

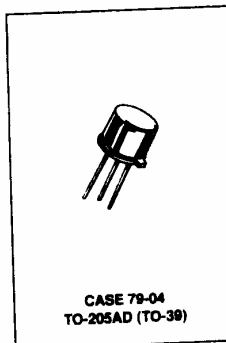
**SEMICONDUCTOR  
TECHNICAL DATA**

2N3762  
2N3763  
2N3764  
2N3765

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

**PNP Silicon  
Small-Signal Transistors**

... designed for general-purpose switching applications



MAXIMUM RATINGS				
Rating	Symbol	2N3762 2N3764	2N3763 2N3765	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	40	60	V <sub>dc</sub>
Collector-Base Voltage	V <sub>CBO</sub>	40	60	V <sub>dc</sub>
Emitter-Base Voltage	V <sub>EB0</sub>	5.0	5.0	V <sub>dc</sub>
Collector Current — Continuous	I <sub>C</sub>	1.5	1.5	A <sub>dc</sub>
Device Dissipation @ T <sub>A</sub> = 25 °C Derate above 25 °C	P <sub>T</sub>	1.0* 5.71	0.5** 2.86	Watts mW/°C
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 200		°C

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

ASSURANCE TESTING (Pre/Post Burn-in)				
Burn-in Conditions: T <sub>A</sub> = 30 ± 5 °C, V <sub>CB</sub> = 30 V <sub>dc</sub> 2N3762,64, 40 V <sub>dc</sub> 2N3763,65, 10 V <sub>dc</sub> JANS				
P <sub>T</sub> = 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 <sub>CB</sub> = 20 V <sub>dc</sub> ) (V <sub>CB</sub> = 30 V <sub>dc</sub> )	I <sub>CBO</sub>	—	100	nA <sub>dc</sub>
DC Current Gain <sup>(1)</sup> (I <sub>C</sub> = 500 mA <sub>dc</sub> , V <sub>CE</sub> = 1.0 V <sub>dc</sub> )	h <sub>FE</sub>	40	140	—

Delta from Pre-Burn-in Measured Values		Min	Max	% of Initial Value
Delta Collector Cutoff Current	ΔI <sub>CBO</sub>	—	±100 or ±10 whichever is greater	nA <sub>dc</sub>
Delta DC Current Gain <sup>(1)</sup>	Δh <sub>FE</sub>	—	±15	% of Initial Value

(1) Pulsed Pulse Width 250 to 350 μs. Duty Cycle 1.0 to 2.0%

2N3762JAN THRU 2N3765JAN SERIES

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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	—	Vdc
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	—	Vdc
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 10 μA, I <sub>C</sub> = 0)		V <sub>(BR)EBO</sub>	5.0	—	Vdc
Collector Cutoff Current (V <sub>CB</sub> = 20 Vdc, V <sub>EB</sub> = 2.0 Vdc) (V <sub>CB</sub> = 20 Vdc, V <sub>EB</sub> = 2.0 Vdc, T <sub>A</sub> = 150°C) (V <sub>CB</sub> = 30 Vdc, V <sub>EB</sub> = 2.0 Vdc) (V <sub>CB</sub> = 30 Vdc, V <sub>EB</sub> = 2.0 Vdc, T <sub>A</sub> = 150°C)	2N3762, 2N3764 2N3763, 2N3765	I <sub>CEX</sub>	— — — —	0.1 150 0.1 150	μA
Collector Cutoff Current (V <sub>CB</sub> = 20 Vdc) (V <sub>CB</sub> = 30 Vdc)	2N3762, 2N3764 2N3763, 2N3765	I <sub>CBO</sub>	— —	0.1 0.1	μA
Emitter Cutoff Current (V <sub>EB</sub> = 2.0 Vdc, I <sub>C</sub> = 0)		I <sub>EBO</sub>	—	0.2	μA
<b>ON CHARACTERISTICS</b>					
DC Current Gain (I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 1.0 Vdc) (I <sub>C</sub> = 150 mA, V <sub>CE</sub> = 1.0 Vdc) <sup>(1)</sup> (I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 1.0 Vdc) <sup>(1)</sup> (I <sub>C</sub> = 1.0 A, V <sub>CE</sub> = 1.5 Vdc) <sup>(1)</sup>  (I <sub>C</sub> = 1.5 A, V <sub>CE</sub> = 5.0 Vdc) <sup>(1)</sup>  (I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 1.0 Vdc, 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	Vdc
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	Vdc
<b>SMALL-SIGNAL CHARACTERISTICS</b>					
Output Capacitance (V <sub>CB</sub> = 10 Vdc, f = 0.1 to 1.0 MHz)		C <sub>obo</sub>	—	15	pF
Input Capacitance (V <sub>EB</sub> = 0.5 Vdc, 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 Vdc, 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 Vdc, 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

<sup>(1)</sup> Pulsed Pulse Width 250 to 350 μs, Duty Cycle 1.0 to 2.0%