

# New Jersey Semi-Conductor Products, Inc.

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2N3924 - 2N3926 - 2N3927

VHF COMMUNICATIONS TRANSISTORS

## DESCRIPTION:

These THOMSON-CSF types are silicon epitaxial NPN planar transistors which employ a multi-emitter electrode design. This feature together with a heavily diffused base matrix located between the individual emitters result in high RF current handling capability, high power gain, low base resistance and low output capacitance. This family is intended for Class A, B or C amplifier, oscillator or frequency multiplier circuits.

## FEATURES:

- Designed for VHF mobile and marine transmitters
- High efficiency at maximum stability
- Improved metallization to achieve extreme ruggedness

2N3924



TO-39  
CB-7

2N3926  
2N3927



TO-60  
CB-27

## ABSOLUTE MAX. RATINGS (+25°C except where noted)

| Symbol               | Characteristic                        | 2N3924         | 2N3926         | 2N3927         |
|----------------------|---------------------------------------|----------------|----------------|----------------|
| V <sub>CB0</sub>     | Collector to Base Voltage             | 36.0V          | 36.0V          | 36.0V          |
| V <sub>CE0</sub>     | Collector to Emitter Voltage          | 18.0V          | 18.0V          | 18.0V          |
| V <sub>EB0</sub>     | Emitter to Base Voltage               | 4.0V           | 4.0V           | 4.0V           |
| I <sub>C</sub> (max) | Continuous Collector Current          | 0.5A           | 1.5A           | 3.0A           |
| P <sub>D</sub>       | Total Dissipation at 25°C Stud        | 7.0W           | 11.4 W         | 23.2W          |
| θ <sub>JC</sub>      | Thermal Resistance (Junction to Stud) | 25°C/W         | 15.1°C/W       | 7.54°C/W       |
| T <sub>J</sub>       | Junction Temperature                  | -65°C to 200°C | -65°C to 200°C | -65°C to 200°C |
| T <sub>stg</sub>     | Storage Temperature                   | -65°C to 200°C | -65°C to 200°C | -65°C to 200°C |
| Pkg                  | Package Type                          | TO 39          | TO 60          | TO 60          |

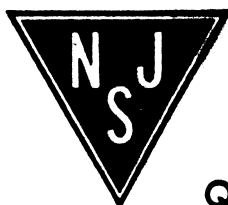
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

| Symbol            | Characteristic                         | Test Conditions                                                                                    | 2N3924 |        | 2N3926 |        | 2N3927 |        |
|-------------------|----------------------------------------|----------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|
|                   |                                        |                                                                                                    | Min.   | Max.   | Min.   | Max.   | Min.   | Max.   |
| BV <sub>CEO</sub> | Collector to Emitter Breakdown Voltage | I <sub>C</sub> = 200mA, I <sub>B</sub> = 0<br>Pulsed through 25mHz                                 | 18. V  | -      | 18. V  | -      | 18. V  | -      |
| BV <sub>CBO</sub> | Collector to Base Breakdown Voltage    | I <sub>C</sub> = 250mA, I <sub>E</sub> = 0<br>I <sub>C</sub> = 300mA, I <sub>E</sub> = 0           | 36. V  | -      | 36. V  | -      | 36. V  | -      |
| BV <sub>EBO</sub> | Emitter to Base Breakdown Voltage      | I <sub>E</sub> = 1mA, I <sub>C</sub> = 0<br>I <sub>E</sub> = 2mA, I <sub>C</sub> = 0               | 4. V   | -      | 4. V   | -      | 4. V   | -      |
| I <sub>CBO</sub>  | Collector Cutoff Current               | V <sub>CB</sub> = 15V, I <sub>E</sub> = 0                                                          | -      | 0.1mA  | -      | 0.1mA  | -      | 25mA   |
| f <sub>T</sub>    | Gain Bandwidth Product                 | V <sub>CE</sub> = 13.6V, I <sub>C</sub> = 100mA<br>V <sub>CE</sub> = 13.6V, I <sub>C</sub> = 200mA | 350    | typ    | 350    | typ    | 350    | typ    |
| C <sub>ob</sub>   | Output Capacitance                     | V <sub>CB</sub> = 13.6V, I <sub>E</sub> = 0<br>f <sub>0</sub> = 1.0 MHz                            | -      | 20. pF | -      | 20. pF | -      | 45. pF |
| P <sub>out</sub>  | Power Output Class C                   | f <sub>0</sub> = 175 MHz, V <sub>CE</sub> = 13.6 V                                                 | 4. W   | -      | 7. W   | -      | 12. W  | -      |
| P <sub>s</sub>    | Power Gain Class C                     | f <sub>0</sub> = 175 MHz, V <sub>CE</sub> = 13.6 V                                                 | 6. dB  | -      | 5.44dB | -      | 4.77dB | -      |
| η                 | Collector Efficiency Class C           | f <sub>0</sub> = 175 MHz, V <sub>CE</sub> = 13.6 V                                                 | 70. %  | -      | 70. %  | -      | 80. %  | -      |

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THOMSON-CSF  
COMPONENTS



Quality Semi-Conductors