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

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

designed for general-purpose switching applications

CASE 79-04
TO-205AD (TO-39)

MAXIMUM RATINGS

Rating	Symbol	2N3762 2N3764	2N3763 2N3765	Unit
Collector Emitter Voltage	V_{CEO}	40	60	Vdc
Collector Base Voltage	V_{CBO}	40	60	Vdc
Emitter Base Voltage	V_{EBO}	5.0	5.0	Vdc
Collector Current — Continuous	I_C	1.5	1.5	Adc
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 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 Min	Max	Unit
Collector Cutoff Current		I_{CBO}			nAdc
(V_{CB} = 20 Vdc)	2N3762, 2N3764		—	100	
(V_{CB} = 30 Vdc)	2N3763, 2N3765		—	100	
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_{CEX}	—	±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 mAdc, I_B = 0)	2N3762, 2N3764	$V_{(BR)CEO}$	40	—	Vdc
	2N3763, 2N3765		60	—	
Collector-Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)	2N3762, 2N3764	$V_{(BR)CBO}$	40	—	Vdc
	2N3763, 2N3765		60	—	
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current		I_{CEX}			μAdc
(V_{CB} = 20 Vdc, V_{EB} = 2.0 Vdc)	2N3762, 2N3764		—	0.1	
(V_{CB} = 20 Vdc, V_{EB} = 2.0 Vdc, T_A = 150°C)			—	150	
(V_{CB} = 30 Vdc, V_{EB} = 2.0 Vdc)	2N3763, 2N3765		—	0.1	
(V_{CB} = 30 Vdc, V_{EB} = 2.0 Vdc, T_A = 150°C)			—	150	
Collector Cutoff Current		I_{CBO}			μAdc
(V_{CB} = 20 Vdc)	2N3762, 2N3764		—	0.1	
(V_{CB} = 30 Vdc)	2N3763, 2N3765		—	0.1	
Emitter Cutoff Current (V_{EB} = 2.0 Vdc, I_C = 0)		I_{EBO}	—	0.2	μAdc
ON CHARACTERISTICS					
DC Current Gain		h_{FE}			—
(I_C = 10 mAdc, V_{CE} = 1.0 Vdc)			35	—	
(I_C = 150 mAdc, V_{CE} = 1.0 Vdc)[1]			40	—	
(I_C = 500 mAdc, V_{CE} = 1.0 Vdc)[1]			40	140	
(I_C = 1.0 Adc, V_{CE} = 1.5 Vdc)[1]	2N3762, 2N3764		30	120	
	2N3763, 2N3765		20	80	
(I_C = 1.5 Adc, V_{CE} = 5.0 Vdc)[1]	2N3762, 2N3764		30	—	
	2N3763, 2N3765		20	—	
(I_C = 500 mAdc, V_{CE} = 1.0 Vdc, T_A = −55°C)[1]			20	—	
Collector-Emitter Saturation Voltage[1]		$V_{CE(sat)}$			Vdc
(I_C = 10 mAdc, I_B = 1.0 mAdc)			—	0.1	
(I_C = 150 mAdc, I_B = 15 mAdc)			—	0.22	
(I_C = 500 mAdc, I_B = 50 mAdc)			—	0.5	
(I_C = 1.0 Adc, I_B = 100 mAdc)			—	0.9	
Base-Emitter Saturation Voltage[1]		$V_{BE(sat)}$			Vdc
(I_C = 10 mAdc, I_B = 1.0 mAdc)			—	0.8	
(I_C = 150 mAdc, I_B = 15 mAdc)			—	1.0	
(I_C = 500 mAdc, I_B = 50 mAdc)			—	1.2	
(I_C = 1.0 Adc, I_B = 100 mAdc)			0.9	1.4	
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		$\lvert h_{fe} \rvert$			—
(I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	2N3762, 2N3764		1.8	6.0	
	2N3763, 2N3765		1.5	6.0	
SWITCHING CHARACTERISTICS (See Figure 37) (V_{CC} = 30 Vdc, I_C = 1.0 mAdc, I_B = 100 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

[1] Pulsed: Pulse width 250 to 300 μs, Duty Cycle 1.0 to 2.0%