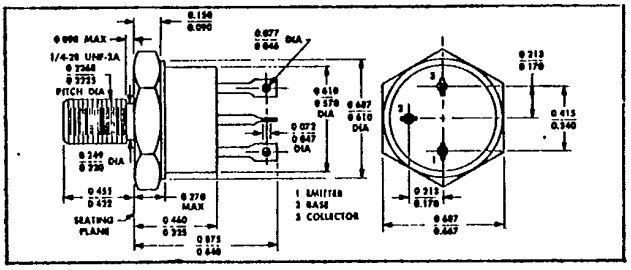
2N5330
30 AMP
HIGH SPEED NPN TRANSISTOR
150 VOLTS

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

CASE STYLE T
JEDEC TO-61
ALL TERMINALS ISOLATED FROM CASE



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING, 350 NSEC MAX ton
- HIGH FREQUENCY, TYPICAL f_T 100 MHZ
- BVCEO 90 VOLTS MIN, TYPICALLY 150 VOLTS
- HIGH LINEAR GAIN, LOW SATURATION VOLTAGE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH SPT5330

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	90	Volts
Collector - Base Voltage	V_{CBO}	150	Volts
Emitter - Base Voltage	V_{EBO}	8	Volts
Collector Current	I_C	30	Amps
Base Current	I_B	5	Amps
Total Device Dissipation @ TC = 100°C Derate above 100 °C	P_D	80 800	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	1.25	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I_C = 100 mAdc)	BV_{CEO}*	90		Vdc
Collector - Base Breakdown Voltage (I_C = 200 uAdc)	BV_{CBO}	150		Vdc
Emitter - Base Breakdown Voltage (I_E = 200 uAdc)	BV_{EBO}	8		Vdc

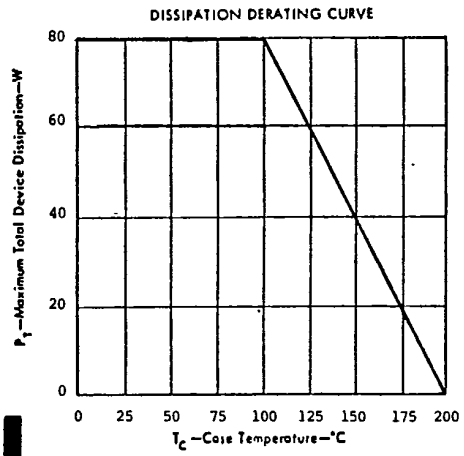
NOTE: All specifications subject to change without notice.

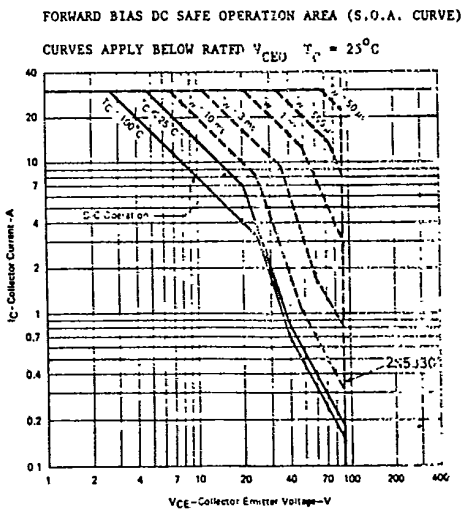
ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current (V_{CE}= 150 Vdc, V_{BE}= 500 mVdc)	I_{CEV}		10**	mAdc
Collector Cutoff Current (V_{CE}= 150 Vdc, V_{BE} = 500 mVdc, TC= 150°C)	I_{CEV}		50***	mAdc
Emitter Cutoff Current (V_{EB} = 8 Vdc)	I_{EBO}		5	mAdc
DC Current Gain* (I_C = 10 Adc, V_{CE} = 2 Vdc) (I_C = 30 Adc, V_{CE} = 3 Vdc)	h_{FE}*	40 10	120 50	
Collector - Emitter Saturation Voltage* (I_C = 10 Adc, I_B = 500 mAdc) (I_C = 30 Adc, I_B = 3 Adc)	$V_{CE\ (SAT)}$*		0.6 1.8	Vdc
Base - Emitter Saturation Voltage* (I_C = 10 Adc, I_B = 300 mAdc) (I_C = 30 Adc, I_B = 3 Adc)	$V_{BE\ (SAT)}$*		1.3 1.8	Vdc
Current - Gain - Bandwith Product (I_C = 3 Adc, V_{CE} = 10 Vdc, f = 10 MHz)	f_T	80		MHz
Output Capacitance (V_{CB} = 10 Vdc I_E = 0, f = 1 MHz)	C_{ob}		500	pf
Input Capacitance (V_{BE} = 1.0 Vdc, I_C = 0, f = 1 MHz)	C_{ib}		1250	pf
Delay Time / Rise Time (V_{CC} = 21 Vdc. I_C = 10 Adc, I_{B1} = I_{B2} = 500 mAdc)	t_d + t_r (t_{on})		350	ns
Storage Time / Fall Time (V_{CC} = 21 Vdc. I_C = 10 Adc, I_{B1} = I_{B2} = 500 mAdc)	t_s + t_f (t_{off})		1.25	us

*Pulse Test: Pulse width = 300 us, DutyCycle = 2% **Typically 1 uAdc ***Typically 50 uAdc

TYPICAL OPERATING CURVES





SSDI SOLID STATE DEVICES, INC.

