

**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**

<b>JAN</b>
<b>JANTX</b>
<b>JANTXV</b>
<b>JANS</b>

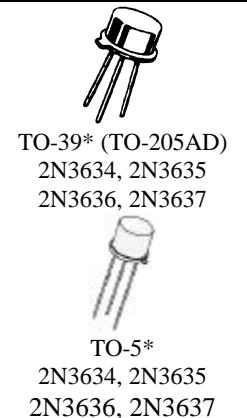
**MAXIMUM RATINGS**

Ratings	Symbol	2N3634* 2N3635*	2N3636* 2N3637*	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	140	175	Vdc
Collector-Base Voltage	V <sub>CBO</sub>	140	175	Vdc
Emitter-Base Voltage	V <sub>EBO</sub>	5.0		Vdc
Collector Current	I <sub>C</sub>	1.0		Adc
Total Power Dissipation @ T <sub>A</sub> = +25°C <sup>(1)</sup>	P <sub>T</sub>	1.0		W
@ T <sub>C</sub> = +25°C <sup>(2)</sup>		5.0		W
Operating & Storage Junction Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200		°C

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

1) Derate linearly 5.71 mW/°C for T<sub>A</sub> > +25°C

2) Derate linearly 28.6 mW/°C for T<sub>C</sub> > +25°C



\*See appendix A for  
package outline

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)**

Characteristics	Symbol	Min.	Max.	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Current I <sub>C</sub> = 10 mAdc	V <sub>(BR)CEO</sub>	140		Vdc
		175		
2N3634, 2N3635 2N3636, 2N3637				
Collector-Base Cutoff Current V <sub>CB</sub> = 100 Vdc V <sub>CB</sub> = 140 Vdc	I <sub>CBO</sub>		100 10	μAdc μAdc
2N3634, 2N3635				
Emitter-Base Cutoff Current V <sub>EB</sub> = 3.0 Vdc V <sub>EB</sub> = 5.0 Vdc	I <sub>EBO</sub>		50 10	μAdc μAdc
2N3634, 2N3635				
Collector-Emitter Cutoff Current V <sub>CE</sub> = 100 Vdc	I <sub>CEO</sub>		10	μAdc

**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	$\mu\text{s}$
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**

**DC Tests**

$T_C = 25^{\circ}\text{C}$ , 1 Cycle,  $t = 1.0 \text{ s}$

**Test 1**

$V_{CE} = 100 \text{ Vdc}, I_C = 30 \text{ mAdc}$   
 $V_{CE} = 130 \text{ Vdc}, I_C = 20 \text{ mAdc}$

**Test 2**

$V_{CE} = 50 \text{ Vdc}, I_C = 95 \text{ mAdc}$

**Test 3**

$V_{CE} = 5.0 \text{ Vdc}, I_C = 1.0 \text{ Adc}$

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

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