

PNP SILICON AMPLIFIER TRANSISTOR

Qualified per MIL-PRF-19500/357

Devices

2N3634	2N3635	2N3636	2N3637
2N3634L	2N3635L	2N3636L	2N3637L

Qualified Level

JAN
JANTX
JANTXV
JANS

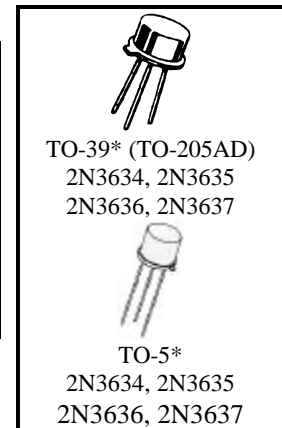
MAXIMUM RATINGS

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	@ $T_A = +25^{\circ}\text{C}^{(1)}$	1.0	W
		@ $T_C = +25^{\circ}\text{C}^{(2)}$	5.0	W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^{\circ}\text{C}$

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

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

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



*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Current $I_C = 10 \text{ mAdc}$	2N3634, 2N3635 2N3636, 2N3637	$V_{(BR)CEO}$	140 175	Vdc
Collector-Base Cutoff Current $V_{CB} = 100 \text{ Vdc}$ $V_{CB} = 140 \text{ Vdc}$	2N3634, 2N3635	I_{CBO}	100 10	ηAdc μAdc
Emitter-Base Cutoff Current $V_{EB} = 3.0 \text{ Vdc}$ $V_{EB} = 5.0 \text{ Vdc}$		I_{EBO}	50 10	ηAdc μAdc
Collector-Emitter Cutoff Current $V_{CE} = 100 \text{ Vdc}$		I_{CEO}	10	μAdc

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

ELECTRICAL CHARACTERISTICS (con't)

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

DYNAMIC CHARACTERISTICS

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

SAFE OPERATING AREA

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

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

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