

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 @ $T_A = +25^{\circ}\text{C}^{(1)}$ @ $T_C = +25^{\circ}\text{C}^{(2)}$	P_T	360 1.2	mW W
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	$^{\circ}\text{C/W}$

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 $T_C = +25^{\circ}\text{C}$



TO-18*
(TO-206AA)

*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 10	ηAdc 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 10	ηAdc μAdc

ELECTRICAL CHARACTERISTICS (con't)

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

DYNAMIC CHARACTERISTICS

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

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

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