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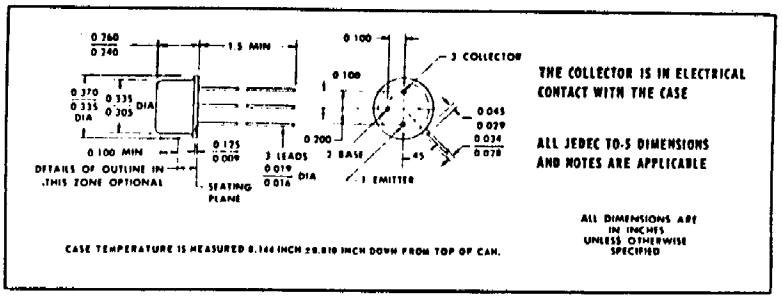
2N5333
P-N-P SILICON POWER TRANSISTOR



***absolute maximum ratings at 25°C case temperature (unless otherwise noted)**

Collector-Base Voltage	−100 V
Collector-Emitter Voltage (See Note 1)	−80 V
Emitter-Base Voltage	−6 V
Continuous Collector Current	−2 A
Peak Collector Current (See Note 2)	−5 A
Continuous Base Current	−1 A
Continuous Emitter Current	−3 A
Safe Operating Region at (or below) 100°C Case Temperature	See Figure 7
Continuous Device Dissipation at (or below) 100°C Case Temperature (See Note 3)	15 W
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 4)	1 W
Operating Collector Junction Temperature Range	−65°C to 200°C
Storage Temperature Range	−65°C to 200°C
Lead Temperature 1/16 Inch from Case for 10 Seconds	260°C

NOTES 1. This value applies when the base-emitter diode is open-circuited.
2. This value applies for $t_p \leq 0.3$ ms, duty cycle $\leq 10\%$.
3. Derate linearly to 200°C case temperature at the rate of 0.15 W/deg.
4. Derate linearly to 200°C free-air temperature at the rate of 5.72 mW/deg.

*JEDEC registered data

***electrical characteristics at 25°C case temperature (unless otherwise noted)**

PARAMETER		TEST CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -30$ mA, $I_B = 0$, See Note 5	−80		V
I_{CEO}	Collector Cutoff Current	$V_{CE} = -40$ V, $I_B = 0$		−50	μA
I_{CES}	Collector Cutoff Current	$V_{CE} = -90$ V, $V_{BE} = 0$		−10	μA
		$V_{CE} = -50$ V, $V_{BE} = 0$, $T_C = 150°C$		−500	
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -4$ V, $I_C = 0$		−1	μA
		$V_{EB} = -6$ V, $I_C = 0$		−100	
h_{FE}	Static Forward Current Transfer Ratio	$V_{CE} = -4$ V, $I_C = -1$ A, See Notes 5 and 6	30	120	
		$V_{CE} = -4$ V, $I_C = -2$ A, See Notes 5 and 6	10		
V_{BE}	Base-Emitter Voltage	$V_{CE} = -4$ V, $I_C = -2$ A, See Notes 5 and 6		−1.5	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_B = -0.1$ A, $I_C = -1$ A, See Notes 5 and 6		−0.45	V
		$I_B = -0.4$ A, $I_C = -2$ A, See Notes 5 and 6		−1	
h_{fe}	Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = -10$ V, $I_C = -1$ A, $f = 1$ kHz	30		
$\lvert h_{fe} \rvert$	Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = -10$ V, $I_C = -1$ A, $f = 15$ MHz	2		

NOTES. 5. These parameters must be measured using pulse techniques. $t_p = 300$ μs, duty cycle $\leq 2\%$.
6. These parameters are measured with voltage-sensing contacts separate from the current-carrying contacts.