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## TECHNICAL DATA

### PNP SILICON AMPLIFIER TRANSISTOR

Qualified per MIL-PRF-19500/357

#### Devices

<b>2N3634</b>	<b>2N3635</b>	<b>2N3636</b>	<b>2N3637</b>
<b>2N3634L</b>	<b>2N3635L</b>	<b>2N3636L</b>	<b>2N3637L</b>

#### Qualified Level

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

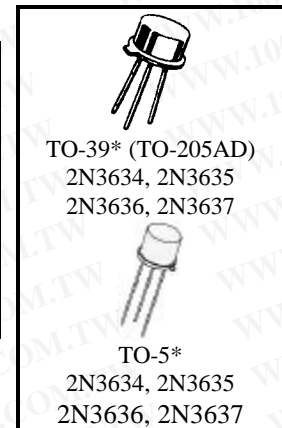
#### MAXIMUM RATINGS

Ratings	Symbol	2N3634* 2N3635*	2N3636* 2N3637*	Unit
Collector-Emitter Voltage	$V_{CEO}$	140	175	Vdc
Collector-Base Voltage	$V_{CBO}$	140	175	Vdc
Emitter-Base Voltage	$V_{EBO}$	5.0		Vdc
Collector Current	$I_C$	1.0		Adc
Total Power Dissipation	$P_T$	@ $T_A = +25^{\circ}C^{(1)}$		1.0
		@ $T_C = +25^{\circ}C^{(2)}$		5.0
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200		$^{\circ}C$

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

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

2) Derate linearly 28.6 mW/ $^{\circ}C$  for  $T_C > +25^{\circ}C$



\*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	2N3634, 2N3635 2N3636, 2N3637	$V_{(BR)CEO}$	140 175	Vdc
Collector-Base Cutoff Current $V_{CB} = 100$ Vdc $V_{CB} = 140$ Vdc	2N3634, 2N3635	$I_{CBO}$	100 10	$\eta$ Adc $\mu$ Adc
Emitter-Base Cutoff Current $V_{EB} = 3.0$ Vdc $V_{EB} = 5.0$ Vdc		$I_{EBO}$	50 10	$\eta$ Adc $\mu$ Adc
Collector-Emitter Cutoff Current $V_{CE} = 100$ Vdc		$I_{CEO}$	10	$\mu$ Adc

2N3634, L, 2N3635, L, 2N3636, L, 2N3637, L JAN SERIES

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
<b>ON CHARACTERISTICS (3)</b>				
Forward-Current Transfer Ratio $I_C = 0.1 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 150 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ 2N3634, 2N3636	$h_{FE}$	25 45 50 50 30	150	
$I_C = 0.1 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ $I_C = 150 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ 2N3635, 2N3637	$h_{FE}$	55 90 100 100 60	300	
Collector-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$ $I_C = 50 \text{ mAdc}, I_B = 5.0 \text{ mAdc}$	$V_{CE(sat)}$		0.3 0.6	Vdc
Base-Emitter Saturation Voltage $I_C = 10 \text{ mAdc}, I_B = 1.0 \text{ mAdc}$ $I_C = 50 \text{ mAdc}, I_B = 5.0 \text{ mAdc}$	$V_{BE(sat)}$	0.65	0.8 0.9	Vdc

**DYNAMIC CHARACTERISTICS**

Forward Current Transfer Ratio $I_C = 30 \text{ mAdc}, V_{CE} = 30 \text{ Vdc}, f = 100 \text{ MHz}$ 2N3634, 2N3636 2N3635, 2N3637	$ h_{fe} $	1.5 2.0	8.0 8.5	
Forward Current Transfer Ratio $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ kHz}$ 2N3634, 2N3636 2N3635, 2N3637	$h_{fe}$	40 80	160 320	
Small-Signal Short-Circuit Input Impedance $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ kHz}$ 2N3634, 2N3636 2N3635, 2N3637	$h_{je}$	100 200	600 1200	$\Omega$ $\Omega$
Small-Signal Open-Circuit Output Admittance $I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ kHz}$	$h_{oe}$		200	$\mu s$
Output Capacitance $V_{CB} = 20 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{obo}$		10	pF
Input Capacitance $V_{EB} = 1.0 \text{ Vdc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{ibo}$		75	pF
Noise Figure $V_{CE} = 10 \text{ Vdc}, I_C = 0.5 \text{ mAdc}, R_g = 1.0 \Omega$ $f = 100 \text{ Hz}$ $f = 1.0 \text{ kHz}$ $f = 10 \text{ kHz}$	NF		5.0 3.0 3.0	dB

**SAFE OPERATING AREA**

<b>DC Tests</b> $T_C = 25^{\circ}\text{C}, 1 \text{ Cycle}, t = 1.0 \text{ s}$	
<b>Test 1</b> $V_{CE} = 100 \text{ Vdc}, I_C = 30 \text{ mAdc}$ $V_{CE} = 130 \text{ Vdc}, I_C = 20 \text{ mAdc}$	2N3634, 2N3635 2N3636, 2N3637
<b>Test 2</b> $V_{CE} = 50 \text{ Vdc}, I_C = 95 \text{ mAdc}$	
<b>Test 3</b> $V_{CE} = 5.0 \text{ Vdc}, I_C = 1.0 \text{ Adc}$	

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

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Datasheets for electronics components.

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