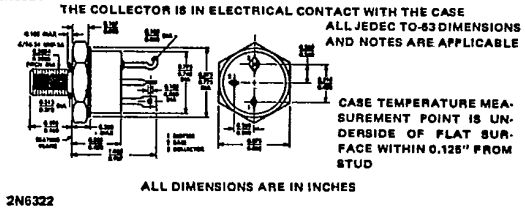
P.O. Box 577, La Mirada, California 90637 Telephone: (213) 921-9660 • TWX 910-583-4807 • FAX#213-921-2396

2N6322 AND 2N6324
30 AMP NPN
HIGH VOLTAGE/HIGH ENERGY
200 VOLTS

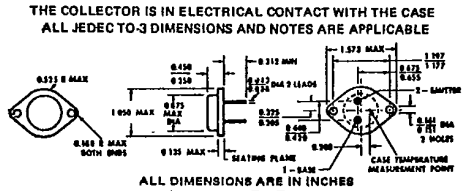
SSDI
14830 Valley View Avenue
La Mirada, California 90638
(213) 921-9660
TWX 910-583-4807
FAX 213-921-2396

T-33-15

2N6324



2N6322



FEATURES

- MINIMUM BVCEO 200V
- MINIMUM UNCLAMPED ES/B 100mJ
- 200 WATTS AT 100°C CASE TEMPERATURE
- 30 AMP CONTINUOUS COLLECTOR CURRENT
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	200	Volts
Collector - Base Voltage	V_{CBO}	300	Volts
Emitter - Base Voltage	V_{EBO}	5	Volts
Collector Current	I_C	30	Amps
Base Current	I_B	10	Amps
Total Device Dissipation @ TC = 100 °C Derate above 100°C	P_D	200	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	0.5	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I_C = 30 mAdc)	BV_{CEO}*	200		Vdc
Collector - Base Breakdown Voltage (I_C = 20 uAdc)	BV_{CBO}	300		Vdc
Emitter - Base Breakdown Voltage (I_E = 20 uAdc)	BV_{EBO}	5		Vdc

NOTE: All specifications subject to change without notice.

ELECTRICAL CHARACTERISTICS

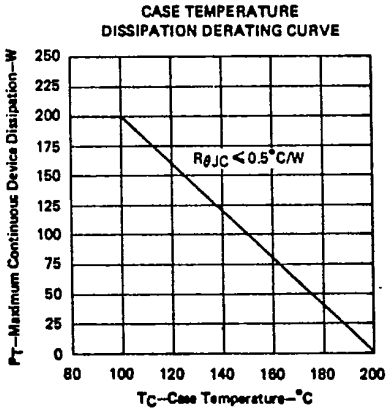
Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current V_{CE} = 300V V_{BE} = 0V	I_{CES}		2	mAdc
Collector Cutoff Current (V_{CE} = 100V)	I_{CEO}		5	mAdc
Emitter Cutoff Current (V_{EB} = 5V)	I_{EBO}		5	mAdc
DC Current Gain* (I_C = 5 Adc, V_{CE} = 5 Vdc) (I_C = 20 Adc, V_{CE} = 5 Vdc) (I_C = 30 Adc, V_{CE} = 5 Vdc)	h_{FE}*	40 12 6	150	
Collector - Emitter Saturation Voltage* (I_C = 20 Adc, I_B = 2 Adc) (I_C = 30 Adc, I_B = 6 Adc)	$V_{CE\ (SAT)}$*		1.5 3.0	Vdc
Base - Emitter Voltage* (I_C = 30 Adc, V_{CE} = 5 V)	V_{BE} (on)*		2.5	Vdc
Current - Gain - Bandwith Product (I_C = 1 Adc V_{CE} = 10 Vdc, f = 5 MH_Z)	f_T	10		MH_Z

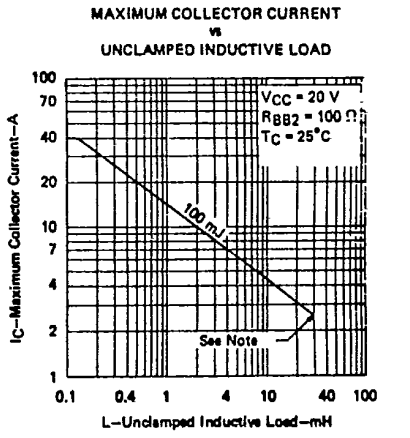
SWITCHING TIMES

Delay Time Rise Time	(V_{CC} = 40 Vdc, V_{EB} (Off) = 3 Vdc. I_C = 20 Adc t(on)	t_d t_r +		800	ns
Storage Time Fall Time	I_{B1} = I_{B2} = 2 Adc) t(off)	t_s + t_f		3.0	us

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

TYPICAL OPERATING CURVES





NOTE: ABOVE THIS POINT THE SAFE OPERATING AREA HAS NOT BEEN DEFINED.

