

NPN POWER AMPLIFIER SILICON TRANSISTOR

Devices

2N4234

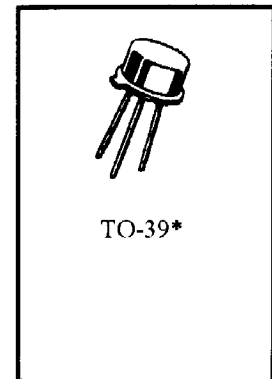
2N4235

2N4236

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			$^{\circ}C$

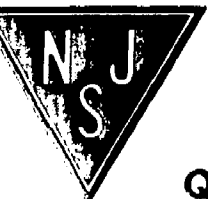
- 1) Derate linearly 5.7 mW/ $^{\circ}C$ for $T_A > +25^{\circ}C$
- 2) Derate linearly 34 mW/ $^{\circ}C$ for $T_C > +25^{\circ}C$



*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage $I_C = 100$ mAdc	2N4234 2N4235 2N4236	$V_{(BR)CEO}$	40 60 80	Vdc
Collector-Emitter Cutoff Current $V_{CE} = 30$ Vdc $V_{CE} = 40$ Vdc $V_{CE} = 60$ Vdc	2N4234 2N4235 2N4236	I_{CEO}	1.0 1.0 1.0	mAdc
Collector-Emitter Cutoff Current $V_{CE} = 40$ Vdc, $V_{BE} = 1.5$ Vdc $V_{CE} = 60$ Vdc, $V_{BE} = 1.5$ Vdc $V_{CE} = 80$ Vdc, $V_{BE} = 1.5$ Vdc	2N4234 2N4235 2N4236	I_{CEX}	100 100 100	η Adc
Collector-Base Cutoff Current $V_{CE} = 40$ Vdc $V_{CE} = 60$ Vdc $V_{CE} = 80$ Vdc	2N4234 2N4235 2N4236	I_{CBO}	100 100 100	η Adc
Emitter-Base Cutoff Current $V_{BE} = 7.0$ Vdc		I_{EBO}	0.5	mAdc



NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

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ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
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ON CHARACTERISTICS ⁽³⁾

Forward-Current Transfer Ratio $I_C = 100 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 250 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$ $I_C = 500 \text{ mAdc}, V_{CE} = 1.0 \text{ Vdc}$	h_{FE}	40 30 20	150	
Collector-Emitter Saturation Voltage $I_C = 1.0 \text{ Adc}, I_B = 100 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$	$V_{CE(sat)}$		0.6 0.4	Vdc
Base-Emitter Saturation Voltage $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$ $I_C = 1.0 \text{ Adc}, I_B = 100 \text{ mAdc}$	$V_{BE(sat)}$		1.1 1.5	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 100 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 10 \text{ MHz}$	$ h_{fe} $	3.0		
Output Capacitance $V_{CE} = 10 \text{ Vdc}, I_E = 0, f = 100 \text{ MHz}$	C_{obo}		100	pF

SAFE OPERATING AREA

DC Tests	
$T_C = +25^\circ\text{C}, 1 \text{ cycle}, t \geq 0.5 \text{ s}$	
Test 1	
$V_{CE} = 6.0 \text{ Vdc}, I_C = 1.0 \text{ Adc}$	
Test 2	
$V_{CE} = 12 \text{ Vdc}, I_C = 500 \text{ mAdc}$	
Test 3	
$V_{CE} = 30 \text{ Vdc}, I_C = 166 \text{ mAdc}$	2N4234
$V_{CE} = 30 \text{ Vdc}, I_C = 166 \text{ mAdc}$	2N4235
$V_{CE} = 30 \text{ Vdc}, I_C = 166 \text{ mAdc}$	2N4236

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