

## NPN SILICON LOW POWER TRANSISTOR

Qualified per MIL-PRF-19500/ 376

### Devices

2N2484

### Qualified Level

JANTX  
JANTXV

### MAXIMUM RATINGS

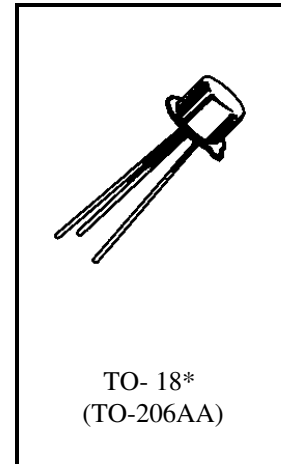
Ratings	Symbol	2N2484	Unit
Collector-Emitter Voltage	$V_{CEO}$	60	Vdc
Collector-Base Voltage	$V_{CBO}$	60	Vdc
Emitter-Base Voltage	$V_{EBO}$	6.0	Vdc
Collector Current	$I_C$	50	mAdc
Total Power Dissipation	$P_T$	@ $T_A = +25^{\circ}\text{C}^{(1)}$	360
		@ $T_C = +25^{\circ}\text{C}^{(2)}$	1.2
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200	$^{\circ}\text{C}$

### THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	146	$^{\circ}\text{C}/\text{W}$

1) Derate linearly 2.06 mW/ $^{\circ}\text{C}$  above  $T_A = +25^{\circ}\text{C}$

2) Derate linearly 6.85 mW/ $^{\circ}\text{C}$  above  $T_C = +25^{\circ}\text{C}$



\*See appendix A for package outline

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
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### OFF CHARACTERISTICS

Collector-Emitter Breakdown Current $I_C = 10 \text{ mAdc}$	$V_{(BR)CEO}$	60		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 45 \text{ Vdc}$	$I_{CES}$		5.0	$\eta\text{Adc}$
Collector-Base Cutoff Current $V_{CB} = 45 \text{ Vdc}$ $V_{CB} = 60 \text{ Vdc}$	$I_{CBO}$		5.0	$\eta\text{Adc}$
			10	$\mu\text{Adc}$
Collector-Emitter Cutoff Current $V_{CE} = 5.0 \text{ Vdc}$	$I_{CEO}$		2.0	$\eta\text{Adc}$
Emitter-Base Cutoff Current $V_{EB} = 5.0 \text{ Vdc}$ $V_{EB} = 6.0 \text{ Vdc}$	$I_{EBO}$		2.0	$\eta\text{Adc}$
			10	$\mu\text{Adc}$

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
<b>ON CHARACTERISTICS (3)</b>				
Forward-Current Transfer Ratio $I_C = 1.0 \mu\text{A dc}, V_{CE} = 5.0 \text{ V dc}$ $I_C = 10 \mu\text{A dc}, V_{CE} = 5.0 \text{ V dc}$ $I_C = 100 \mu\text{A dc}, V_{CE} = 5.0 \text{ V dc}$ $I_C = 500 \mu\text{A dc}, V_{CE} = 5.0 \text{ V dc}$ $I_C = 1.0 \text{ mA dc}, V_{CE} = 5.0 \text{ V dc}$ $I_C = 10 \text{ mA dc}, V_{CE} = 5.0 \text{ V dc}$	$h_{FE}$	45 200 225 250 250 225	500 675 800 800	
Collector-Emitter Saturation Voltage $I_C = 1.0 \text{ mA dc}, I_B = 100 \mu\text{A dc}$	$V_{CE(sat)}$		0.3	Vdc
Base-Emitter Voltage $V_{CE} = 5.0 \text{ V dc}, I_C = 100 \mu\text{A dc}$	$V_{BE}$	0.5	0.7	Vdc

**DYNAMIC CHARACTERISTICS**

Forward Current Transfer Ratio $I_C = 50 \mu\text{A dc}, V_{CE} = 5.0 \text{ V dc}, f = 5.0 \text{ MHz}$ $I_C = 500 \mu\text{A dc}, V_{CE} = 5.0 \text{ V dc}, f = 30 \text{ MHz}$	$ h_{fe} $	3.0 2.0	7.0	
Open Circuit Output Admittance $I_C = 1.0 \text{ mA dc}, V_{CE} = 5.0 \text{ V dc}, f = 1.0 \text{ kHz}$	$h_{oe}$		40	$\mu\text{mhos}$
Open Circuit Reverse-Voltage Transfer Ratio $I_C = 1.0 \text{ mA dc}, V_{CE} = 5.0 \text{ V dc}, f = 1.0 \text{ kHz}$	$h_{re}$		$8.0 \times 10^{-4}$	
Input Impedance $I_C = 1.0 \text{ mA dc}, V_{CE} = 5.0 \text{ V dc}, f = 1.0 \text{ kHz}$	$h_{ie}$	3.5	24	$\text{k}\Omega$
Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 1.0 \text{ mA dc}, V_{CE} = 5.0 \text{ V dc}, f = 1.0 \text{ kHz}$	$h_{fe}$	250	900	
Output Capacitance $V_{CB} = 5.0 \text{ V dc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{obo}$		5.0	pF
Input Capacitance $V_{EB} = 0.5 \text{ V dc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{ibo}$		6.0	pF

(3) Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .