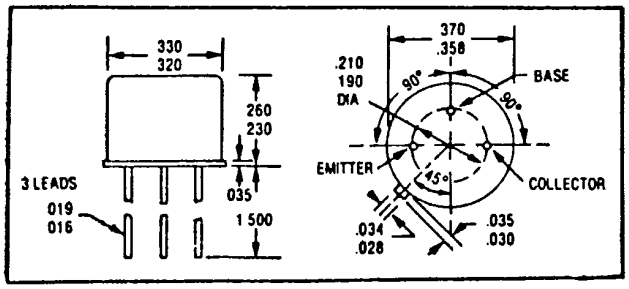
SFT 8500
2 AMP
HIGH VOLTAGE NPN TRANSISTOR
1000 VOLTS

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

- BVCEO 600 VOLTS MIN.
- LOW V_{CE} (SAT) 0.8V
- 175°C OPERATING, GOLD EUTECTIC DIE ATTACH
- LINEAR GAIN FROM 10mA TO 500mA
- HIGH SPEED
- GLASS PASSIVATED
- REPLACES PRODUCT PREVIOUSLY AVAILABLE IN TO-3 ONLY

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage R_{BE} - 1K Ohms	V_{CEO} V_{CER}	600 1000	Volts Volts
Collector - Base Voltage	V_{CBO}	1000	Volts
Emitter - Base Voltage	V_{EBO}	6	Volts
Collector Current	I_C	2	Amps
Base Current	I_B	.75	mAmps
Total Device Dissipation @ TC = 25°C @ TA = 25°C Unheatsunk	P_D	10 1.0	Watts Watts
Operating and Storage Temperature	Tj, Tstg	-65 to +175°	C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC, (RθJA)	15, (150)	C W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I_C = 10 mAdc) (I_C = 20 uAdc, R_{BE} = 1K ohms)	 BV_{CEO}* BV_{CER}*	 600 1000		 Vdc Vdc
Collector - Base Breakdown Voltage (I_C = 20 uAdc)	BV_{CBO}	1000		Vdc
Emitter - Base Breakdown Voltage (I_E = 20 uAdc)	BV_{EBO}	6		Vdc

NOTE. All specifications subject to change without notice

ELECTRICAL CHARACTERISTICS

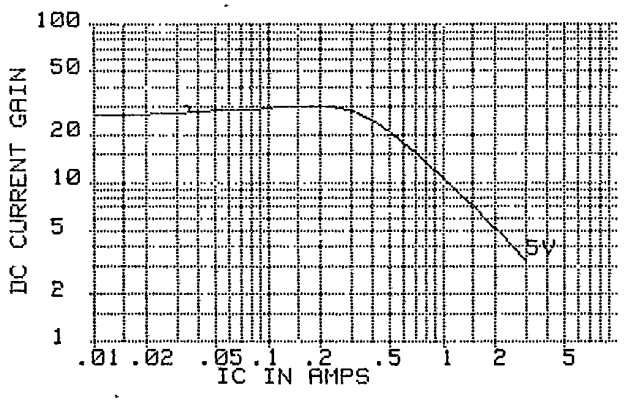
Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current (V_{CE} = 800V)	I_{CES}		10	uAdc
Collector Cutoff Current (V_{CB} = 800V)	I_{CBO}		10	uAdc
Emitter Cutoff Current (V_{EB} = 4V)	I_{EBO}		10	uAdc
DC Current Gain* (I_C 20 m Adc. V_{CE} 5 Vdc)	h_{FE}*	20	100	
(I_C - 100 m Adc. V_{CE} 5 Vdc)		20	100	
(I_C - 500 m Adc. V_{CE} - 5 Vdc)		15	100	
Collector - Emitter Saturation Voltage* (I_C = 300 m Adc. I_B 30 m Adc)	$V_{CE\ (SAT)}$*		0.8	Vdc
(I_C = 1 Adc. I_B 300 m Adc)			1.0	Vdc
Base - Emitter Saturation Voltage* (I_C = 1 Adc, I_B = 200 mAdc)	$V_{BE\ (SAT)}$*		1.1	Vdc
Current - Gain - Bandwith Product (I_C = 100 m Adc V_{CE} 5 Vdc. f 1 MHz)	f_T	30		MH_Z
Output Capacitance (V_{CB} = 20 Vdc. I_E = 0. f = 1 MHz)	C_{ob}		25	

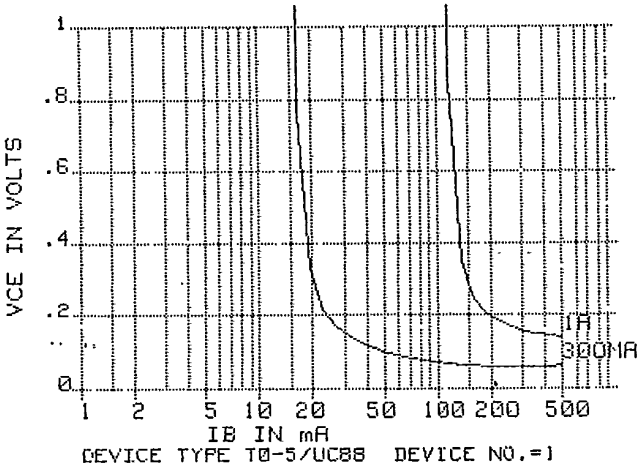
SWITCHING TIMES

Delay Time	(V_{CC} = 125 Vdc.	t_d		150	ns
Rise Time	I_C = 2 Adc, $IB_1 = IB_2$ = .2A)	t_r		200	ns
Storage Time		t_s*		3000	ns
Fall Time		t_f		300	ns

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

TYPICAL OPERATING CURVES





SOLID STATE DEVICES, INC.

