

2N3762, 2N3762L JAN, JTX, JTXV 2N3763, 2N3763L JAN, JTX, JTXV 2N3764 JAN, JTX, JTXV 2N3765 JAN, JTX, JTXV



Processed per MIL-PRF-19500/396

PNP SWITCHING SILICON TRANSISTOR

MAXIMUM RATINGS

Ratings	Symbol	2N3762, L 2N3764	2N3763, L 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		Vdc
Collector Current	I_C	1.5		Adc
		2N3762, L ⁽¹⁾ 2N3763, L	2N3764 ⁽²⁾ 2N3765	
Total Power Dissipation @ $T_A = +25^{\circ}\text{C}$	P_T	1.0	0.5	W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-55 to +200		$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.		Unit
		2N3762, L 2N3763, L	2N3764 2N3765	
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	60	88	$^{\circ}\text{C/W}$

1) Derate linearly at 5.71 mW/ $^{\circ}\text{C}$ for $T_A > +25^{\circ}\text{C}$

2) Derate linearly at 2.86 mW/ $^{\circ}\text{C}$ for $T_A > +25^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

Collector-Base Breakdown Voltage $I_C = 10 \mu\text{Adc}$	2N3762, L, 2N3764 2N3763, L, 2N3765	$V_{(BR)CBO}$	40 60		Vdc
Collector-Emitter Breakdown Current $I_C = 10 \text{ mAdc}$	2N3762, L, 2N3764 2N3763, L, 2N3765	$V_{(BR)CEO}$	40 60		Vdc
Emitter-Base Breakdown Voltage $I_E = 10 \mu\text{Adc}$		$V_{(BR)EBO}$	5.0		Vdc



2N3762, 2N3763
TO-39 (TO-205AD)



2N3762L, 2N3763L
TO-5



2N3764, 2N3765
TO-46 (TO-206AB)

2N3762, L, 2N3763, L, 2N3764, 2N3765 JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
Collector-Base Cutoff Current $V_{CB} = 20 \text{ Vdc}$ 2N3762, L, 2N3764 $V_{CB} = 30 \text{ Vdc}$ 2N3763, L, 2N3765	I_{CBO}		100 100	ηAdc
Collector-Emitter Cutoff Current $V_{EB} = 2.0 \text{ Vdc}, V_{CE} = 20 \text{ Vdc}$ 2N3762, L, 2N3764 $V_{EB} = 2.0 \text{ Vdc}, V_{CE} = 30 \text{ Vdc}$ 2N3763, L, 2N3765	I_{CEX}		100 100	ηAdc
Emitter-Base Cutoff Current $V_{EB} = 2.0 \text{ Vdc}$	I_{EBO}		200	ηAdc

ON CHARACTERISTICS (3)

Forward-Current Transfer Ratio $I_C = 10 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 150 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 500 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 1.0 \text{ Adc}, V_{CE} = 1.5 \text{ Vdc}$ 2N3762, L, 2N3764 2N3763, L, 2N3765 $I_C = 1.5 \text{ Adc}, V_{CE} = 5.0 \text{ Vdc}$ 2N3762, L, 2N3764 2N3763, L, 2N3765	h_{FE}	35 40 40 30 20 30 20	140 120 80	
Collector-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$ $I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$ $I_C = 1.0 \text{ Adc}, I_B = 100 \text{ mAdc}$	$V_{CE(sat)}$		0.1 0.22 0.5 0.9	Vdc
Base-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$ $I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$ $I_C = 1.0 \text{ Adc}, I_B = 100 \text{ mAdc}$	$V_{BE(sat)}$	0.9	0.8 1.0 1.2 1.4	Vdc

DYNAMIC CHARACTERISTICS

Forward Current Transfer Ratio, Magnitude $I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 100 \text{ MHz}$ 2N3762, L, 2N3764 2N3763, L, 2N3765	$ h_{fe} $	1.8 1.5	6.0 6.0	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}		25	pF
Input Capacitance $V_{EB} = 0.5 \text{ Vdc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{ibo}		80	pF

SWITCHING CHARACTERISTICS

Delay Time	$V_{CC} = 30 \text{ Vdc}, V_{EB} = 0,$	t_d	8.0	ηs
Rise Time	$I_C = 1.0 \text{ mAdc}, I_{B1} = 100 \text{ mAdc}$	t_r	35	ηs
Storage Time	$V_{CC} = 30 \text{ Vdc}, V_{EB} = 0,$	t_s	80	ηs
Fall Time	$I_C = 1.0 \text{ mAdc}, I_{B1} = 100 \text{ mAdc}$	t_f	35	ηs

(3) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.