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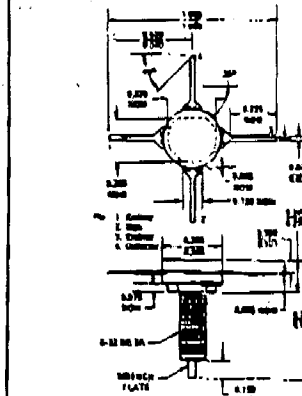
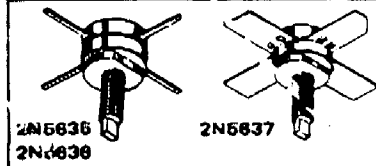
**2N5635 (SILICON)**  
**2N5636**  
**2N5637**

## NPN SILICON RF POWER TRANSISTORS

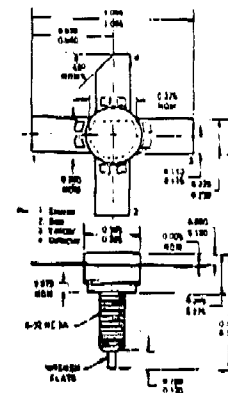
... designed for VHF/UHF amplifier applications. These devices are suitable for use in 28 volt systems to 470 MHz. These transistors are ideal for 225-400 MHz communications equipment.

- Balanced Emitter Construction to provide the designer with the device technology that assures ruggedness and resists transistor damage caused by load mismatch.
- Low inductance strip line packaging for easier and better broadband designs.
- Ceramic Package
- Choice of Power Levels at 400 MHz, 28 Vdc -  
 2N5635 - 2.5 Watts - 6.2 dB (Min) Gain  
 2N5636 - 7.5 Watts - 6.7 dB (Min) Gain  
 2N5637 - 20 Watts - 4.6 dB (Min) Gain

## NPN SILICON RF POWER TRANSISTORS



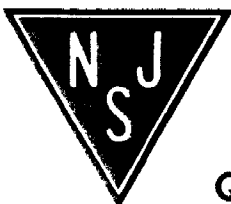
2N5636, 2N5636



2N5637

### \*MAXIMUM RATINGS

Rating	Symbol	2N5635	2N5636	2N5637	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	36			Vdc
Collector-Base Voltage	V <sub>CB</sub>	60			Vdc
Emitter-Base Voltage	V <sub>EB</sub>	4.0			Vdc
Collector Current	I <sub>C</sub>	1.0	1.6	3.0	Adc
Total Device Dissipation @ T <sub>A</sub> = 25°C	P <sub>D</sub>	7.5	15	30	Watts
Derate above 25°C		43	86	171	mW/°C
Operating and Storage Junction Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200			°C



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.

**Quality Semi-Conductors**

2N5635, 2N5636, 2N5637 (continued)

\*ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage (Note 1) (I <sub>C</sub> = 100 mA <sub>dc</sub> , I <sub>B</sub> = 0) (I <sub>C</sub> = 200 mA <sub>dc</sub> , I <sub>B</sub> = 0)	BV <sub>CEO</sub>	35 35	—	—	V <sub>dc</sub>
Collector-Emitter Breakdown Voltage (Note 1) (I <sub>C</sub> = 100 mA <sub>dc</sub> , V <sub>BE</sub> = 0) (I <sub>C</sub> = 200 mA <sub>dc</sub> , V <sub>BE</sub> = 0)	BV <sub>CES</sub>	60 60	—	—	V <sub>dc</sub>
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 1.0 mA <sub>dc</sub> , I <sub>C</sub> = 0) (I <sub>E</sub> = 5.0 mA <sub>dc</sub> , I <sub>C</sub> = 0) (I <sub>E</sub> = 10 mA <sub>dc</sub> , I <sub>C</sub> = 0)	BV <sub>EB0</sub>	4.0 4.0 4.0	—	—	V <sub>dc</sub>
Collector Cutoff Current (V <sub>CE</sub> = 30 V <sub>dc</sub> , I <sub>E</sub> = 0)	I <sub>CB0</sub>	—	—	0.1 1.0 1.0	mA <sub>dc</sub>
<b>ON CHARACTERISTICS</b>					
DC Current Gain (I <sub>C</sub> = 100 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> ) (I <sub>C</sub> = 200 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> ) (I <sub>C</sub> = 500 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> )	h <sub>FE</sub>	5.0 5.0 5.0	—	—	—
<b>DYNAMIC CHARACTERISTICS</b>					
Output Capacitance (V <sub>CE</sub> = 30 V <sub>dc</sub> , I <sub>E</sub> = 0, f = 0.1 to 1.0 MHz)	C <sub>ob</sub>	—	5.0 10 20	10 20 30	pF
<b>FUNCTIONAL TEST</b>					
Common-Emitter Amplifier Power Gain P <sub>out</sub> = 2.5 Watts, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz P <sub>out</sub> = 7.5 Watts, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz P <sub>out</sub> = 20 Watts, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz	G <sub>pE</sub>	6.2 6.7 4.8	9.2 7.0 5.8	—	dB
Power Output P <sub>in</sub> = 0.6 Watt, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz P <sub>in</sub> = 2.0 Watts, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz P <sub>in</sub> = 7.0 Watts, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz	P <sub>out</sub>	2.5 7.5 20	3.2 8.4 22	—	Watts
Collector Efficiency P <sub>out</sub> = 2.5 Watts, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz P <sub>out</sub> = 7.5 Watts, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz P <sub>out</sub> = 20 Watts, V <sub>CE</sub> = 28 V <sub>dc</sub> , f = 400 MHz	η	50 60 80	—	—	%

\*Indicates JEDEC Registered Data.  
Note 1: Pulsed through 35 nH inductor.

FIGURE 1 - 400 MHz TEST CIRCUIT (2N5635, 2N5636)

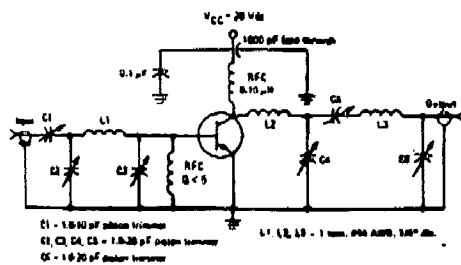


FIGURE 2 - 400 MHz TEST CIRCUIT (2N5637)