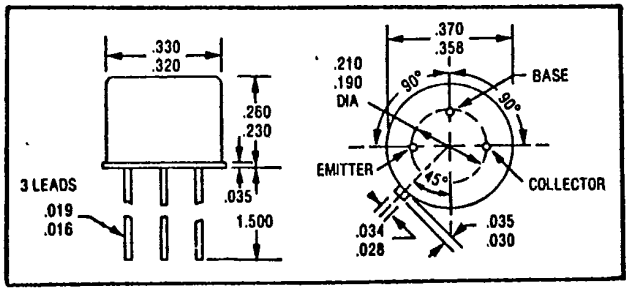
P.O. Box 577, La Mirada, California 90637

Telephone: (213) 921-9660 • TWX 910-583-4807 • FAX#213-921-2396

SFT6800
3 AMP
HIGH VOLTAGE NPN TRANSISTOR
800 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

- BVCEO 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
- SUPERIOR PERFORMANCE OVER THE POPULAR 2N5662 AND 2N5663 SERIES
- DESIGNED FOR COMPLEMENTARY USE WITH SFT6900 (PNP)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	400	Volts
R_{BE} = 1 K Ohms	V_{CER}	800	
Collector - Base Voltage	V_{CBO}	800	Volts
Emitter - Base Voltage	V_{EBO}	10	Volts
Collector Current	I_C	3.0	Amps
Base Current	I_B	1.0	Amps
Total Device Dissipation @ TC = 25 °C	P_D	5.0	Watts
Derate above 25 °C		160	mW/°C
Operating and Storage Temperature	Tj, Tstg	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC	6	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage*				
(I_C = 50 m Adc) Tp = 300 uSec	BV_{CEO}*	400		Vdc
(I_C = 100 u Adc, R_{BE} = 1 K ohms)	BV_{CER}*	800		
Collector - Base Breakdown Voltage				Vdc
(I_C = 100 uAdc)	BV_{CBO}	800		
Emitter - Base Breakdown Voltage				
(I_E = 20 uAdc)	BV_{EBO}	10		Vdc

NOTE: All specifications subject to change without notice.

ELECTRICAL CHARACTERISTICS

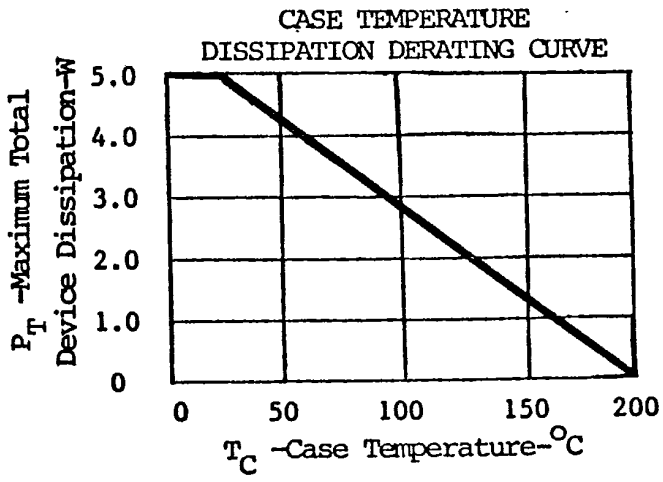
Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current (V_{CE} =400 Vdc V_{BE} = -1.5 Vdc)	$I_{CE}V$		200	nAdc
Collector Cutoff Current (V_{CB} =400 Vdc)	I_{CBO}		200	nAdc
Emitter Cutoff Current (V_{EB} = 6 Vdc)	I_{EBO}		200	nAdc
DC Current Gain* (I_C = 50 mAdc, V_{CE} = 5 Vdc) (I_C = 500 mAdc, V_{CE} = 5 Vdc) (I_C = 1.0 Adc, V_{CE} = 5 Vdc)	h_{FE}*	50 40 25	250 200	
Collector - Emitter Saturation Voltage* (I_C = 500 mAdc, I_B = 50 mAdc) (I_C = 1.0 mAdc, I_B = 100 mAdc)	$V_{CE\ (SAT)}$*		500 600	mVdc
Base - Emitter Saturation Voltage* (I_C = 500 mAdc, I_B = 50 mAdc) (I_C = 1.0 mAdc, I_B = 100 mAdc)	$V_{BE\ (SAT)}$*		1.0 1.2	Vdc
Current - Gain - Bandwith Product (I_C = 50 mAdc V_{CE} = 10 Vdc, f = 20 MHz)	f_T	25		MHz
Output Capacitance (V_{CB} = 30 Vdc, I_E = 0, f = 2 MHz)	C_{ob}		40	pf

