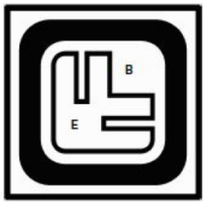
JANHCB2N5679 & JANKCB2N5679
JANHCB2N5680 & JANKCB2N5680

PNP Silicon Amplifier Chip

Rev. V1

Features

- JANHCB and JANKCB per MIL-PRF-19500/582
- Ideal for General Purpose Amplifier and Switching Applications Where High Voltages are Required



Electrical Characteristics (T_A = +25°C unless otherwise noted)

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Collector - Emitter Breakdown Voltage	I_C = -10 mA dc, 2N5679 I_C = -10 mA dc, 2N5680	$V_{(BR)CEO}$	V dc	-100 -120	—
Collector - Emitter Cutoff Current	V_{CE} = -70 V dc, 2N5679 V_{CE} = -80 V dc, 2N5680	I_{CEO}	µA dc	—	-10 -10
Collector - Emitter Cutoff Current	V_{CE} = -100 V dc, V_{BE} = +1.5 Vdc, 2N5679 V_{CE} = -120 V dc, V_{BE} = +1.5 Vdc, 2N5680	I_{CEX1}	nA dc	—	-100 -100
Collector - Base Cutoff Current	V_{CE} = -100 V dc, 2N5679 V_{CE} = -120 V dc, 2N5680	I_{CBO}	nA dc	—	-100 -100
Emitter - Base Cutoff Current	V_{BE} = -4.0 V dc	I_{EBO}	µA dc	—	-1.0
Forward Current Transfer Ratio	I_C = -250 mA dc, V_{CE} = -2.0 V dc I_C = -500 mA dc, V_{CE} = -2.0 V dc I_C = -1.0 A dc, V_{CE} = -2.0 V dc	h_{FE}	-	40 20 5	150
Collector - Emitter Saturation Voltage	I_C = -250 mA dc, I_B = -25 mA dc I_C = -500 mA dc, I_B = -50 mA dc	$V_{CE(sat)1}$ $V_{CE(sat)2}$	V dc	—	-0.6 -1.0
Emitter - Base Saturation Voltage	I_C = -250 mA dc, I_B = -25 mA dc I_C = -500 mA dc, I_B = -50 mA dc	$V_{BE(sat)1}$ $V_{BE(sat)2}$	V dc	—	-1.1 -1.3
Collector - Emitter Cutoff Current	T_A = +150°C V_{CE} = -100 V dc, V_{BE} = +1.5 Vdc, 2N5679 V_{CE} = -120 V dc, V_{BE} = +1.5 Vdc, 2N5680	I_{CEX2}	mA dc	—	-1.0 -1.0
Forward Current Transfer Ratio	T_A = -55°C I_C = -250 mA dc, V_{CE} = -2.0 V dc	h_{FE4}	-	20	
Dynamic Characteristics					
Magnitude of Small-Signal Short-Circuit Forward Current Transfer Ratio	I_C = -0.1 A dc, V_{CE} = -10 V dc, f = 10 MHz	$\lvert h_{FE} \rvert$	-	3	
Small-Signal Short-Circuit Forward Current Transfer Radio	I_C = -0.2 A dc, V_{CE} = -1.5 V dc, f = 1.0 kHz	h_{fe}	-	40	
Open Circuit Output Capacitance	V_{CB} = -20 V dc, I_E = 0, f = 1 MHz	C_{obo}	pF	—	50

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Absolute Maximum Ratings (T_A = +25°C unless otherwise noted)

Ratings	Symbol	Value
Collector - Emitter Voltage 2N5679 2N5680	V_{CEO}	-100 V dc -120 V dc
Collector - Base Voltage 2N5679 2N5680	V_{CBO}	-100 V dc -120 V dc
Emitter - Base Voltage	V_{EBO}	-4.0 V dc
Base Current	I_B	-0.5 A dc
Collector Current	I_C	-1.0 A dc
Operating & Storage Temperature Range	T_J, T_{STG}	-65°C to +200°C

Safe Operating Area	
DC Tests:	T_C = +25°C, I Cycle, t ≥ 0.5 s
Test 1:	I_C = -1.0 A dc, V_{CE} = -2 V dc
Test 2:	I_C = -1.0 A dc, V_{CE} = -10 V dc
Test 3:	I_C = -50 mA dc, V_{CE} = -90 V dc

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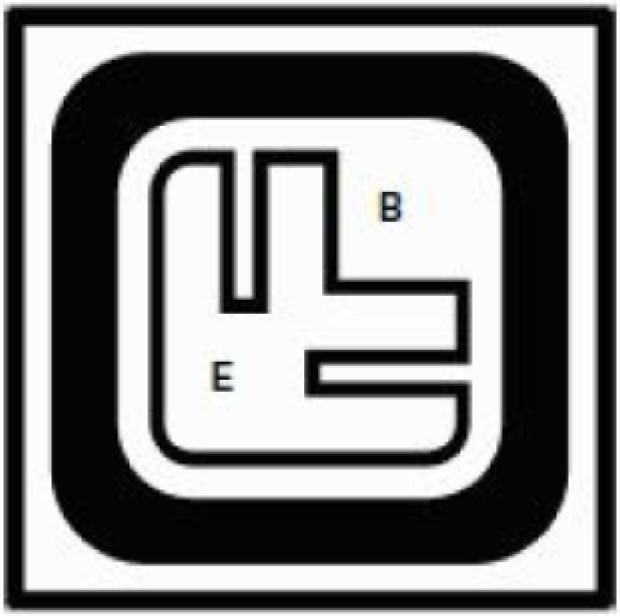
Outline Drawing (Die)



B version

1. Chip size	.065 x .065 inch ±.002 inch (1.651 X 1.651 ±0.0508 millimeter).
2. Chip thickness	.0134 inch ±.0008 inch (0.34036 ±0.02032 millimeter).
3. Top metal	Aluminum, 54,000 Å minimum, 60,000 Å nominal.
4. Back metal	Al/Ti/Ni/Au 10,000 Å minimum, 12,000 Å nominal.
5. Backside	Collector.
6. Bonding pad	B = .017 inch x .017 inch (0.4318 X 0.4318 millimeter). E = .015 inch x .015 inch (0. 381 X 0.381 millimeter).

* FIGURE 3 Physical dimensions for JANHCB and JANKCB die.

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