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TYPE 2N2356

I. General Description

The General Electric 2N2356 is a 5 terminal device containing two silicon NPN transistors and is intended for chopper applications in the inverted connection.

II. Case Dimensions

See attached Figure 1.

III. Absolute Maximum Ratings (25°C)

A. Maximum Temperatures

- | | | |
|---|-----------|--------------|
| 1. Storage | T_{STG} | -65 to 300°C |
| 2. Operating Junction | T_J | -65 to 200°C |
| 3. Lead Temperature (Soldering no time limit) | | 300°C |

B. Maximum Power Dissipation (Both sides or one side only)

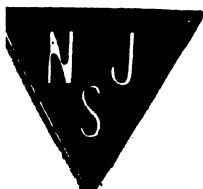
- | | | |
|--------------------------------------|-------|------------|
| 1. Total (Free Air at 25°C) | P_T | 0.6 Watts |
| 2. Free Air Derating Factor | | 3.43 mW/°C |
| 3. Total (Case Temperature at 25°C) | P_T | 2.0 Watts |
| 4. Total (Case Temperature at 100°C) | P_T | 1.14 Watts |
| 5. Junction to Case Derating Factor | | 11.4 mW/°C |

C. Voltages

- | | | |
|---------------------------------|-----------|----------|
| 1. Collector to Base Voltage | V_{CBO} | 25 Volts |
| 2. Emitter to Collector Voltage | V_{ECO} | 20 Volts |
| 3. Emitter to Base Voltage | V_{EBO} | 7 Volts |

D. Current

- | | | |
|----------------------|-------|--------|
| 1. Collector Current | I_C | 500 ma |
|----------------------|-------|--------|



NJ Semi-Conductors reserves the right to change test conditions, parameter 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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IV. Electrical Characteristics (25°C unless otherwise specified)

