

## PNP SWITCHING SILICON TRANSISTOR

Qualified per MIL-PRF-19500/396

### Devices

<b>2N3762</b>	<b>2N3763</b>	<b>2N3764</b>	<b>2N3765</b>
<b>2N3762L</b>	<b>2N3763L</b>		

### Qualified Level

**JAN**  
**JANTX**  
**JANTXV**

### MAXIMUM RATINGS

Ratings	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		Vdc
Collector Current	$I_C$	1.5		Adc
		2N3762* <sup>1</sup> 2N3763*	2N3764 <sup>2</sup> 2N3765	
Total Power Dissipation @ $T_A = +25^{\circ}C$	$P_T$	1.0	0.5	W
Operating & Storage Junction Temp. Range	$T_{op}, T_{stg}$	-55 to +200		$^{\circ}C$

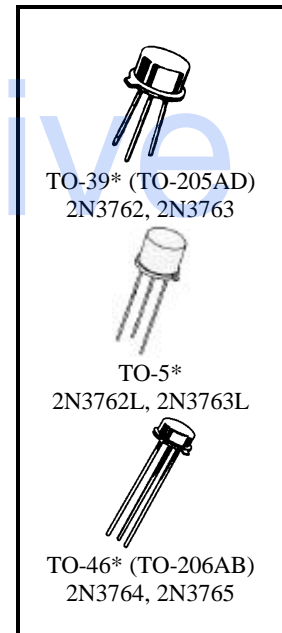
### THERMAL CHARACTERISTICS

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

\*Electrical characteristics for "L" suffix devices are identical to the "non L" corresponding devices

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

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



\*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
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#### OFF CHARACTERISTICS

Collector-Emitter Breakdown Current $I_C = 10$ mAdc	2N3762, 2N3764 2N3763, 2N3765	$V_{(BR)CEO}$	40 60	Vdc
Collector-Base Cutoff Current $V_{CB} = 20$ Vdc $V_{CB} = 30$ Vdc $V_{CB} = 40$ Vdc $V_{CB} = 60$ Vdc	2N3762, 2N3764 2N3763, 2N3765 2N3762, 2N3764 2N3763, 2N3765	$I_{CBO}$		100 100 10 10 $\eta$ Adc $\mu$ Adc

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

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
Collector-Emitter Cutoff Current $V_{EB} = 2.0 \text{ Vdc}, V_{CE} = 20 \text{ Vdc}$ $V_{EB} = 2.0 \text{ Vdc}, V_{CE} = 30 \text{ Vdc}$	$I_{CEX}$		100	$\eta\text{Adc}$
2N3762, 2N3764 2N3763, 2N3765			100	
Emitter-Base Cutoff Current $V_{EB} = 2.0 \text{ Vdc}$ $V_{EB} = 5.0 \text{ Vdc}$	$I_{EBO}$		200	$\eta\text{Adc}$
All Types			10	
2N3762, 2N3764 2N3763, 2N3765			10	

**ON CHARACTERISTICS (3)**

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

**DYNAMIC CHARACTERISTICS**

Forward Current Transfer Ratio, Magnitude $I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 100 \text{ MHz}$	$ h_{fe} $	1.8	6.0	
2N3762, 2N3764 2N3763, 2N3765		1.5	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	$V_{CC} = 30 \text{ Vdc}, V_{EB} = 0,$ $I_C = 1.0 \text{ mAdc}, I_{B1} = 100 \text{ mAdc}$	$t_d$		8.0	$\eta\text{s}$
Rise Time		$t_r$		35	$\eta\text{s}$
Storage Time	$V_{CC} = 30 \text{ Vdc}, V_{EB} = 0,$ $I_C = 1.0 \text{ mAdc}, I_{B1} = 100 \text{ mAdc}$	$t_s$		80	$\eta\text{s}$
Fall Time		$t_f$		35	$\eta\text{s}$

(3) Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq$  2.0%.