



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

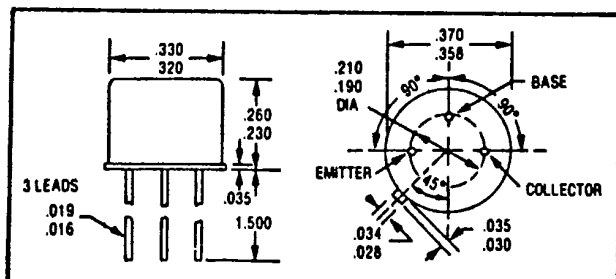
SFT6900

3 AMP

HIGH VOLTAGE PNP TRANSISTOR

500 VOLTS

CASE STYLE W JEDEC TO-5



FEATURES

- BV_{CEO} TO 400 VOLTS
- LOW SATURATION VOLTAGE
- VERY LOW LEAKAGE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- HIGH LINEAR GAIN FROM 1 mA TO 1 AMP
- DESIGNED FOR COMPLEMENTARY USE WITH SFT6800 (NPN) AND 2N5663 SERIES

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V _{CEO}	400	Volts
R _{BE} = 1 K Ohms	V _{CER}	500	
Collector - Base Voltage	V _{CBO}	500	Volts
Emitter - Base Voltage	V _{EBO}	9	Volts
Collector Current	I _C	3	Amps
Base Current	I _B	1	Amps
Total Device Dissipation @ TC = 25 °C	P _D	5	Watts
Derate above 25 °C		160	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 _{θJC}	6	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage*	BV _{CEO}	400		V _{dc}
(I _C = 50 mA _{dc} , T _p = 300 usec)	BV _{CER}	500		
(I _C = 100 uA _{dc} , R _{BE} = 1 K ohms)				
Collector - Base Breakdown Voltage	BV _{CBO}	500		V _{dc}
(I _C = 100 uA _{dc})				
Emitter - Base Breakdown Voltage	BV _{EBO}	9		V _{dc}
(I _E = 20 uA _{dc})				

ELECTRICAL CHARACTERISTICS

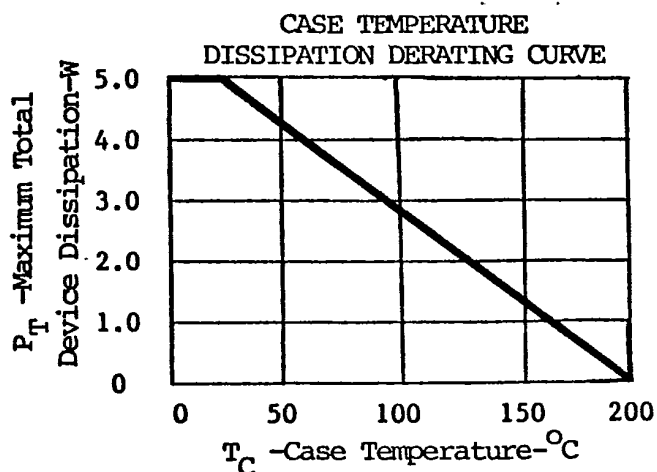
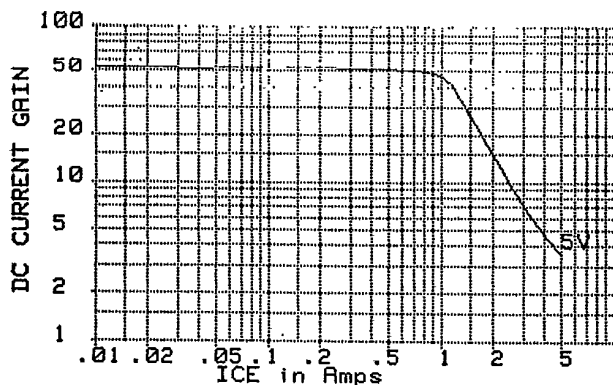
Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current ($V_{CE} = 400 \text{ Vdc}, V_{BE} = -1.5 \text{ Vdc}$)	I_{CEV}		200	n Adc
Collector Cutoff Current ($V_{CB} = 400 \text{ Vdc}$)	I_{CBO}		200	n Adc
Emitter Cutoff Current ($V_{EB} = 6.0 \text{ Vdc}$)	I_{EBO}		200	n Adc
DC Current Gain* ($I_C = 50 \text{ mAdc}, V_{CE} = 5 \text{ Vdc}$) ($I_C = 500 \text{ mAdc}, V_{CE} = 5 \text{ Vdc}$) ($I_C = 1.0 \text{ Adc}, V_{CE} = 5 \text{ Vdc}$)	h_{FE}	40 35 25	200 250	
Collector - Emitter Saturation Voltage* ($I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$) ($I_C = 1.0 \text{ Adc}, I_B = 100 \text{ mAdc}$)	$V_{CE (SAT)}$		400 500	m Vdc.
Base - Emitter Saturation Voltage* ($I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$) ($I_C = 1.0 \text{ Adc}, I_B = 100 \text{ mAdc}$)	$V_{BE (SAT)}$		0.9 1.0	Vdc
Current - Gain - Bandwidth Product ($I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 20 \text{ MHz}$)	f_T	25		MHz
Output Capacitance ($V_{CB} = 30 \text{ Vdc}, I_E = 0, f = 1.0 \text{ Hz}$)	C_{ob}		150	pf

