Microsemi LAWRENCE

TECHNICAL DATA

PNP SILICON AMPLIFIER TRANSISTOR

Qualified per MIL-PRF-19500/357

Devices				***Qualified Level***
2N3634	**2N3635**	**2N3636**	**2N3637**	**JAN**
2N3634L	**2N3635L**	**2N3636L**	**2N3637L**	**JANTX**
				JANTXV
				JANS

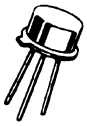
MAXIMUM RATINGS

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 @ $T_A = +25^0C$(1) @ $T_C = +25^0C$(2)	P_T	1.0 5.0		W W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		^0C

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

1) Derate linearly 5.71 mW/^{0}C for $T_A > +25^0C$

2) Derate linearly 28.6 mW/^{0}C for $T_C > +25^0C$



TO-39* (TO-205AD)
2N3634, 2N3635
2N3636, 2N3637

TO-5*
2N3634, 2N3635
2N3636, 2N3637

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_A = 25^0C$ unless otherwise noted)

Characteristics		Symbol	Min.	Max.	Unit
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	ηAdc μAdc
Emitter-Base Cutoff Current V_{EB} = 3.0 Vdc V_{EB} = 5.0 Vdc		I_{EBO}		50 10	ηAdc μAdc
Collector-Emitter Cutoff Current V_{CE} = 100 Vdc		I_{CEO}		10	μAdc

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	2N3634, 2N3636		25		
I_C = 1.0 mAdc, V_{CE} = 10 Vdc			45		
I_C = 10 mAdc, V_{CE} = 10 Vdc			50		
I_C = 50 mAdc, V_{CE} = 10 Vdc		h_{FE}	50	150	
I_C = 150 mAdc, V_{CE} = 10 Vdc			30		
I_C = 0.1 mAdc, V_{CE} = 10 Vdc	2N3635, 2N3637		55		
I_C = 1.0 mAdc, V_{CE} = 10 Vdc			90		
I_C = 10 mAdc, V_{CE} = 10 Vdc		h_{FE}	100		
I_C = 50 mAdc, V_{CE} = 10 Vdc			100	300	
I_C = 150 mAdc, V_{CE} = 10 Vdc			60		
Collector-Emitter Saturation Voltage					
I_C = 10 mAdc, I_B = 1.0 mAdc		$V_{CE(sat)}$		0.3	Vdc
I_C = 50 mAdc, I_B = 5.0 mAdc				0.6	
Base-Emitter Saturation Voltage					
I_C = 10 mAdc, I_B = 1.0 mAdc		$V_{BE(sat)}$		0.8	Vdc
I_C = 50 mAdc, I_B = 5.0 mAdc			0.65	0.9	
DYNAMIC CHARACTERISTICS					
Forward Current Transfer Ratio					
I_C = 30 mAdc, V_{CE} = 30 Vdc, f = 100 MHz	2N3634, 2N3636	$\lvert h_{fe} \rvert$	1.5	8.0	
	2N3635, 2N3637		2.0	8.5	
Forward Current Transfer Ratio					
I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz	2N3634, 2N3636	h_{fe}	40	160	
	2N3635, 2N3637		80	320	
Small-Signal Short-Circuit Input Impedance					
I_C = 10 mAdc, V_{CE} = 10 Vdc, f = 1.0 kHz	2N3634, 2N3636	h_{je}	100	600	Ω
	2N3635, 2N3637		200	1200	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 ≤ f ≤ 1.0 MHz		C_{obo}		10	pF
Input Capacitance					
V_{EB} = 1.0 Vdc, I_C = 0, 100 kHz ≤ f ≤ 1.0 MHz		C_{ibo}		75	pF
Noise Figure					
V_{CE} = 10 Vdc, I_C = 0.5 mAdc, R_g = 1.0 Ω	f = 100 Hz	NF		5.0	dB
	f = 1.0 kHz			3.0	
	f = 10 kHz			3.0	

SAFE OPERATING AREA

DC Tests

$T_C = 25^0$C, 1 Cycle, t = 1.0 s

Test 1

V_{CE} = 100 Vdc, I_C = 30 mAdc	2N3634, 2N3635
V_{CE} = 130 Vdc, I_C = 20 mAdc	2N3636, 2N3637

Test 2

V_{CE} = 50 Vdc, I_C = 95 mAdc

Test 3

V_{CE} = 5.0 Vdc, I_C = 1.0 Adc

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