

SEMICONDUCTOR
TECHNICAL DATA

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
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... designed for general-purpose switching applications.



MAXIMUM RATINGS		2N3762 2N3764	2N3763 2N3765	Unit
Rating	Symbol			
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°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 ⁽¹⁾ ($I_C = 500$ mAdc, $V_{CE} = 1.0$ Vdc)	h_{FE}	40	140	—

Delta from Pre-Burn-In Measured Values		Min	Max	
Delta Collector Cutoff Current	ΔI_{CBO}	—	± 100 or ± 10 whichever is greater	% of Initial Value nAdc
Delta DC Current Gain ⁽¹⁾	Δh_{FE}	—	± 15	% of Initial Value

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

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