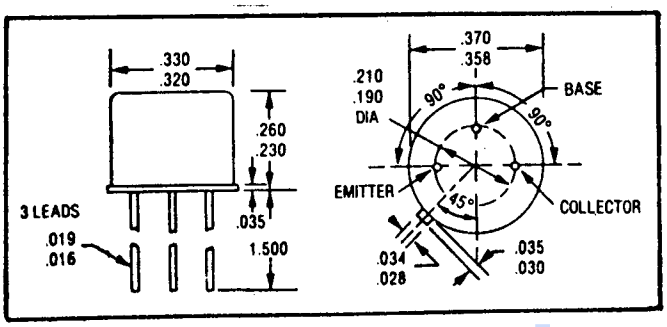
X00253

2N4300

2 AMP
HIGH SPEED NPN TRANSISTOR
100 VOLTS

14830 Valley View Avenue
La Mirada, California 90638
P. O. Box 577
La Mirada, California 90637
(213) 921-9660
TWX 910-583-4807

CASE STYLE W
JEDEC TO-5



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING, 130 NSEC MAX ton
- HIGH FREQUENCY, TYPICAL f_T 100 MHZ
- BVCEO 80 VOLTS MIN.
- LOW SATURATION VOLTAGE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH 2N5333

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}	8	Volts
Collector Current	I_C	2	Amps
Base Current	I_B	1	Amps
Total Device Dissipation @ TC =100 °C	P_D	15	Watts
Derate above 100 °C		150	mW/°C
Operating and Storage Temperature	Tj, Tstg	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC	6.66	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I_C = 30 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}	8		Vdc

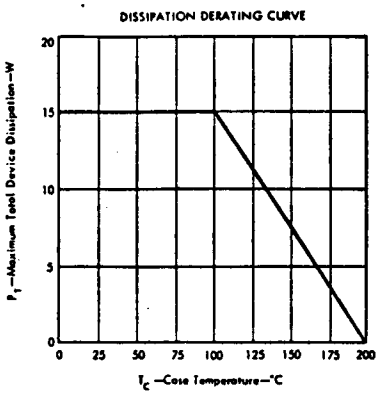
NOTE: All specifications subject to change without notice.

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current (V_{CE} = 90 Vdc) TA = 25°C / TC = 150°C	I_{CES}		10 / 75	u Adc
Collector Cutoff Current (V_{CE} = 40 Vdc)	I_{CEO}		1	u Adc
Emitter Cutoff Current (V_{EB} = 5 Vdc) / (V_{EB} = 8 Vdc)	I_{EBO}		0.5 / 10	u Adc
DC Current Gain* (I_C = 1 Adc, V_{CE} = 2 Vdc) / (I_C = 2 Adc, V_{CE} = 2 Vdc)	h_{FE}*	30 / 15	120	
Collector - Emitter Saturation Voltage* (I_C = 1 mAdc, I_B = 100 m Adc) / (I_C = 2 Adc, I_B = 200 m Adc)	$V_{CE\ (SAT)}$*		0.3 / 0.5	Vdc
Base - Emitter Voltage* (I_C = 2 Adc, V_{CE} = 2 Vdc)	V_{BE} (ON)*		1.2	Vdc
Current - Gain - Bandwith Product (I_C = 1 Adc, V_{CE} = 10 Vdc, f = 15 MHz)	f_T	30		MHz
Output Capacitance (V_{CB} = 30 Vdc, I_E = 0, f = 1 MHz)	C_{ob}		45	pf
Input Capacitance (V_{BE} = 8 Vdc, I_C = 0, f = 1 MHz)	C_{ib}		225	pf
Delay Time, Rise Time (V_{CC} = 20 Vdc, I_C = 1 Adc, $V_{EB(off)}$ = 3.7 Vdc, I_{B1} = I_{B2} = 100 mAdc, R_L = 20 Ohms) (t_{on})	t_d + t_r		130	ns
Storage Time, Fall Time (V_{CC} = 20 Vdc, I_C = 1 Adc, $V_{EB(off)}$ = 3.7 Vdc, I_{B1} = I_{B2} = 100 mAdc, R_L = 20 Ohms) (t_{off})	t_s + t_f		1.5	us

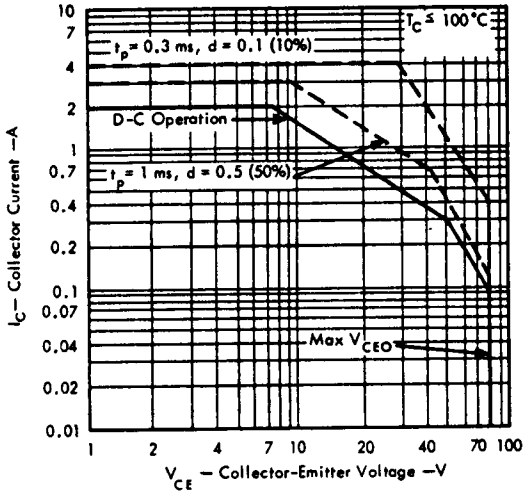
*Pulse Test: Pulse width = 300 us, DutyCycle = 2%

TYPICAL OPERATING CURVES



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

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



SSDI SOLID STATE DEVICES, INC.
P. O. Box 577, La Mirada, California 90637
Telephone: (213) 921-9660 • TWX 910-583-4807