

X00145

2N5151 AND 2N5153

5 AMP

HIGH SPEED PNP TRANSISTOR

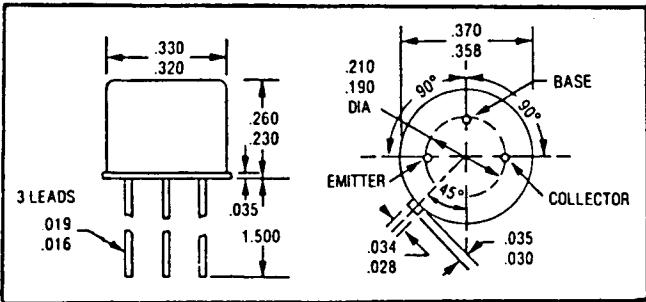
100 VOLTS



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CASE STYLE W

JEDEC TO-5



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING, 500 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 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 °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

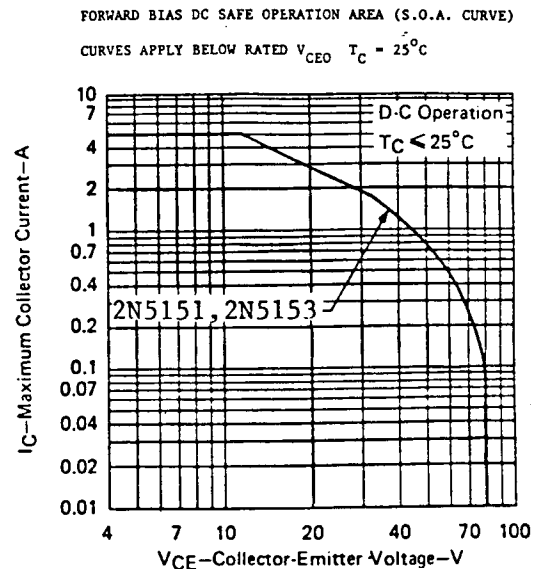
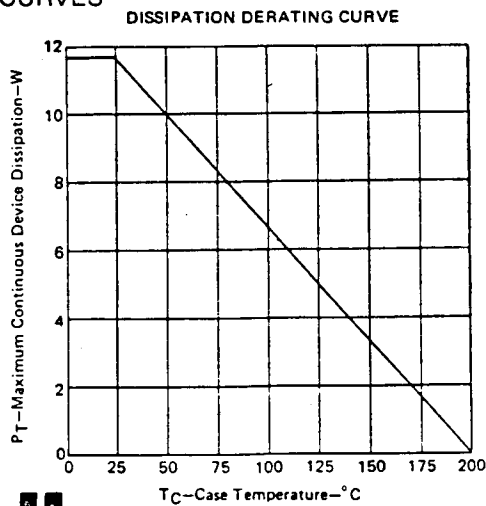
Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 100$ mA dc)	BV_{CE0}	80		Vdc
Collector - Base Breakdown Voltage ($I_C = 200$ uA dc)	BV_{CB0}	100		Vdc
Emitter - Base Breakdown Voltage ($I_E = 200$ uA dc)	BV_{EB0}	5.5		Vdc

ELECTRICAL CHARACTERISTICS

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

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

TYPICAL OPERATING CURVES



SSDI SOLID STATE DEVICES, INC.