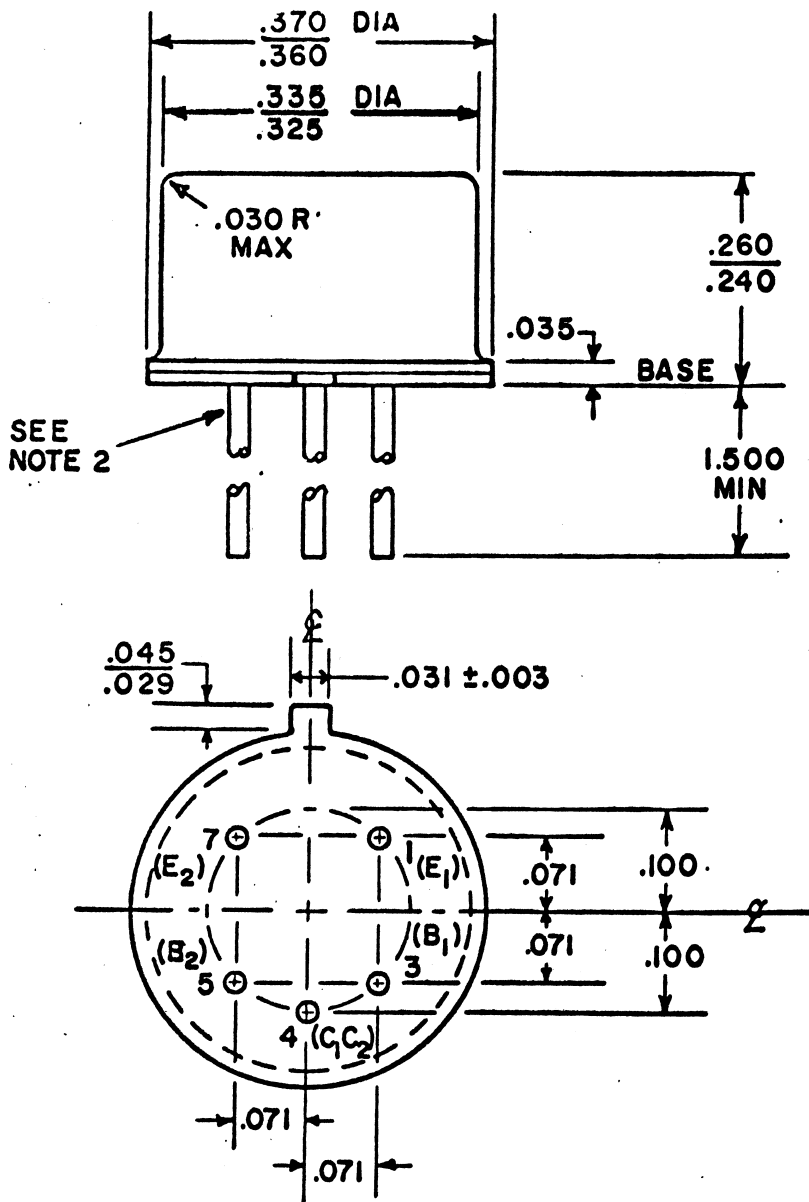
A. DC Characteristics

	<u>Symbol</u>	<u>Min.</u>	<u>Max.</u>	<u>Units</u>
1. Offset Voltage (Figure 2) ($I_{B1}=I_{B2}=1\text{ma}$, $I_{E1}=I_{E2}=0$)	V_o		50	μvolts
2. Offset Voltage (Figure 2) ($I_{B1}=I_{B2}=1\text{ma}$, $I_{E1}=I_{E2}=0$, $T_A=-55^\circ \pm 25^\circ\text{C}$)	ΔV_o		100	μvolts
3. Offset Voltage (Figure 2) ($I_{B1}=I_{B2}=1\text{ma}$, $I_{E1}=I_{E2}=0$, $T_A=25$ to 125°C)	ΔV_o		100	μvolts
4. Collector Leakage Current (V_{CB1} or $V_{CB2} = 25\text{V}$)	I_{CB1} or I_{CB2}		10	na
5. Emitter Leakage Current (V_{EB1} or $V_{EB2} = 5\text{V}$)	I_{EB1} or I_{EB2}		10	na
6. Collector Breakdown Voltage (I_{C1} or $I_{C2} = 100 \mu\text{a}$)	V_{CB1} or V_{CB2}	25		volts
7. Emitter to Emitter Breakdown Voltage ($I_{E1E2}=1\text{ma}$, $I_{B1}=I_{B2}=0$) (Figure 3)	V_{EE0}	20		volts
8. Emitter to Emitter Breakdown Voltage ($I_{E1E2}=100\mu\text{a}$, B_1 , B_2 & C common) (Figure 4)	V_{EES}	7		volts
9. Series on Resistance ($I_{B1}=I_{B2}=1\text{ma}$)	r_s		40	ohms
10. Differential Offset Current ($V_{CB1}=V_{CB2}=6\text{V}$)	ΔI_{OFF}		5	na

B. High Frequency Characteristics

1. Current Transfer Ratio ($I_C=50\text{ma}$, $V_{CE}=10\text{V}$, $f=20\text{mc}$)	h_{fe}	2.5		
2. Collector Capacitance ($V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{mc}$)	C_{ob}		20	pf
3. Input Capacitance ($V_{BE}=0$, $I_E=0$)	C_{ib}		85	pf

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NOTES:

1. ALL DIMENSIONS ARE REFERENCE UNLESS TOLERANCED.
2. LEADS ARE $.017 \pm \begin{smallmatrix} .002 \\ .001 \end{smallmatrix}$ DIAMETER.
3. DIMENSIONS IN INCHES.
4. TAB IS MEASURED FROM MAXIMUM DIA. OF BASE.
5. LEADS HAVING MAXIMUM DIAMETER (.019) MEASURED IN GAGING PLANE $.054 \pm \begin{smallmatrix} .001 \\ .000 \end{smallmatrix}$ BELOW THE BASE OF THE DEVICE SHALL BE WITHIN .007 OF THEIR TRUE LOCATIONS RELATIVE TO A MAXIMUM WIDTH TAB.