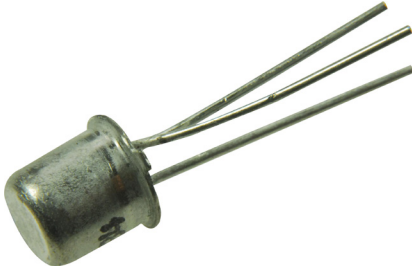


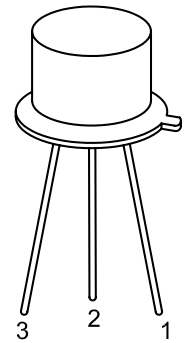
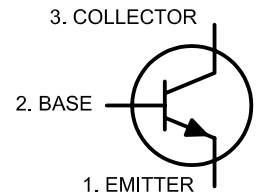
**RoHS
Compliant**



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°C	P_D	360mW >2.06mW/ $^\circ\text{C}$
Total Device Dissipation ($T_C = +25^\circ\text{C}$) Derate above 25°C	P_D	1.2W 6.85mW/ $^\circ\text{C}$
Operating Junction Temperature Range	T_J	-65°C to $+200^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65°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	$^\circ\text{C}$

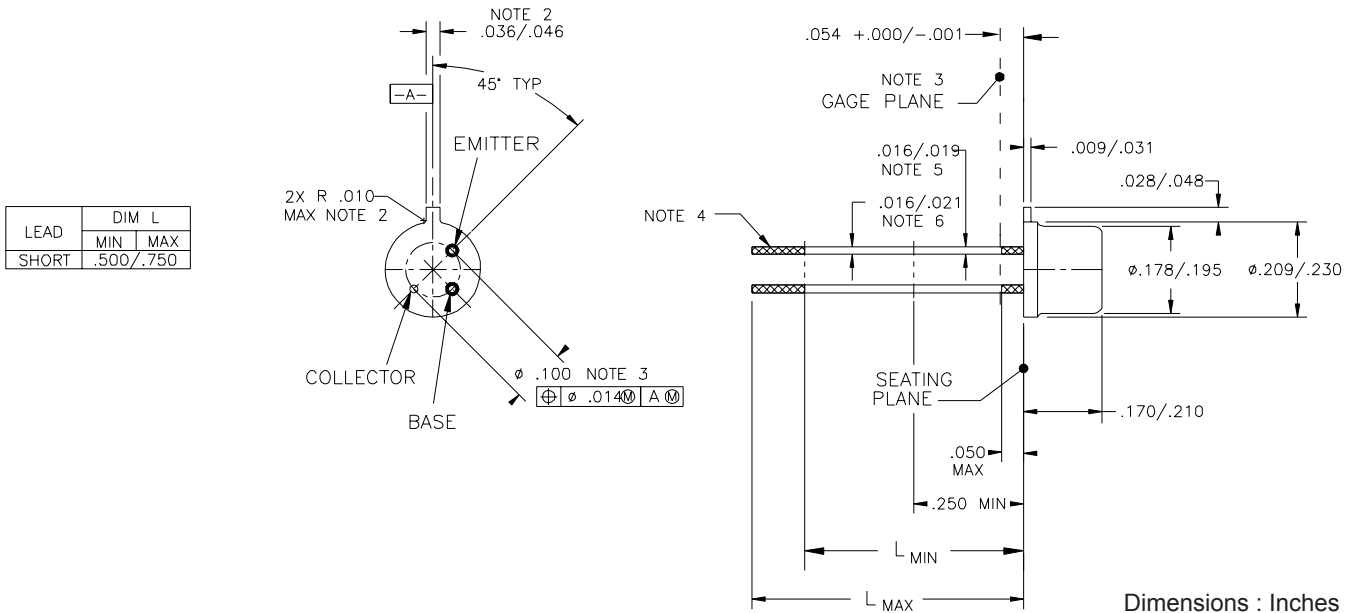
* $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit.
OFF Characteristics						
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

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

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



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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