$, $V_{CE} = 10 \text{ Vdc}$) ($I_C = 5.0 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$)		h_{FE}	50 50 50	200	
Collector - Emitter Saturation Voltage* ($I_C = 5.0 \text{ Adc}$, $I_B = 500 \text{ mAdc}$)		$V_{CE(SAT)}$		0.5	Vdc
Base - Emitter Saturation Voltage* ($I_C = 5.0 \text{ Adc}$, $I_B = 500 \text{ mAdc}$)		$V_{BE(SAT)}$		1.2	Vdc
Current - Gain - Bandwidth Product ($I_C = 500 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 1\text{MHz}$)		f_T	100		MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $f = 1 \text{ MHz}$)		C_{ob}		200	pf
Post Irradiation DC Current Gain* ($I_C = 1\text{Adc}$, $V_{CE} = 10\text{Vdc}$, $1 \times 10^{14} \text{ n/cm}^2$) (Fast Neutrons (n) at E = 10KeV Reactor Spectrum)		h_{FE}	10		
On Time	(V _{CC} = 30 Vdc, I _C = 5.0 Adc) (I _{B1} = I _{B2} = 500 mAdc)	t_{on}		200	ns
Off Time		t_{off}		800	ns

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

