

NPN SILICON LOW POWER TRANSISTOR

Qualified per MIL-PRF-19500/376

Devices

2N2484

Qualified Level

**JANTX
JANTXV**

MAXIMUM RATINGS

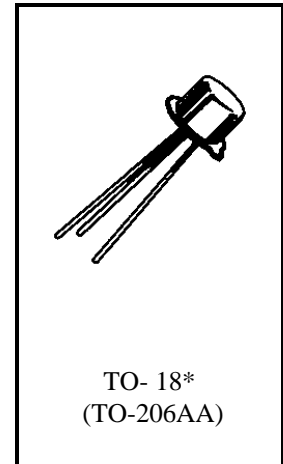
Ratings	Symbol	2N2484	Unit
Collector-Emitter Voltage	V_{CEO}	60	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current	I_C	50	mAdc
Total Power Dissipation	P_T	@ $T_A = +25^{\circ}\text{C}^{(1)}$	360
		@ $T_C = +25^{\circ}\text{C}^{(2)}$	1.2
Operating & Storage 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	ηAdc
Collector-Base Cutoff Current $V_{CB} = 45 \text{ Vdc}$ $V_{CB} = 60 \text{ Vdc}$	I_{CBO}		5.0	ηAdc
			10	μAdc
Collector-Emitter Cutoff Current $V_{CE} = 5.0 \text{ Vdc}$	I_{CEO}		2.0	ηAdc
Emitter-Base Cutoff Current $V_{EB} = 5.0 \text{ Vdc}$ $V_{EB} = 6.0 \text{ Vdc}$	I_{EBO}		2.0	ηAdc
			10	μAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS (3)				
Forward-Current Transfer Ratio I _C = 1.0 μ A _{dc} , V _{CE} = 5.0 V _{dc} I _C = 10 μ A _{dc} , V _{CE} = 5.0 V _{dc} I _C = 100 μ A _{dc} , V _{CE} = 5.0 V _{dc} I _C = 500 μ A _{dc} , V _{CE} = 5.0 V _{dc} I _C = 1.0 mA _{dc} , V _{CE} = 5.0 V _{dc} I _C = 10 mA _{dc} , V _{CE} = 5.0 V _{dc}	h _{FE}	45 200 225 250 250 225	500 675 800 800	
Collector-Emitter Saturation Voltage I _C = 1.0 mA _{dc} , I _B = 100 μ A _{dc}	V _{CE(sat)}		0.3	V _{dc}
Base-Emitter Voltage V _{CE} = 5.0 V _{dc} , I _C = 100 μ A _{dc}	V _{BE}	0.5	0.7	V _{dc}

DYNAMIC CHARACTERISTICS

Forward Current Transfer Ratio I _C = 50 μ A _{dc} , V _{CE} = 5.0 V _{dc} , f = 5.0 MHz I _C = 500 μ A _{dc} , V _{CE} = 5.0 V _{dc} , f = 30 MHz	h _{fe}	3.0 2.0	7.0	
Open Circuit Output Admittance I _C = 1.0 mA _{dc} , V _{CE} = 5.0 V _{dc} , f = 1.0 kHz	h _{oe}		40	μ mhos
Open Circuit Reverse-Voltage Transfer Ratio I _C = 1.0 mA _{dc} , V _{CE} = 5.0 V _{dc} , f = 1.0 kHz	h _{re}		8.0x10 ⁻⁴	
Input Impedance I _C = 1.0 mA _{dc} , V _{CE} = 5.0 V _{dc} , f = 1.0 kHz	h _{ie}	3.5	24	k Ω
Small-Signal Short-Circuit Forward Current Transfer Ratio I _C = 1.0 mA _{dc} , V _{CE} = 5.0 V _{dc} , f = 1.0 kHz	h _{fe}	250	900	
Output Capacitance V _{CB} = 5.0 V _{dc} , I _E = 0, 100 kHz \leq f \leq 1.0 MHz	C _{obo}		5.0	pF
Input Capacitance V _{EB} = 0.5 V _{dc} , I _C = 0, 100 kHz \leq f \leq 1.0 MHz	C _{ibo}		6.0	pF

(3) Pulse Test: Pulse Width = 300 μ s, Duty Cycle \leq 2.0%.