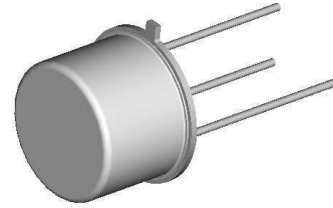


SILICON EPITAXIAL PLANAR PNP POWER TRANSISTOR

2N5333

- Low Saturation Voltage
- Fast Switching
- Hermetic TO39 Metal package.
- For power amplifier and high speed Switching Applications
- High Reliability Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	-100V
V_{CEO}	Collector – Emitter Voltage	-80V
V_{EBO}	Emitter – Base Voltage	-6V
I_C	Continuous Collector Current	-2A
I_{CM}	Peak Collector Current	-5A
I_B	Base Current	-1A
I_E	Emitter Current	-3A
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$	1.0W
	Derate Above 25°C	0.15W/ $^\circ\text{C}$
P_D	Total Power Dissipation at $T_C = 100^\circ\text{C}$	15W
T_J	Junction Temperature Range	-65 to $+200^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to $+200^\circ\text{C}$
	Lead Temperature (1/16 Inch from Case for 10 seconds)	260 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			6.66	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient			175	$^\circ\text{C/W}$

Semelab Ltd reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing an order.



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SILICON EPITAXIAL PLANAR PNP POWER TRANSISTOR 2N5333

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = -30\text{mA}$ $I_B = 0$	-80			V
I_{CEO}	Collector Cut-Off Current	$V_{CE} = -40\text{V}$ $I_B = 0$			-50	μA
I_{CES}	Collector Cut-Off Current	$V_{CE} = -90\text{V}$ $V_{BE} = 0\text{V}$			-10	
		$V_{CE} = -50\text{V}$ $T_C = 150^\circ\text{C}$			-500	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = -4\text{V}$ $I_C = 0$			-1.0	
		$V_{EB} = -6\text{V}$ $I_C = 0$			-100	
$h_{FE}^{(1)}$	Static Forward Current Transfer Ratio	$V_{CE} = -4\text{V}$ $I_C = -1.0\text{A}$	30		150	
		$V_{CE} = -4\text{V}$ $I_C = -2.0\text{A}$	10			
$V_{BE}^{(1)}$	Base-Emitter Voltage	$V_{CE} = -4\text{V}$ $I_C = -2.0\text{A}$			-1.5	V
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = -1.0\text{A}$ $I_B = -0.1\text{A}$			-0.45	
		$I_C = -2.0\text{A}$ $I_B = -0.4\text{A}$			-1.0	
h_{fe}	Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = -10\text{V}$, $I_C = -1.0\text{A}$, $f = 1.0\text{KHz}$	30			
$ h_{fe} $	Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = -10\text{V}$, $I_C = -1.0\text{A}$, $f = 15\text{MHz}$	2			

SWITCHING CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
t_{on}	Turn-On Time	$I_C = -1.0\text{A}$ $I_{B1} = -I_{B2} = 0.1\text{A}$		150		ns
t_{off}	Turn-Off Time	$V_{BE(off)} = 3.7\text{V}$ $R_L = 20\Omega$		450		

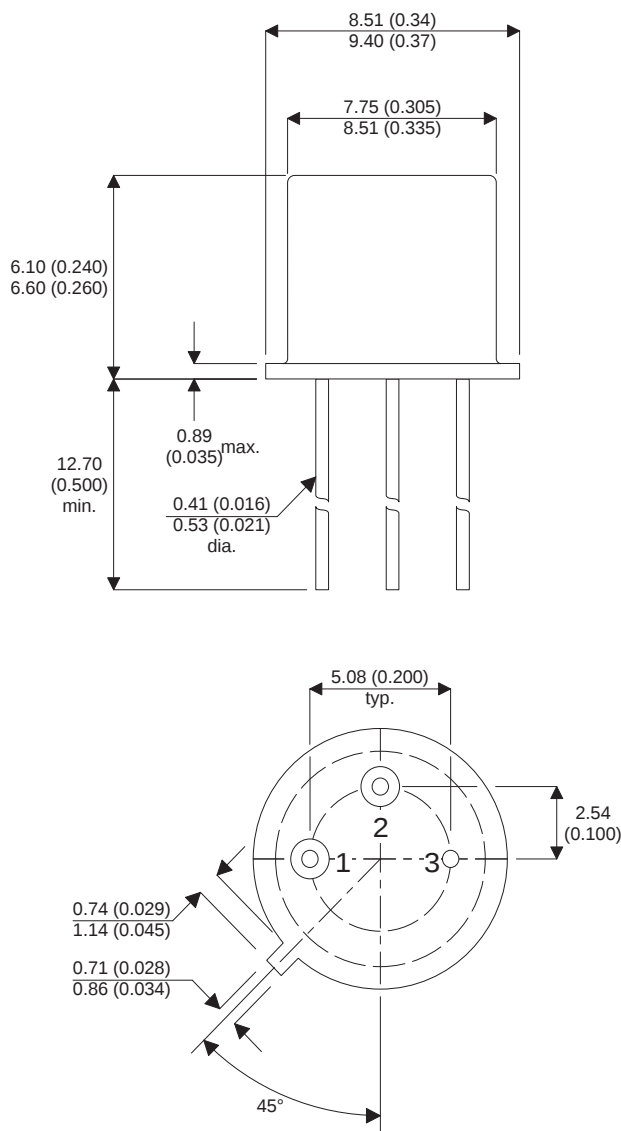
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

SILICON EPITAXIAL PLANAR PNP POWER TRANSISTOR 2N5333

MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD)

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector