

X00117

2N5152 AND 2N5154

5 AMP

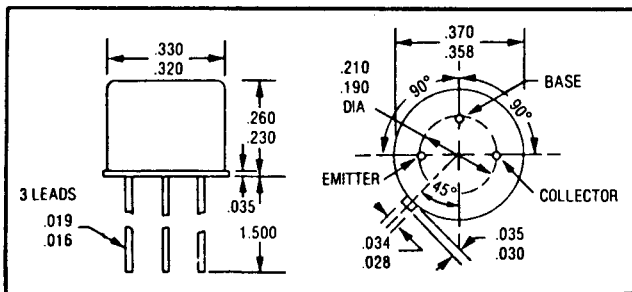
HIGH SPEED NPN TRANSISTOR

100 VOLTS

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La Mirada, California 90638
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TWX 910-583-4807
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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 2N5151 AND 2N5153

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

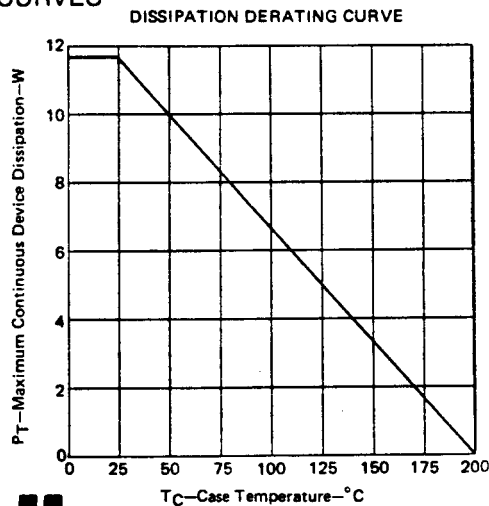
Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 100$ mA Dc)	BV_{CE0}	80		Vdc
Collector - Base Breakdown Voltage ($I_C = 200$ μ A Dc)	BV_{CB0}	100		Vdc
Emitter - Base Breakdown Voltage ($I_E = 200$ μ A Dc)	BV_{EB0}	5.5		Vdc

ELECTRICAL CHARACTERISTICS

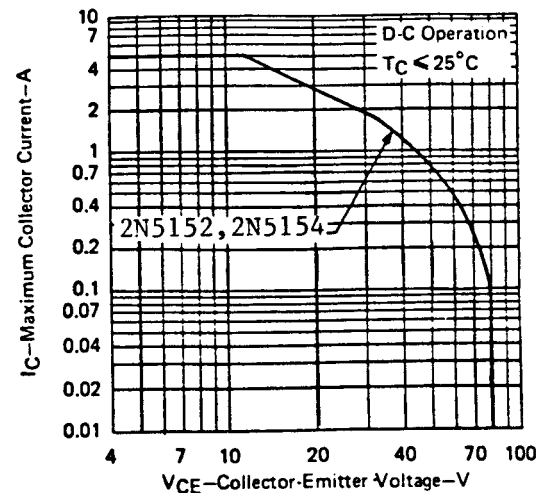
Characteristics		Symbol	Min.	Max.	Unit
Collector Cutoff Current (VCE = 40 Vdc)		ICEO ICEV		50	uAdc
(VCE = 60 Vdc, VBE = 2 Vdc, TC = 150°C)				500	uAdc
Collector Cutoff Current (VCE = 60 Vdc)		ICES		1.0	uAdc
(VCE = 100 Vdc)				1.0	mAdc
Emitter Cutoff Current (VEB = 4 Vdc)		IEBO		1.0	uAdc
(VEB = 5.5 Vdc)				1.0	mAdc
DC Current Gain*		hFE*	2N5152	20	
(IC = 50 mAdc, VCE = 5 Vdc)	2N5154		50		
(IC = 2.5 Adc, VCE = 5 Vdc)	2N5152		30	90	
(IC = 5 Adc, VCE = 5 Vdc)	2N5154		70	200	
Collector - Emitter Saturation Voltage*		VCE (SAT)*		0.75	Vdc
(IC = 2.5 Adc, IB = 250 mAdc)				1.5	
Base - Emitter Saturation Voltage*		VBE (SAT)*		1.45	Vdc
(IC = 5 Adc, IB = 500 mAdc)				2.2	
Current - Gain - Bandwidth Product (IC = 500 mAdc, VCE = 5 Vdc, f = 20 MHz)		fT	60 70		MHz
Output Capacitance (VCB = 10 Vdc, IE = 0, f = 1 MHz)		Cob		250	pf
Base - Emitter Voltage * (VCE = 5 Vdc, IC = 2.5 Adc)		VBE (ON)*		1.45	Vdc
Delay Time	(VCC = 30 Vdc, IC = 5 Adc, VBE (off) = 3.7 Vdc, IB1 = IB2 = 500 mAdc, RL = 6 Ohms)	td			
Rise Time		tr +		500	ns
Storage Time		tS +			
Fall Time		tf +		1.3	us

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

TYPICAL OPERATING CURVES



FORWARD BIAS DC SAFE OPERATION AREA (S.O.A. CURVE)
CURVES APPLY BELOW RATED VCEO IC = 25°C



SSDI

SOLID STATE DEVICES, INC.