SWITCHING TIMES

Delay Time Rise Time	(V_{CC} = 150 Vdc, I_C = 1.0 Adc, $I_{B1} = I_{B2}$ = 100 mAdc)	t_d + t_r		350	ns
Storage Time Fall Time		t_s + t_f		2.0	us

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

TYPICAL OPERATING CURVES



SSDI SOLID STATE DEVICES, INC.

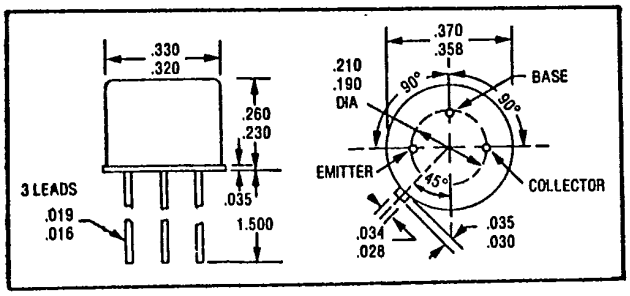
P.O. Box 577, La Mirada, California 90637

Telephone: (213) 921-9660 • TWX 910-583-4807 • FAX#213-921-2396

2N5152 AND 2N5154
5 AMP
HIGH SPEED NPN TRANSISTOR
100 VOLTS

SSDI
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 ton
- 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 2N5151 AND 2N5153

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 @ TC = 50 °C Derate above 50 °C	P_D	10 66.6	Watts mW/°C
Operating and Storage Temperature	Tj, Tstg	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC	15	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I_C = 100 m Adc)	BV_{CEO}*	80		Vdc
Collector - Base Breakdown Voltage (I_C = 200 u Adc)	BV_{CBO}	100		Vdc
Emitter - Base Breakdown Voltage (I_E = 200 uAdc)	BV_{EBO}	5.5		Vdc

NOTE: All specifications subject to change without notice.

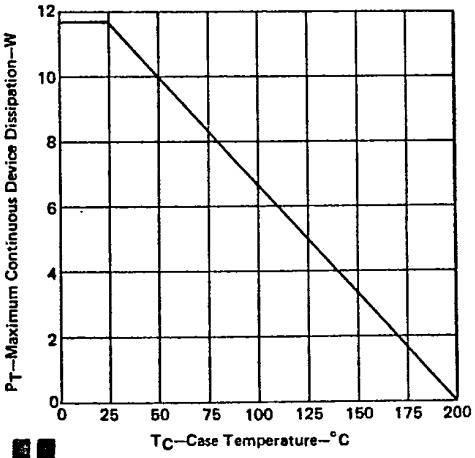
ELECTRICAL CHARACTERISTICS

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*	2N5152 2N5154	h_{FE}*	20 50		
(I_C = 50 mAdc, V_{CE} = 5 Vdc)	2N5152		30	90	
(I_C = 2.5 Adc, V_{CE} = 5 Vdc)	2N5154		70	200	
(I_C = 5 Adc, V_{CE} = 5 Vdc)	2N5152 2N5154		20 40		
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 - Bandwith Product (I_C = 500 mAdc, V_{CE} = 5 Vdc, f = 20 MHz)	2N5152 2N5154	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 Rise Time	(V_{CC} = 30 Vdc, I_C = 5 Adc, (t_{on})	t_d t_r +		500	ns
Storage Time Fall Time	V_{EB} (off) = 3.7 Vdc., (t_{off}) I_{B1} = I_{B2} = 500 mAdc, R_L = 6 Ohms)	t_s t_f +		1.3	us

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

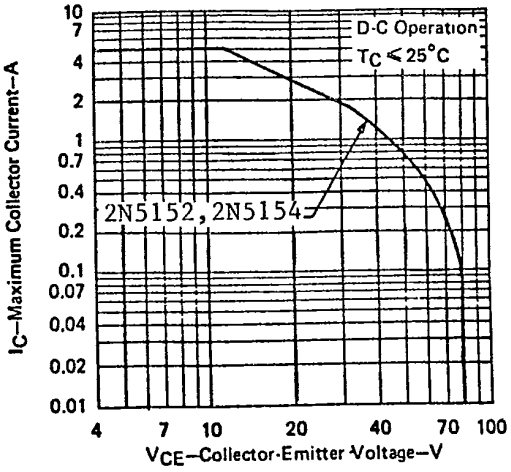
TYPICAL OPERATING CURVES

DISSIPATION DERATING CURVE



FORWARD BIAS DC SAFE OPERATION AREA (S.O.A. CURVE)

CURVES APPLY BELOW RATED V_{CEO} T_C = 25°C



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