

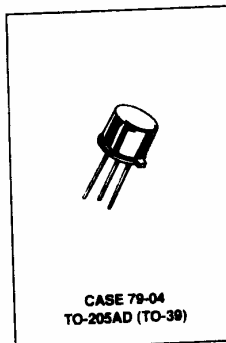
**SEMICONDUCTOR
TECHNICAL DATA**

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 _{CEO}	40	60	V _{dc}
Collector-Base Voltage	V _{CBO}	40	60	V _{dc}
Emitter-Base Voltage	V _{EBO}	5.0	5.0	V _{dc}
Collector Current — Continuous	I _C	1.5	1.5	A _{dc}
Device Dissipation @ T _A = 25 °C Derate above 25 °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 ± 5 °C, V _{CB} = 30 V _{dc} 2N3762,64, 40 V _{dc} 2N3763,65, 10 V _{dc} 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 V _{dc}) (V _{CB} = 30 V _{dc})	I _{CBO}	—	100	nA _{dc}
DC Current Gain ⁽¹⁾ (I _C = 500 mA _{dc} , V _{CE} = 1.0 V _{dc})	h _{FE}	40	140	—

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

(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 _A = 25°C unless otherwise noted.)					
Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ⁽¹⁾ (I _C = 10 mA, I _B = 0)	2N3762, 2N3764 2N3763, 2N3765	V _{(BR)CEO}	40 60	—	Vdc
Collector-Base Breakdown Voltage (I _C = 10 μA, I _E = 0)	2N3762, 2N3764 2N3763, 2N3765	V _{(BR)CBO}	40 60	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 10 μA, I _C = 0)		V _{(BR)EBO}	5.0	—	Vdc
Collector Cutoff Current (V _{CB} = 20 Vdc, V _{EB} = 2.0 Vdc) (V _{CB} = 20 Vdc, V _{EB} = 2.0 Vdc, T _A = 150°C) (V _{CB} = 30 Vdc, V _{EB} = 2.0 Vdc) (V _{CB} = 30 Vdc, V _{EB} = 2.0 Vdc, T _A = 150°C)	2N3762, 2N3764 2N3763, 2N3765	I _{CEX}	— — — —	0.1 150 0.1 150	μA
Collector Cutoff Current (V _{CB} = 20 Vdc) (V _{CB} = 30 Vdc)	2N3762, 2N3764 2N3763, 2N3765	I _{CBO}	— —	0.1 0.1	μA
Emitter Cutoff Current (V _{EB} = 2.0 Vdc, I _C = 0)		I _{EBO}	—	0.2	μA
ON CHARACTERISTICS					
DC Current Gain (I _C = 10 mA, V _{CE} = 1.0 Vdc) (I _C = 150 mA, V _{CE} = 1.0 Vdc) ⁽¹⁾ (I _C = 500 mA, V _{CE} = 1.0 Vdc) ⁽¹⁾ (I _C = 1.0 A, V _{CE} = 1.5 Vdc) ⁽¹⁾ (I _C = 1.5 A, V _{CE} = 5.0 Vdc) ⁽¹⁾ (I _C = 500 mA, V _{CE} = 1.0 Vdc, T _A = -55°C) ⁽¹⁾	2N3762, 2N3764 2N3763, 2N3765 2N3762, 2N3764 2N3763, 2N3765	h _{FE}	35 40 40 30 20 30 20 20	— — 140 120 80 — — —	—
Collector-Emitter Saturation Voltage ⁽¹⁾ (I _C = 10 mA, I _B = 1.0 mA) (I _C = 150 mA, I _B = 15 mA) (I _C = 500 mA, I _B = 50 mA) (I _C = 1.0 A, I _B = 100 mA)		V _{CE(sat)}	— — — —	0.1 0.22 0.5 0.9	Vdc
Base-Emitter Saturation Voltage ⁽¹⁾ (I _C = 10 mA, I _B = 1.0 mA) (I _C = 150 mA, I _B = 15 mA) (I _C = 500 mA, I _B = 50 mA) (I _C = 1.0 A, I _B = 100 mA)		V _{BE(sat)}	— — — 0.9	0.8 1.0 1.2 1.4	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Output Capacitance (V _{CB} = 10 Vdc, f = 0.1 to 1.0 MHz)		C _{obo}	—	15	pF
Input Capacitance (V _{EB} = 0.5 Vdc, f = 0.1 to 1.0 MHz)		C _{ibo}	—	80	pF
Small-Signal Current Transfer Ratio, Magnitude (I _C = 50 mA, V _{CE} = 10 Vdc, f = 100 MHz)	2N3762, 2N3764 2N3763, 2N3765	h _{fe}	1.8 1.5	6.0 6.0	—
SWITCHING CHARACTERISTICS (See Figure 37) (V _{CC} = 30 Vdc, I _C = 1.0 mA, I _B = 100 mA)					
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

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