

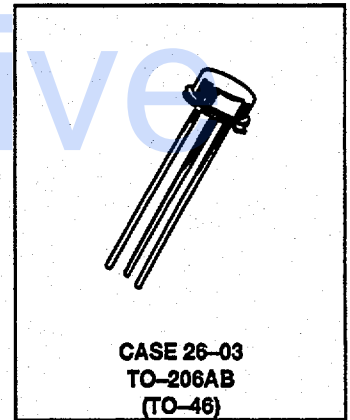
**2N3764JTX, JTXV, JANS**  
Processed per MIL-S-19500/396  
**PNP Silicon**  
**Small-Signal Transistor**

...designed for general-purpose switching applications.



*Not Recommended for New Design*

MAXIMUM RATINGS			
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	40	Vdc
Collector-Base Voltage	$V_{CBO}$	40	Vdc
Emitter-Base Voltage	$V_{EBO}$	5.0	Vdc
Collector Current — Continuous	$I_C$	1.5	Adc
Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.0 5.71	Watts mW/°C
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 200	°C



ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)				
Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage <sup>(1)</sup> ( $I_C = 10 \text{ mAdc}, I_B = 0$ )	$V_{(BR)CEO}$	40	—	Vdc
Collector-Base Breakdown Voltage ( $I_C = 10 \text{ } \mu\text{Adc}, I_E = 0$ )	$V_{(BR)CBO}$	40	—	Vdc
Emitter-Base Breakdown Voltage ( $I_E = 10 \text{ } \mu\text{Adc}, I_C = 0$ )	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ( $V_{CB} = 20 \text{ Vdc}, V_{EB} = 2.0 \text{ Vdc}$ ) ( $V_{CB} = 20 \text{ Vdc}, V_{EB} = 2.0 \text{ Vdc}, T_A = 150^\circ\text{C}$ )	$I_{CEX}$	—	0.1 150	$\mu\text{Adc}$
Collector Cutoff Current ( $V_{CB} = 20 \text{ Vdc}$ )	$I_{CBO}$	—	0.1	$\mu\text{Adc}$
Emitter Cutoff Current ( $V_{EB} = 2.0 \text{ Vdc}, I_C = 0$ )	$I_{EBO}$	—	0.2	$\mu\text{Adc}$

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2N3764 SERIES

ON CHARACTERISTICS				
DC Current Gain ( $I_C = 10 \text{ mAdc}$ , $V_{CE} = 1.0 \text{ Vdc}$ ) ( $I_C = 150 \text{ mAdc}$ , $V_{CE} = 1.0 \text{ Vdc}$ ) <sup>(1)</sup> ( $I_C = 500 \text{ mAdc}$ , $V_{CE} = 1.0 \text{ Vdc}$ ) <sup>(1)</sup> ( $I_C = 1.0 \text{ Adc}$ , $V_{CE} = 1.5 \text{ Vdc}$ ) <sup>(1)</sup> ( $I_C = 1.5 \text{ Adc}$ , $V_{CE} = 5.0 \text{ Vdc}$ ) <sup>(1)</sup> ( $I_C = 500 \text{ mAdc}$ , $V_{CE} = 1.0 \text{ Vdc}$ , $T_A = -55^\circ\text{C}$ ) <sup>(1)</sup>	$h_{FE}$	35 40 40 30 30 20	— — 140 120 — —	—
Collector-Emitter Saturation Voltage <sup>(1)</sup> ( $I_C = 10 \text{ mAdc}$ , $I_B = 1.0 \text{ mAdc}$ ) ( $I_C = 150 \text{ mAdc}$ , $I_B = 15 \text{ mAdc}$ ) ( $I_C = 500 \text{ mAdc}$ , $I_B = 50 \text{ mAdc}$ ) ( $I_C = 1.0 \text{ Adc}$ , $I_B = 100 \text{ mAdc}$ )	$V_{CE(sat)}$	— — — —	0.1 0.22 0.5 0.9	Vdc
Base-Emitter Saturation Voltage <sup>(1)</sup> ( $I_C = 10 \text{ mAdc}$ , $I_B = 1.0 \text{ mAdc}$ ) ( $I_C = 150 \text{ mAdc}$ , $I_B = 15 \text{ mAdc}$ ) ( $I_C = 500 \text{ mAdc}$ , $I_B = 50 \text{ mAdc}$ ) ( $I_C = 1.0 \text{ Adc}$ , $I_B = 100 \text{ mAdc}$ )	$V_{BE(sat)}$	— — — 0.9	0.8 1.0 1.2 1.4	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Output Capacitance ( $V_{CB} = 10 \text{ Vdc}$ , $f = 0.1$ to $1.0 \text{ MHz}$ )	$C_{obo}$	—	15	pF
Input Capacitance ( $V_{EB} = 0.5 \text{ Vdc}$ , $f = 0.1$ to $1.0 \text{ MHz}$ )	$C_{ibo}$	—	80	pF
Small-Signal Current Transfer Ratio, Magnitude ( $I_C = 50 \text{ mAdc}$ , $V_{CE} = 10 \text{ Vdc}$ , $f = 100 \text{ MHz}$ )	$ h_{fe} $	1.8	6.0	—
SWITCHING CHARACTERISTICS (See Section 4, Figure 15) ( $V_{CC} = 30 \text{ Vdc}$ , $I_C = 1.0 \text{ mAdc}$ , $I_B = 100 \text{ mAdc}$ )				
Delay Time	$t_d$	—	8.0	ns
Rise Time	$t_r$	—	35	ns
Storage Time	$t_s$	—	80	ns
Fall Time	$t_f$	—	35	ns

