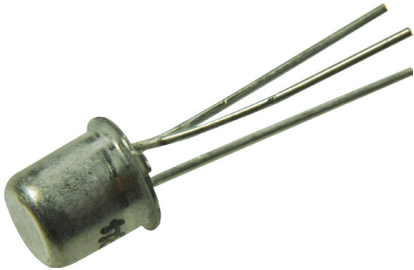


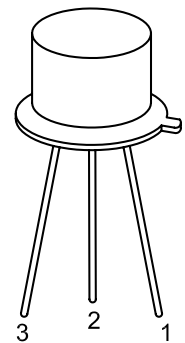
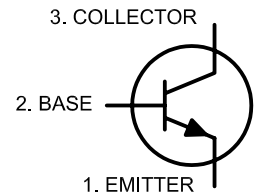
**RoHS  
Compliant**



## Features

- Meets MIL 19500 /376
- Collector - Base Voltage 60V
- Collector - Current 50mA
- High Speed, Low Power Bipolar Transistor

**NPN**



## Absolute Maximum Ratings:

Characteristic	Symbol	Rating
Collector-Emitter Voltage	$V_{CEO}$	60V DC
Collector-Base Voltage	$V_{CBO}$	60V DC
Emitter - Base Voltage	$V_{EBO}$	6V DC
Continuous Collector Current	$I_C$	50mA DC
Total Device Dissipation ( $T_C = +25^\circ\text{C}$ ) Derate above $25^\circ\text{C}$	$P_D$	360mW >2.06mW/ $^\circ\text{C}$
Total Device Dissipation ( $T_C = +25^\circ\text{C}$ ) Derate above $25^\circ\text{C}$	$P_D$	1.2W 6.85mW/ $^\circ\text{C}$
Operating Junction Temperature Range	$T_J$	$-65^\circ\text{C}$ to $+200^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	$-65^\circ\text{C}$ to $+200^\circ\text{C}$

## Thermal Characteristics

Characteristics	Symbol	Maximum	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}^*$	485	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	146	$^\circ\text{C}/\text{W}$
Lead Temperature 1/16 inches from Case for 10s	$T_L$	300	$^\circ\text{C}$

\* $R_{\theta JA}$  is measured with the device soldered into a typical printed circuit board

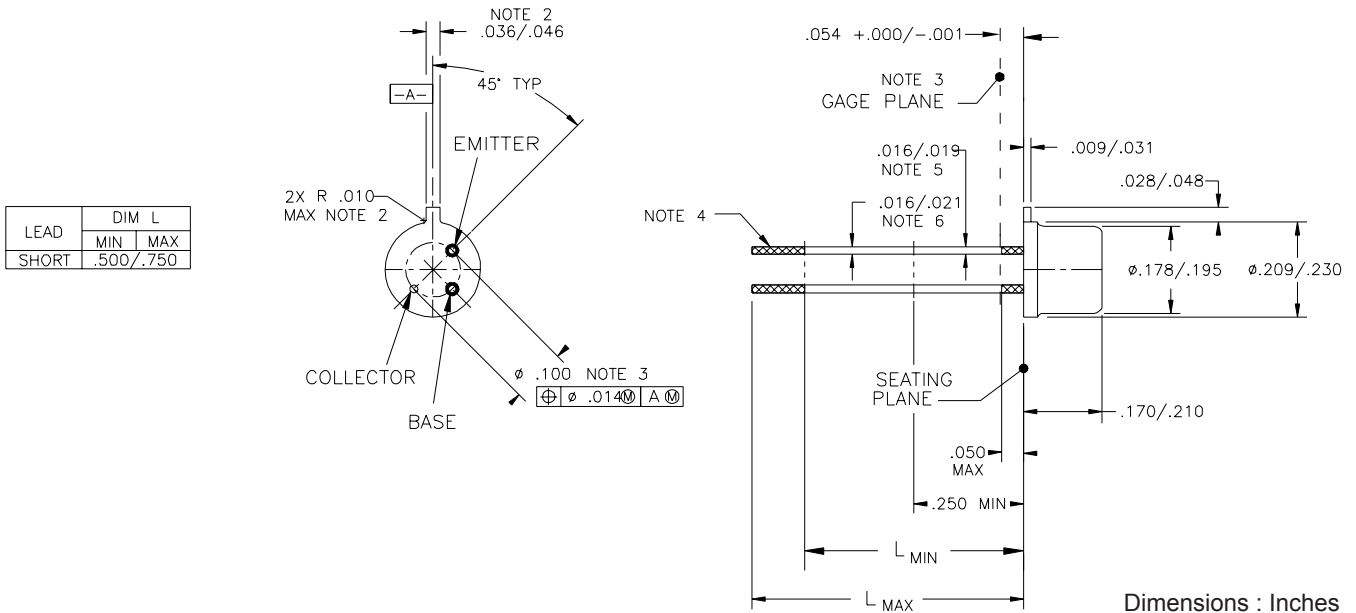
## Electrical Characteristics: ( $T_A = +25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit.
<b>OFF Characteristics</b>						
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 10\text{mA DC}, I_B = 0, (\text{Note } 1)$	60	-	-	V DC
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = 10\mu\text{A DC}, I_E = 0$	60	-	-	
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = 100\mu\text{A DC}, I_C = 0$	6	-	-	
Collector-Cut-Off Current	$I_{CBO}$	$V_{CB} = 45\text{V DC}, I_E = 0$	-	-	10	nA DC
		$V_{CB} = 45\text{V DC}, I_E = 0, T_A = +150^\circ\text{C}$	-	-	10	$\mu\text{A DC}$
Emitter Cut off Current	$I_{EBO}$	$(V_{BE} = 5\text{ V DC}, I_C = 0)$	-	-	10	nA DC