SWITCHING TIMES

Delay Time	($I_C = 1.0 \text{ Adc},$ $V_{CC} = 150 \text{ Vdc},$ $I_{B1} = I_{B2} = 100 \text{ mAdc}$)	t_d			
Rise Time		t_r	+	450	ns
Storage Time		t_s			
Fall Time		t_f	+	1.8	us

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

TYPICAL OPERATING CURVES



SSDI

SOLID STATE DEVICES, INC.

2N5151 AND 2N5153

5 AMP

HIGH SPEED PNP TRANSISTOR

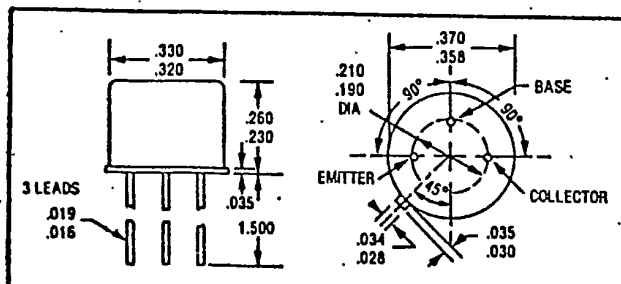
100 VOLTS



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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_{CEO} 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_{CEO}	80	Volts
Collector - Base Voltage	V_{CBO}	100	Volts
Emitter - Base Voltage	V_{EBO}	5.5	Volts
Collector Current	I_C	5	Amps
Base Current	I_B	2.5	Amps
Total Device Dissipation @ $T_C = 50^\circ\text{C}$	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

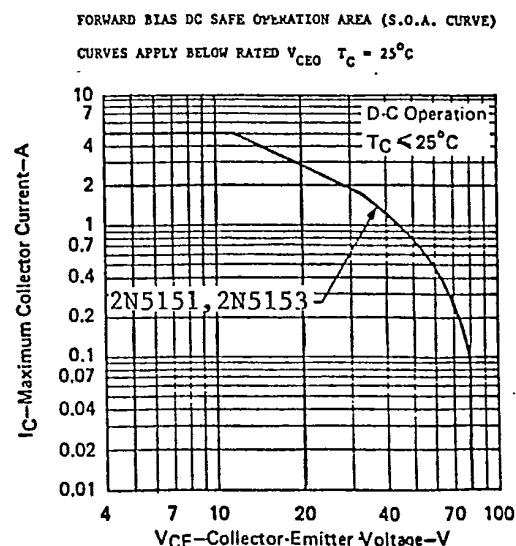
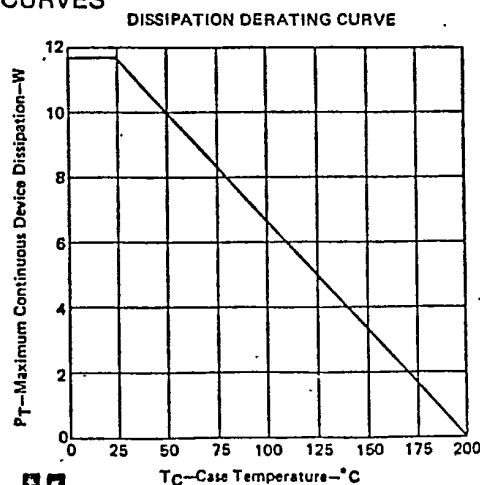
Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 100$ mA dc)	BV_{CEO}^*	80		Vdc
Collector - Base Breakdown Voltage ($I_C = 200$ uA dc)	BV_{CBO}	100		Vdc
Emitter - Base Breakdown Voltage ($I_E = 200$ uA dc)	BV_{EBO}	5.5		Vdc

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*				
($I_C = 50 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$)	h_{FE}	20		
($I_C = 2.5 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$)		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	f_T	60		MHz
($I_C = 500 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$, $f = 20 \text{ MHz}$)		70		
Output Capacitance	C_{ob}		250	pf
($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 1 \text{ MHz}$)				
Base - Emitter Voltage *	$V_{BE(ON)}$		1.45	Vdc
($V_{CE} = 5 \text{ Vdc}$, $I_C = 2.5 \text{ Adc}$)				
Delay Time	t_d			ns
Rise Time	t_r		500	
Storage Time	t_s			us
Fall Time	t_f		1.3	
($V_{CC} = 30 \text{ Vdc}$, $V_{EB}(\text{Off}) = 3.7 \text{ Vdc}$)				
($I_C = 5 \text{ Adc}$)				
($V_{EB}(\text{off}) = 3.7 \text{ Vdc}$)				
($I_{B1} = I_{B2} = 500 \text{ mAdc}$, $R_L = 6 \text{ Ohms}$)				

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

TYPICAL OPERATING CURVES



SOLID STATE DEVICES, INC.

