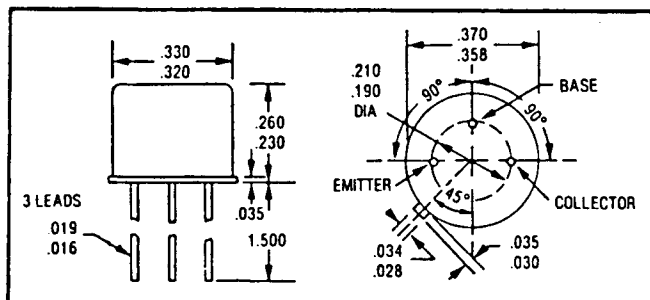




2N5151 AND 2N5153
5 AMP
HIGH SPEED PNP TRANSISTOR
100 VOLTS

14830 Valley View Avenue
La Mirada, California 90638
(213) 921-9660
TWX 910-583-4807
FAX 213-921-2396

CASE STYLE W
JEDEC TO-5



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING, 500 NSEC MAX t_{on}
- HIGH FREQUENCY, TYPICAL f_T 100 MHZ
- BVCEO 80 VOLTS MIN
- HIGH LINEAR GAIN, LOW SATURATION VOLTAGE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH
2N5152 AND 2N5154

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	5	Amps
Base Current	I_B	2.5	Amps
Total Device Dissipation @ $T_C = 50^\circ C$	P_D	10	Watts
Derate above $50^\circ C$		66.6	mW/ $^\circ C$
Operating and Storage Temperature	T_j, T_{stg}	-65 to +200	$^\circ C$

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	R _{θJC}	15	°C/W

ELECTRICAL CHARACTERISTICS

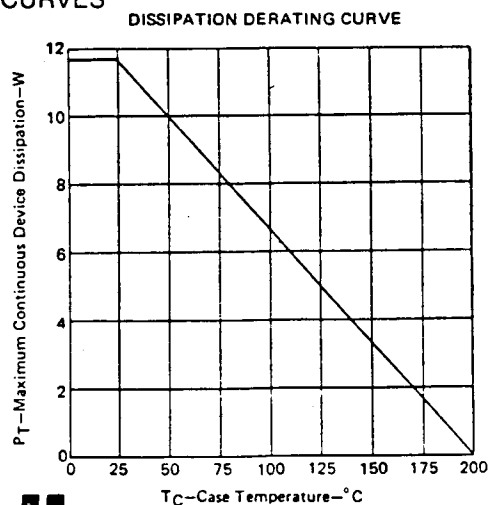
Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 100 \text{ mA dc}$)	BV_{CEO}^*	80		Vdc
Collector - Base Breakdown Voltage ($I_C = 200 \text{ uAdc}$)	BV_{CBO}	100		Vdc
Emitter - Base Breakdown Voltage ($I_E = 200 \text{ uAdc}$)	BV_{EBO}	5.5		Vdc

ELECTRICAL CHARACTERISTICS

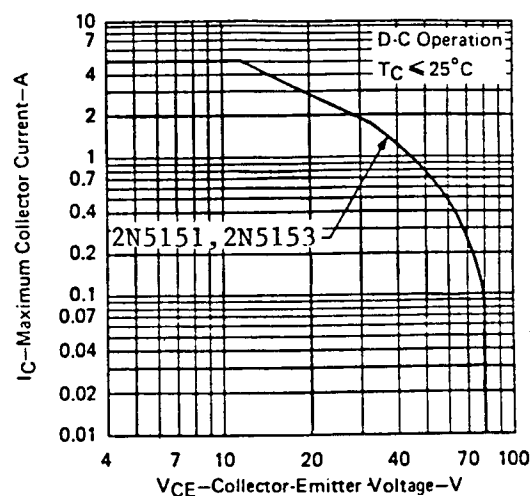
Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current ($V_{CE} = 40 \text{ Vdc}$)	I_{CEO}		50	μAdc
($V_{CE} = 60 \text{ Vdc}$, $V_{BE} = 2 \text{ Vdc}$, $T_C = 150^\circ\text{C}$)	I_{CEV}		500	μAdc
Collector Cutoff Current ($V_{CE} = 60 \text{ Vdc}$)	I_{CES}		1.0	μAdc
($V_{CE} = 100 \text{ Vdc}$)			1.0	mAdc
Emitter Cutoff Current ($V_{EB} = 4 \text{ Vdc}$)	I_{EBO}		1.0	μAdc
($V_{EB} = 5.5 \text{ Vdc}$)			1.0	mAdc
DC Current Gain*	h_{FE}	20		
($I_C = 50 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$)		50		
($I_C = 2.5 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$)		30	90	
($I_C = 5 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$)		70	200	
Collector - Emitter Saturation Voltage*	$V_{CE(SAT)}$		0.75	Vdc
($I_C = 2.5 \text{ Adc}$, $I_B = 250 \text{ mAdc}$)			1.5	
($I_C = 5 \text{ Adc}$, $I_B = 500 \text{ mAdc}$)				
Base - Emitter Saturation Voltage*	$V_{BE(SAT)}$		1.45	Vdc
($I_C = 2.5 \text{ Adc}$, $I_B = 250 \text{ mAdc}$)			2.2	
($I_C = 5 \text{ Adc}$, $I_B = 500 \text{ mAdc}$)				
Current - Gain - Bandwidth Product ($I_C = 500 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$, $f = 20 \text{ MHz}$)	f_T	60		MHz
		70		
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 1 \text{ MHz}$)	C_{ob}		250	pf
Base - Emitter Voltage *	$V_{BE(ON)}$		1.45	Vdc
($V_{CE} = 5 \text{ Vdc}$, $I_C = 2.5 \text{ Adc}$)				
Delay Time ($V_{CC} = 30 \text{ Vdc}$, $V_{FB}(\text{Off}) = 3.7 \text{ Vdc}$)	t_d			
Rise Time ($I_C = 5 \text{ Adc}$)	t_r		500	ns
Storage Time ($V_{EB}(\text{off}) = 3.7 \text{ Vdc}$)	t_s			
Fall Time ($I_{B1} = I_{B2} = 500 \text{ mAdc}$, $R_L = 6 \text{ Ohms}$)	t_f		1.3	μs

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

TYPICAL OPERATING CURVES



FORWARD BIAS DC SAFE OPERATION AREA (S.O.A.) CURVE
CURVES APPLY BELOW RATED V_{CEO} $T_C = 25^\circ\text{C}$



SOLID STATE DEVICES, INC.