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Element14.com/multicomp-pro


Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit.
<b>On Characteristics</b>						
DC Current Gain	h <sub>FE</sub>	I <sub>C</sub> = 1μA DC, V <sub>CE</sub> = 5V DC	30	190	-	-
		I <sub>C</sub> = 10μA DC, V <sub>CE</sub> = 5V DC	100	250	500	-
		I <sub>C</sub> = 10μA DC, V <sub>CE</sub> = 5V DC, T <sub>A</sub> = 55°C	20	40	-	-
		I <sub>C</sub> = 100μA DC, V <sub>CE</sub> = 5 V DC	175	275	-	-
		I <sub>C</sub> = 500μA DC, V <sub>CE</sub> = 5V DC)	200	300	-	-
		I <sub>C</sub> = 1mA DC, V <sub>CE</sub> = 5V DC)	250	350	-	-
		I <sub>C</sub> = 10mA DC, V <sub>CE</sub> = 5V DC) (Note 1)	-	400	800	-
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 10mA DC, I <sub>B</sub> = 1mA DC	-	0.25	0.35	V DC
Base-Emitter Saturation Voltage	V <sub>BE(on)</sub>	I <sub>C</sub> = 0.1mA DC, V <sub>CE</sub> = 5V DC	0.5	0.65	0.7	
<b>Dynamic Characteristics</b>						
Current Gain-Bandwidth Product	f <sub>T</sub>	I <sub>C</sub> = 0.05mA DC, V <sub>CE</sub> = 5V DC, f = 5MHz	15	50	-	MHz
		I <sub>C</sub> = 0.5mA DC, V <sub>CE</sub> = 5 V DC, f = 30MHz	60	100	-	
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 5 V DC, I <sub>E</sub> = 0, f = 140kHz	-	3	6	pF
Input Capacitance	C <sub>ib</sub>	V <sub>BE</sub> = 5V DC, I <sub>E</sub> = 0, f = 140kHz	-	4	6	pF
Input Impedance	h <sub>IE</sub>	I <sub>C</sub> = 1mA DC, V <sub>CE</sub> = 5V DC, f = 1kHz	3.5	-	24	kΩ
Voltage Feedback Ratio	h <sub>RE</sub>	I <sub>C</sub> = 1mA DC, V <sub>CE</sub> = 5V DC, f = 1kHz	-	-	800	× 10 <sup>-6</sup>
Small Signal Current Gain	h <sub>fe</sub>	I <sub>C</sub> = 1mA DC, V <sub>CE</sub> = 5V DC, f = 1kHz	150	-	900	-
Output Admittance	h <sub>oe</sub>	I <sub>C</sub> = 1mA DC, V <sub>CE</sub> = 5V DC, f = 1kHz	-	-	40	μmhos
Noise Figure	NF	I <sub>C</sub> = 10μA DC, V <sub>CE</sub> = 5V DC, R <sub>S</sub> = 10kΩ, f = 100Hz, BW = 20 Hz	-	8	10	dB
		I <sub>C</sub> = 10μA DC, V <sub>CE</sub> = 5V DC, R <sub>S</sub> = 10kΩ, f = 1kHz, BW = 200Hz	-	-	3	dB
		I <sub>C</sub> = 10μA DC, V <sub>CE</sub> = 5V DC, R <sub>S</sub> = 10kΩ, f = 10kHz, BW = 2kHz	-	-	2	dB
		(I <sub>C</sub> = 10μA DC, V <sub>CE</sub> = 5V DC, R <sub>S</sub> = 10kΩ, f = 10Hz to 15.7kHz, BW = 15.7kHz	-	-	3	dB

Note 1 : Pulse Test : Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%



LEAD	DIM L	
	MIN	MAX
SHORT	.500	.750

## Notes:

1. Dimensions are in Inches
2. Tab width shall be held to tolerance for at least 0.011 Beyond corner radius
3. True position applies at gage plane; device may be measured by direct methods or by mil spec. Gage & procedure.
4.  Symbol indicates portion of leads not held to tolerance.
5. 0.016/0.019 Lead Dia. applies between 0.05 max. & 0.25 min.
6. 0.016/0.021 Lead Dia. applies between 0.25 min. & 0.5 min.
7. Standard product lead finish is gold plate. Optional lead finish shall be hot solder dip per customer spec.

## Part Number Table

Description	Part Number
Bipolar Transistor, NPN, 50mA, 60V, TO-18	2N2484

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