

NPN POWER AMPLIFIER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/580

Devices

2N4234

2N4235

2N4236

Qualified Level

JAN
JANTX
JANTXV

MAXIMUM RATINGS

Ratings	Symbol	2N4234	2N4235	2N4236	Units
Collector-Emitter Voltage	V_{CEO}	40	60	80	Vdc
Collector-Base Voltage	V_{CBO}	40	60	80	Vdc
Emitter-Base Voltage	V_{EBO}	7.0			Vdc
Collector Current	I_C	1.0			Adc
Base Current	I_B	0.5			Adc
Total Power Dissipation	P_T	1.0			W
		6.0			
Operating & Storage Junction Temperature	T_J, T_{stg}	-65 to +200			$^{\circ}C$

1) Derate linearly 5.7 mW/ $^{\circ}C$ for $T_A > +25^{\circ}C$

2) Derate linearly 34 mW/ $^{\circ}C$ for $T_C > +25^{\circ}C$



TO-39*
(TO-205AD)

*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 Voltage $I_C = 100 \text{ mAdc}$	2N4234 2N4235 2N4236	$V_{(BR)CEO}$	40 60 80	Vdc
Collector-Emitter Cutoff Current $V_{CE} = 30 \text{ Vdc}$ $V_{CE} = 40 \text{ Vdc}$ $V_{CE} = 60 \text{ Vdc}$	2N4234 2N4235 2N4236	I_{CEO}	1.0 1.0 1.0	mAdc
Collector-Emitter Cutoff Current $V_{CE} = 40 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$ $V_{CE} = 60 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$ $V_{CE} = 80 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$	2N4234 2N4235 2N4236	I_{CEX}	100 100 100	ηAdc
Collector-Base Cutoff Current $V_{CE} = 40 \text{ Vdc}$ $V_{CE} = 60 \text{ Vdc}$ $V_{CE} = 80 \text{ Vdc}$	2N4234 2N4235 2N4236	I_{CBO}	100 100 100	ηAdc
Emitter-Base Cutoff Current $V_{BE} = 7.0 \text{ Vdc}$		I_{EBO}	0.5	mAdc

2N4234, 2N4235, 2N4236 JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽³⁾				
Forward-Current Transfer Ratio I _C = 100 mAdc, V _{CE} = 1.0 Vdc I _C = 250 mAdc, V _{CE} = 1.0 Vdc I _C = 500 mAdc, V _{CE} = 1.0 Vdc	h _{FE}	40 30 20	150	
Collector-Emitter Saturation Voltage I _C = 1.0 Adc, I _B = 100 mAdc I _C = 500 mAdc, I _B = 50 mAdc	V _{CE(sat)}		0.6 0.4	Vdc
Base-Emitter Saturation Voltage I _C = 500 mAdc, I _B = 50 mAdc I _C = 1.0 Adc, I _B = 100 mAdc	V _{BE(sat)}		1.1 1.5	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I _C = 100 mAdc, V _{CE} = 10 Vdc, f = 10 MHz	h _{fe}	3.0		
Output Capacitance V _{CB} = 10 Vdc, I _E = 0, f = 100 MHz	C _{obo}		100	pF

SAFE OPERATING AREA

DC Tests

T_C = +25°C, 1 cycle, t ≥ 0.5 s

Test 1

V_{CE} = 6.0 Vdc, I_C = 1.0 Adc

Test 2

V_{CE} = 12 Vdc, I_C = 500 mAdc

Test 3

V_{CE} = 30 Vdc, I_C = 166 mAdc 2N4234

V_{CE} = 30 Vdc, I_C = 166 mAdc 2N4235

V_{CE} = 30 Vdc, I_C = 166 mAdc 2N4236

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