ASSURANCE TESTING (Pre/Post Burn-In) Burn-In Conditions: $T_A = 30 \pm 5^\circ\text{C}$ , $V_{CB} = 30 \text{ Vdc}$ (10 Vdc JANS), $P_D = 0.5 \text{ W}$				
Characteristics Tested	Symbol	Initial and End Point Limits		Unit
		Min	Max	
Collector Cutoff Current ( $V_{CB} = 20 \text{ Vdc}$ )	$I_{CBO}$	—	100	nAdc
DC Current Gain <sup>(1)</sup> ( $I_C = 500 \text{ mAdc}$ , $V_{CE} = 1.0 \text{ Vdc}$ )	$h_{FE}$	40	140	—

Delta from Pre-Burn-In Measured Values		Min	Max	
Delta Collector Cutoff Current	$\Delta I_{CBO}$	—	$\pm 100$ or $\pm 10$ whichever is greater	% of Initial Value nAdc
Delta DC Current Gain <sup>(1)</sup>	$\Delta h_{FE}$	—	$\pm 15$	% of Initial Value

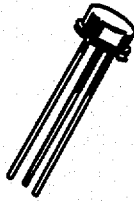
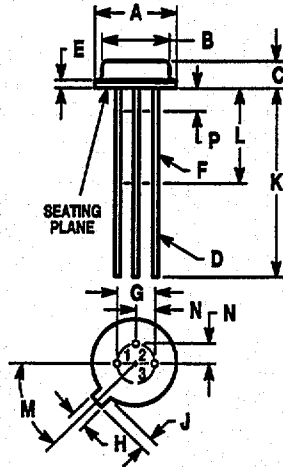
(1) Pulsed. Pulse Width 250 to 350  $\mu\text{s}$ , Duty Cycle 1.0 to 2.0%.

ARCHIVE DOCUMENT - NOT FOR NEW DESIGN

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# 2N3764 SERIES

## PACKAGE DIMENSIONS




STYLE 1:  
 PIN 1. EMITTER  
 2. BASE  
 3. COLLECTOR

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	5.31	5.84	0.209	0.230
B	4.52	4.95	0.178	0.195
C	1.65	2.16	0.065	0.085
D	0.406	0.533	0.016	0.021
E	-	1.02	-	0.040
F	0.305	0.483	0.012	0.019
G	2.54 BSC		0.100 BSC	
H	0.914	1.17	0.036	0.046
J	0.711	1.22	0.028	0.048
K	12.70	-	0.500	-
L	6.35	-	0.250	-
M	45° BSC		45° BSC	
N	1.27 BSC		0.050 BSC	
P	-	1.27	-	0.050

All JEDEC dimensions and notes apply.

CASE 26-03  
 TO-206AB  
 (TO-48)

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