

*New Jersey Semi-Conductor Products, Inc.*

20 STERN AVE.  
 SPRINGFIELD, NEW JERSEY 07081  
 U.S.A.

TELEPHONE: (973) 376-2922  
 (212) 227-6005  
 FAX: (973) 376-8960

UHF/VHF  
 POWER  
 TRANSISTORS

**2N3866**  
**(2N4427)**

# NPN UHF/VHF POWER TRANSISTORS

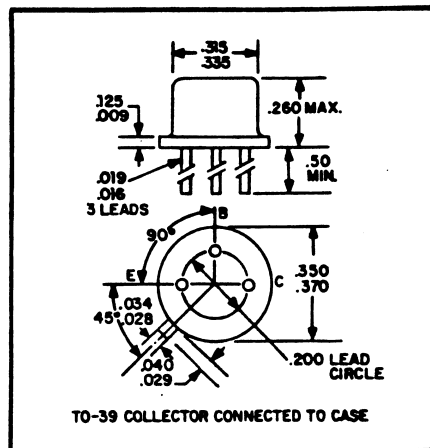
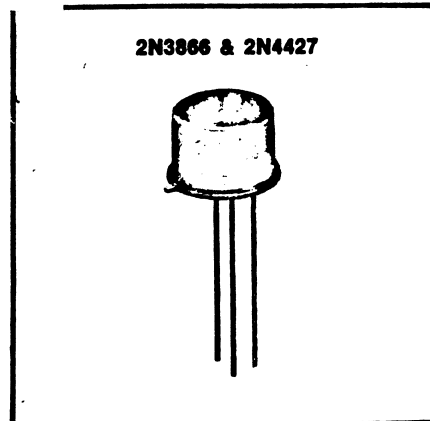
- Complete Large Signal Design Information

### 2N3866

- For Class A, B or C UHF/VHF Military and Industrial Communications
- 1 Watt output at 400 MHz, 28V and 10 db gain
- Typical  $f_t$  800 MHz

### 2N4427

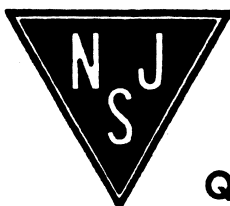
- For Class B or C VHF low voltage applications
- 1 Watt output at 175 MHz, 12V supply and 10 db gain



The ITT 2N3866 and 2N4427 are silicon planar epitaxial NPN power transistors intended for use in UHF/VHF applications.

## ABSOLUTE MAXIMUM RATINGS @ 25°C case temperature

| CHARACTERISTICS              | 2N3866      | 2N4427      | UNITS |
|------------------------------|-------------|-------------|-------|
| Collector-to-Base Voltage    | 55          | 40          | Volts |
| Collector-to-Emitter Voltage | 30          | 20          | Volts |
| Emitter-to-Base Voltage      | 3.5         | 2.0         | Volts |
| Collector Current            | 0.4         | 0.4         | Amps  |
| Total Power Dissipation      | 5.0         | 3.5         | Watts |
| Storage Temperature          | -65 to +200 | -65 to +200 | °C    |
| Junction Temperature         | +200        | +200        | °C    |



Quality Semi-Conductors

**ELECTRICAL CHARACTERISTICS @ 25°C case temperature**

| SYMBOL        |                  | MIN.       | TYP. | MAX.       | UNITS   | CONDITIONS   |
|---------------|------------------|------------|------|------------|---------|--|
| $BV_{CBO}$    | 2N3866<br>2N4427 | 55<br>40   |      |            | Volts   | $I_C = 0.1mA$<br>$I_C = 0.1mA$   |
| $LV_{CEO}$    | 2N3866<br>2N4427 | 30<br>20   |      |            | Volts   | $I_C = 5mA$<br>$I_C = 5mA$   |
| $LV_{CER}$    | 2N3866<br>2N4427 | 55<br>40   |      |            | Volts   | $I_C = 5mA; R_{BE} = 10 \text{ ohms}$<br>$I_C = 5mA; R_{BE} = 10 \text{ ohms}$           |
| $BV_{EBO}$    | 2N3866<br>2N4427 | 3.5<br>2.0 |      |            | Volts   | $I_E = 0.1mA$<br>$I_E = 0.1mA$   |
| $I_{CEO}$     | 2N3866<br>2N4427 |            |      | 20<br>20   | $\mu A$ | $V_{CE} = 28V$<br>$V_{CE} = 12V$   |
| $I_{CEX}$     | 2N3866<br>2N4427 |            |      | 0.1<br>0.1 | mA      | $V_{CE} = 55V; V_{BE} = -1.5V$<br>$V_{CE} = 40V; V_{BE} = -1.5V$                         |
| $h_{FE}$      | 2N3866<br>2N4427 | 10<br>10   |      | 200<br>200 |         | $V_{CE} = 5V; I_C = .05A$<br>$V_{CE} = 5V; I_C = 0.1A$                                   |
| $h_{FE}$      | 2N3866<br>2N4427 | 5<br>5     |      |            |         | $V_{CE} = 5V; I_C = 0.36A$<br>$V_{CE} = 5V; I_C = 0.36A$                                 |
| $V_{CE(sat)}$ | 2N3866<br>2N4427 |            |      | 1.0<br>0.5 | Volts   | $I_C = 0.1A; I_B = .02A$<br>$I_C = 0.1A; I_B = .02A$                                     |
| $C_{ob}$      | 2N3866<br>2N4427 |            |      | 3<br>4     | pF      | $V_{CB} = 28V; f = 1MHz$<br>$V_{CB} = 12V; f = 1MHz$                                     |
| $ h_{fe} $    | 2N3866<br>2N4427 | 2.5<br>2.5 | 4.0  |            |         | $V_{CE} = 15V; I_C = 50mA; f = 200MHz$<br>$V_{CE} = 15V; I_C = 50mA; f = 200MHz$         |
| $P_{IE}$      | 2N3866<br>2N4427 |            |      | 0.1<br>0.1 | Watts   | $V_{CC} = 28V; P_{OE} = 1Watt; f = 400MHz$<br>$V_{CC} = 12V; P_{OE} = 1Watt; f = 175MHz$ |
| $\eta$        | 2N3866<br>2N4427 | 45<br>50   |      |            | %       | $V_{CE} = 28V; P_{OE} = 1Watt; f = 400MHz$<br>$V_{CE} = 12V; P_{OE} = 1Watt; f = 175MHz$ |

**TYPICAL CHARACTERISTICS**