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T-33-13

Preliminary Data Sheet

SOLID STATE DEVICES INC 12E D 8366011 0002097 1

SFT5671 AND SFT5672

30 AMP

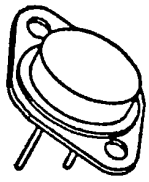
HIGH POWER NPN TRANSISTORS

200 AND 250 VOLTS

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

CASE STYLE R

TO—3 WITH .060 PINS



FEATURES

- BVCBO TO 250 VOLTS
- HIGH POWER 150 WATTS
- 200°C OPERATING TEMPERATURE
- GOLD EUTECTIC DIE ATTACH
- SUPERIOR PERFORMANCE TO 2N5671 AND 2N5672

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Collector - Emitter Voltage	SFT5671	V_{CEO}	120	Volts
	SFT5672		140	
Collector - Base Voltage	SFT5671 : SFT5672	V_{CBO}	200 : 250	Volts
Emitter - Base Voltage		V_{EBO}	8	Volts
Collector Current		I_C	30	Amps
Base Current		I_B	10	Amps
Total Device Dissipation @ TC = 25 °C		P_D	150	Watts
Derate above 25 °C			1.0	W/ C
Operating and Storage Temperature		Tj, Tstg	-65 to 200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC	1.0	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics		Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage*	SFT5671		120		
(I_C = 200 mAdc)	SFT5672	BV_{CEO}*	140		Vdc
(I_C = 200 mAdc, R_{BE} = 1000 ohms)	SFT5671	BV_{CER}*	200		
	SFT5672		250		
Collector - Base Breakdown Voltage	SFT5671		200		Vdc
(I_C = 200 mAdc)	SFT5672	BV_{CBO}	250		
Emitter - Base Breakdown Voltage (I_E = 100 uAdc)		BV_{EBO}	8		Vdc

NOTE: All specifications subject to change without notice.

ELECTRICAL CHARACTERISTICS

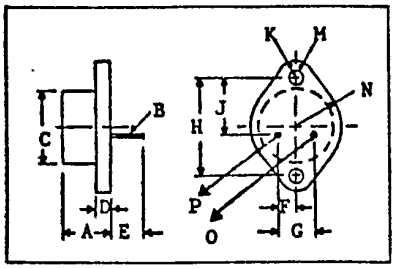
Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current V_{CE} = 80 Vdc	I_{CEO}		50	uAdc
Collector Cutoff Current (V_{CB} = 150Vdc, SFT5671) (V_{CB} = 200Vdc, SFT5672)	I_{CBO}		10	uAdc
Emitter Cutoff Current (V_{EB} = 7Vdc)	I_{EBO}		5	uAdc
DC Current Gain* (I_C = 15 Adc, V_{CE} = 2 Vdc) (I_C = 20 Adc, V_{CE} = 5 Vdc) (I_C = 30 Adc, V_{CE} = 5 Vdc)	h_{FE}*	30 25 20	100	
Collector - Emitter Saturation Voltage* (I_C = 15 Adc, I_B = 1.2 Adc) (I_C = 30 Adc, I_B = 6 Adc)	$V_{CE(SAT)}$*		0.75 5.0	Vdc
Base - Emitter Saturation Voltage* (I_C = 15 Adc, I_B = 1.2 Adc)	$V_{BE(SAT)}$*		1.5	Vdc
Small Signal Common-Emitter Forward Current Transfer Ratio (I_C = 2 Adc V_{CE} = 10 Vdc f 5 MHz)	$\|h_{fe}\|$	30		
Output Capacitance (V_{CB} = 10 Vdc I_E = 0 f = 1 MHz)	C_{ob}		500	pf

SWITCHING TIME

Turn on time	(V_{CC} = 30 Vdc. I_C = 15 Adc. I_{B1} = 1.2 Adc)	t_{on}		500	ns
Turn off time	(V_{CC} = 30 Vdc. I_C = 15 Adc. I_{B1} = I_{B2} = 1.2 Adc)	t_{off}		1.5	us

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

PHYSICAL DIMENSIONS



KEY TO DIMENSIONS:

(Inches)

A =	.250 - .450
B =	.057 - .062
C =	.875 MAX.
D =	.135 MAX.
E =	.312 MIN.
F =	.205 - .225
G =	.420 - .440
H =	1.177 - 1.197
J =	.655 - .675
K =	.188 MAX.
M =	.151 - .161
N =	.525 MAX.
O =	BASE
P =	EMITTER

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