PRELIMINARY DATA SHEET

SFT501 AND SFT503

5 AMP

HIGH SPEED PNP TRANSISTOR

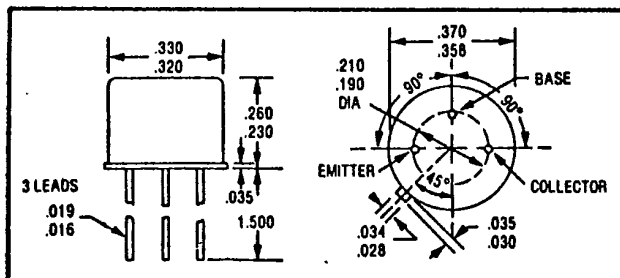
200 VOLTS



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CASE STYLE W

JEDEC TO-5



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING
- HIGH FREQUENCY, 100 MHZ TYPICAL
- BV_{CEO} 150 VOLTS MIN.
- HIGH LINEAR GAIN
- VERY LOW LEAKAGE AND SATURATION
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH SFT502 AND SFT504

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V _{CEO}	150	Volts
Collector - Base Voltage	V _{CBO}	200	Volts
Emitter - Base Voltage	V _{EB0}	7	Volts
Collector Current	I _C	5	Amps
Base Current	I _B	1	Amps
Total Device Dissipation @ TC = 50°C	P _D	10	Watts
Derate above 50 °C		66.6	W/°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 _{θJC}	15	°C/W

ELECTRICAL CHARACTERISTICS

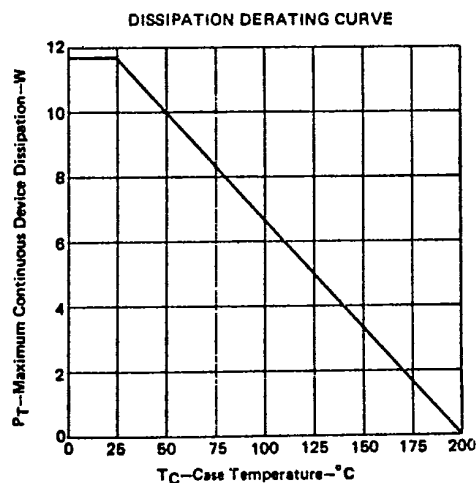
Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I _C = 50 mA _{dc})	BV _{CEO} *	150		V _{dc}
Collector - Base Breakdown Voltage (I _C = 200 μA _{dc})	BV _{CBO}	200		V _{dc}
Emitter - Base Breakdown Voltage (I _E = 200 μA _{dc})	BV _{EB0}	10		V _{dc}

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current $V_{CE} = 100 \text{ Vdc}$	I_{CEO}		1	μAdc
Collector Cutoff Current $V_{CB} = 100 \text{ Vdc}$	I_{CBO}		500	$n\text{Adc}$
Emitter Cutoff Current $V_{EB} = 6 \text{ Vdc}$	I_{EBO}		500	$n\text{Adc}$
DC Current Gain* $(I_C = 50 \text{ mAdc}, V_{CE} = 5 \text{ Vdc})$ $(I_C = 2.5 \text{ Adc}, V_{CE} = 5 \text{ Vdc})$ $(I_C = 5 \text{ Adc}, V_{CE} = 5 \text{ Vdc})$	h_{FE}	20 50 30 50 20 40		
Collector - Emitter Saturation Voltage* $(I_C = 2.5 \text{ Adc}, I_B = 250 \text{ mAdc})$ $(I_C = 5 \text{ Adc}, I_B = 500 \text{ mAdc})$	$V_{CE (SAT)}$		0.75 1.5	Vdc
Base - Emitter Saturation Voltage* $(I_C = 2.5 \text{ Adc}, I_B = 250 \text{ mAdc})$ $(I_C = 5 \text{ Adc}, I_B = 500 \text{ mAdc})$	$V_{BE (SAT)}$		1.3 1.5	Vdc
Current - Gain - Bandwidth Product $(I_C = 500 \text{ mAdc}, V_{CE} = 5 \text{ Vdc}, f = 10 \text{ MHz})$	f_T	80		MHz
Output Capacitance $(V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 1 \text{ MHz})$	C_{ob}		225	pf
Input Capacitance $(V_{BE} = 10 \text{ Vdc}, I_C = 0, f = 1 \text{ MHz})$	C_{ib}		600	pf
Delay Time	t_d		50	ns
Rise Time	t_r		250	ns
Storage Time	t_s		900	ns
Fall Time	t_f		300	ns

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

TYPICAL OPERATING CURVES



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