

2N3762JAN, JTX, JTXV  
2N3763JAN, JTX, JTXV  
2N3764JAN, JTX, JTXV, JANS  
2N3765JAN, JTX, JTXV  
Processed per MIL-S-19500/396  
PNP Silicon  
Small-Signal Transistors

CRYSTALONCS  
2805 Veterans Highway  
Suite 14  
Ronkonkoma, N.Y. 11779

... designed for general-purpose switching applications.



MAXIMUM RATINGS				
Rating	Symbol	2N3762 2N3764	2N3763 2N3765	Unit
Collector-Emitter Voltage	$V_{CE0}$	40	60	Vdc
Collector-Base Voltage	$V_{CB0}$	40	60	Vdc
Emitter-Base Voltage	$V_{EB0}$	5.0	5.0	Vdc
Collector Current — Continuous	$I_C$	1.5	1.5	Adc
Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_T$	1.0* 5.71	0.5** 2.86	Watts mW/°C
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 200		°C

\*2N3762, 2N3763 \*\*2N3764, 2N3765

ASSURANCE TESTING (Pre/Post Burn-In)

Burn-In Conditions:  $T_A = 30 \pm 5^\circ\text{C}$ ,  $V_{CB} = 30$  Vdc 2N3762,64, 40 Vdc 2N3763,65, 10 Vdc JANS  
 $P_T = 1.0$  W 2N3762,63, 0.5 W 2N3764,65

Characteristics Tested	Symbol	Initial and End Point Limits		Unit
		Min	Max	
Collector Cutoff Current ( $V_{CB} = 20$ Vdc) 2N3762, 2N3764 ( $V_{CB} = 30$ Vdc) 2N3763, 2N3765	$I_{CBO}$	—	100	nAdc
DC Current Gain <sup>(1)</sup> ( $I_C = 500$ mAdc, $V_{CE} = 1.0$ 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

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25°C unless otherwise noted.)					
Characteristic		Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage <sup>(1)</sup> (I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0)	2N3762, 2N3764 2N3763, 2N3765	V <sub>(BR)CEO</sub>	40 60	—	V <sub>dc</sub>
Collector-Base Breakdown Voltage (I <sub>C</sub> = 10 μA, I <sub>E</sub> = 0)	2N3762, 2N3764 2N3763, 2N3765	V <sub>(BR)CBO</sub>	40 60	—	V <sub>dc</sub>
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 10 μA, I <sub>C</sub> = 0)		V <sub>(BR)EBO</sub>	5.0	—	V <sub>dc</sub>
Collector Cutoff Current (V <sub>CB</sub> = 20 V <sub>dc</sub> , V <sub>EB</sub> = 2.0 V <sub>dc</sub> ) (V <sub>CB</sub> = 20 V <sub>dc</sub> , V <sub>EB</sub> = 2.0 V <sub>dc</sub> , T <sub>A</sub> = 150°C) (V <sub>CB</sub> = 30 V <sub>dc</sub> , V <sub>EB</sub> = 2.0 V <sub>dc</sub> ) (V <sub>CB</sub> = 30 V <sub>dc</sub> , V <sub>EB</sub> = 2.0 V <sub>dc</sub> , T <sub>A</sub> = 150°C)	2N3762, 2N3764 2N3763, 2N3765	I <sub>CEX</sub>	— — — —	0.1 150 0.1 150	μA <sub>dc</sub>
Collector Cutoff Current (V <sub>CB</sub> = 20 V <sub>dc</sub> ) (V <sub>CB</sub> = 30 V <sub>dc</sub> )	2N3762, 2N3764 2N3763, 2N3765	I <sub>CBO</sub>	— —	0.1 0.1	μA <sub>dc</sub>
Emitter Cutoff Current (V <sub>EB</sub> = 2.0 V <sub>dc</sub> , I <sub>C</sub> = 0)		I <sub>EBO</sub>	—	0.2	μA <sub>dc</sub>
<b>ON CHARACTERISTICS</b>					
DC Current Gain (I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 1.0 V <sub>dc</sub> ) (I <sub>C</sub> = 150 mA, V <sub>CE</sub> = 1.0 V <sub>dc</sub> ) <sup>(1)</sup> (I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 1.0 V <sub>dc</sub> ) <sup>(1)</sup> (I <sub>C</sub> = 1.0 A, V <sub>CE</sub> = 1.5 V <sub>dc</sub> ) <sup>(1)</sup>  (I <sub>C</sub> = 1.5 A, V <sub>CE</sub> = 5.0 V <sub>dc</sub> ) <sup>(1)</sup>  (I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 1.0 V <sub>dc</sub> , T <sub>A</sub> = -55°C) <sup>(1)</sup>	2N3762, 2N3764 2N3763, 2N3765  2N3762, 2N3764 2N3763, 2N3765	h <sub>FE</sub>	35 40 40 30 20  30 20 20	— — 140 120 80  — — —	—
Collector-Emitter Saturation Voltage <sup>(1)</sup> (I <sub>C</sub> = 10 mA, I <sub>B</sub> = 1.0 mA) (I <sub>C</sub> = 150 mA, I <sub>B</sub> = 15 mA) (I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA) (I <sub>C</sub> = 1.0 A, I <sub>B</sub> = 100 mA)		V <sub>CE(sat)</sub>	— — — —	0.1 0.22 0.5 0.9	V <sub>dc</sub>
Base-Emitter Saturation Voltage <sup>(1)</sup> (I <sub>C</sub> = 10 mA, I <sub>B</sub> = 1.0 mA) (I <sub>C</sub> = 150 mA, I <sub>B</sub> = 15 mA) (I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA) (I <sub>C</sub> = 1.0 A, I <sub>B</sub> = 100 mA)		V <sub>BE(sat)</sub>	— — — 0.9	0.8 1.0 1.2 1.4	V <sub>dc</sub>
<b>SMALL-SIGNAL CHARACTERISTICS</b>					
Output Capacitance (V <sub>CB</sub> = 10 V <sub>dc</sub> , f = 0.1 to 1.0 MHz)		C <sub>obo</sub>	—	15	pF
Input Capacitance (V <sub>EB</sub> = 0.5 V <sub>dc</sub> , f = 0.1 to 1.0 MHz)		C <sub>ibo</sub>	—	80	pF
Small-Signal Current Transfer Ratio, Magnitude (I <sub>C</sub> = 50 mA, V <sub>CE</sub> = 10 V <sub>dc</sub> , f = 100 MHz)	2N3762, 2N3764 2N3763, 2N3765	h <sub>fe</sub>	1.8 1.5	6.0 6.0	—
<b>SWITCHING CHARACTERISTICS (See Figure 37)</b> (V <sub>CC</sub> = 30 V <sub>dc</sub> , I <sub>C</sub> = 1.0 mA, I <sub>B</sub> = 100 mA)					
Delay Time		t <sub>d</sub>	—	8.0	ns
Rise Time		t <sub>r</sub>	—	35	ns
Storage Time		t <sub>s</sub>	—	80	ns
Fall Time		t <sub>f</sub>	—	35	ns

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