

X00125

2N5006 AND 2N5008

10 AMP

HIGH SPEED NPN TRANSISTOR

100 VOLTS



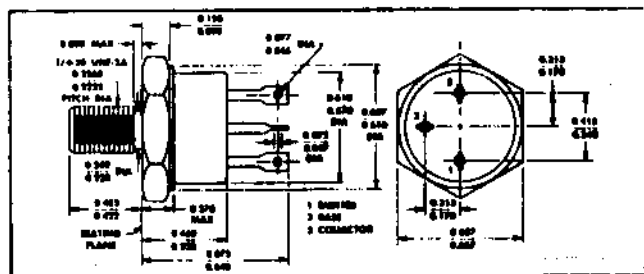
14830 Valley View Avenue
La Mirada, California 90638
(213) 921-9680
TWX 910-583-4807
FAX 213-921-2396

CASE STYLE T

JEDEC TO-61

ALL TERMINALS ISOLATED FROM CASE

FEATURES



- RADIATION TOLERANT
- FAST SWITCHING, 100 NSEC MAX t_d
- 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 2N5007 AND 2N5009

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}	6	Volts
Collector Current	I_C	10	Amps
Base Current	I_B	3	Amps
Total Device Dissipation @ $T_C = 50^\circ\text{C}$	P_D	100	Watts
Derate above 50 °C		667	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	$R_{\theta JC}$	1.5	°C/W

ELECTRICAL CHARACTERISTICS

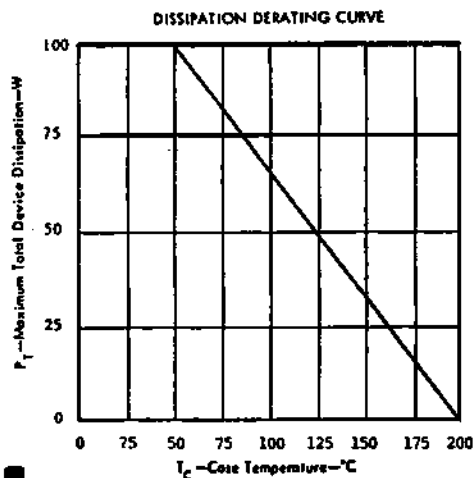
Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 200$ mA Adc)	BV_{CE0}	80		Vdc
Collector - Base Breakdown Voltage ($I_C = 200$ uAdc)	BV_{CB0}	100		Vdc
Emitter - Base Breakdown Voltage ($I_E = 200$ uAdc)	BV_{EB0}	6		Vdc

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector Cutoff Current ($V_{CE} = 40 \text{ Vdc}$) ($V_{CE} = 60 \text{ Vdc}$)	I_{CEO} I_{CES}		50 1.0	μAdc μAdc
Collector Cutoff Current ($V_{CE} = 100\text{Vdc}$) ($V_{CE} = 60 \text{ Vdc}$, $V_{BE} = 2 \text{ Vdc}$, $T_C = 150^\circ\text{C}$)	I_{CEX} I_{CEX}		1.0 500	mAdc μAdc
Emitter Cutoff Current ($V_{EB} = 4 \text{ Vdc}$) ($V_{EB} = 5.5 \text{ Vdc}$)	I_{EBO}		1.0 1.0	μAdc mAdc
DC Current Gain* $(I_C = 100 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$) $(I_C = 5 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$) $(I_C = 10 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$)	h_{FE}	20 50 30 70 20 45	90 200	
Collector - Emitter Saturation Voltage* $(I_C = 5 \text{ Adc}$, $I_B = 500 \text{ mAdc}$) $(I_C = 10 \text{ Adc}$, $I_B = 500 \text{ mAdc}$)	$V_{CE(SAT)}$		0.9 1.5	Vdc
Base - Emitter Saturation Voltage* $(I_C = 5 \text{ Adc}$, $I_B = 500 \text{ mAdc}$) $(I_C = 10 \text{ Adc}$, $I_B = 1 \text{ Adc}$)	$V_{BE(SAT)}$		1.8 2.2	Vdc
Current - Gain - Bandwidth Product $(I_C = 500 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$, $f = 20 \text{ MHz}$)	f_T	35 40		MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 1 \text{ MHz}$)	C_{ob}		275	pf
Base - Emitter Voltage* ($V_{CE} = 5 \text{ Vdc}$, $I_C = 5 \text{ Adc}$)	$V_{BE(ON)}$ *		1.8	Vdc
Delay Time ($V_{CC} = 40 \text{ Vdc}$)	t_d		100	ns
Rise Time $V_{EB(off)} = 3.0 \text{ Vdc}$,	t_r		100	ns
Storage Time $I_C = 2 \text{ Adc}$,	t_s		2.0	μs
Fall Time $I_{B1} = I_{B2} = 200 \text{ mAdc}$	t_f		200	ns

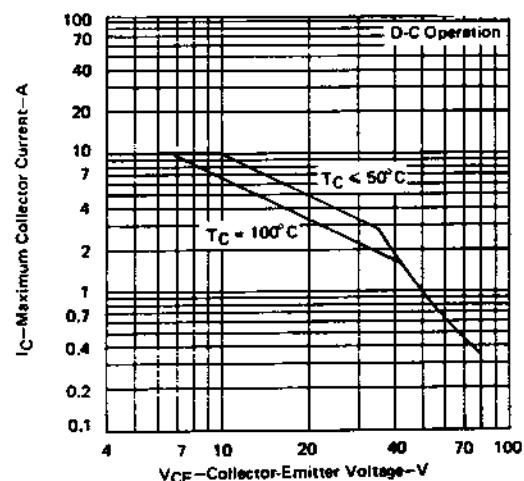
*Pulse Test: Pulse width = 300 μs , DutyCycle = 2%

TYPICAL OPERATING CURVES



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

CURVES APPLY BELOW RATED V_{CEO} $T_C = 25^\circ\text{C}$



SSDI SOLID STATE DEVICES, INC.