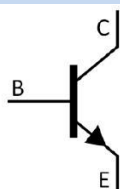


TO-92      NPN      Silicon NPN transistor in a TO-92 Plastic Package.

$P_C$     $I_C$        $h_{FE}$       9012  
 High  $P_C$  and  $I_C$ , excellent  $h_{FE}$  linearity, complementary pair with 9012.

Amplifier of portable radios in class B push-pull operation.

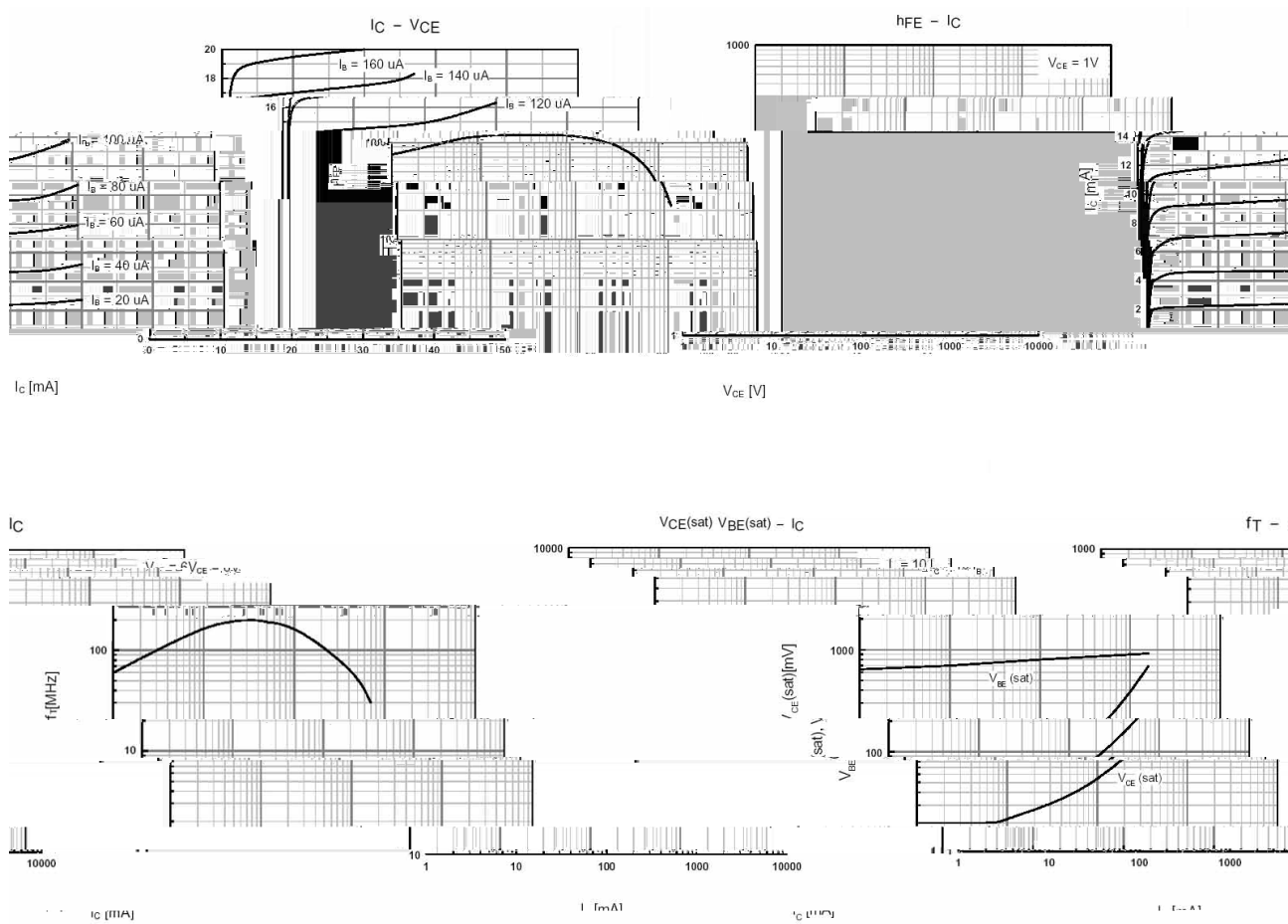


PIN1   Collector      PIN 2   Base      PIN 3   Emitter

| $h_{FE}$ Classifications<br>Symbol | D     | E      | F      | G       | H       | I       |
|------------------------------------|-------|--------|--------|---------|---------|---------|
| $h_{FE}$ Range                     | 64~91 | 78~112 | 96~135 | 112~166 | 144~202 | 188~276 |

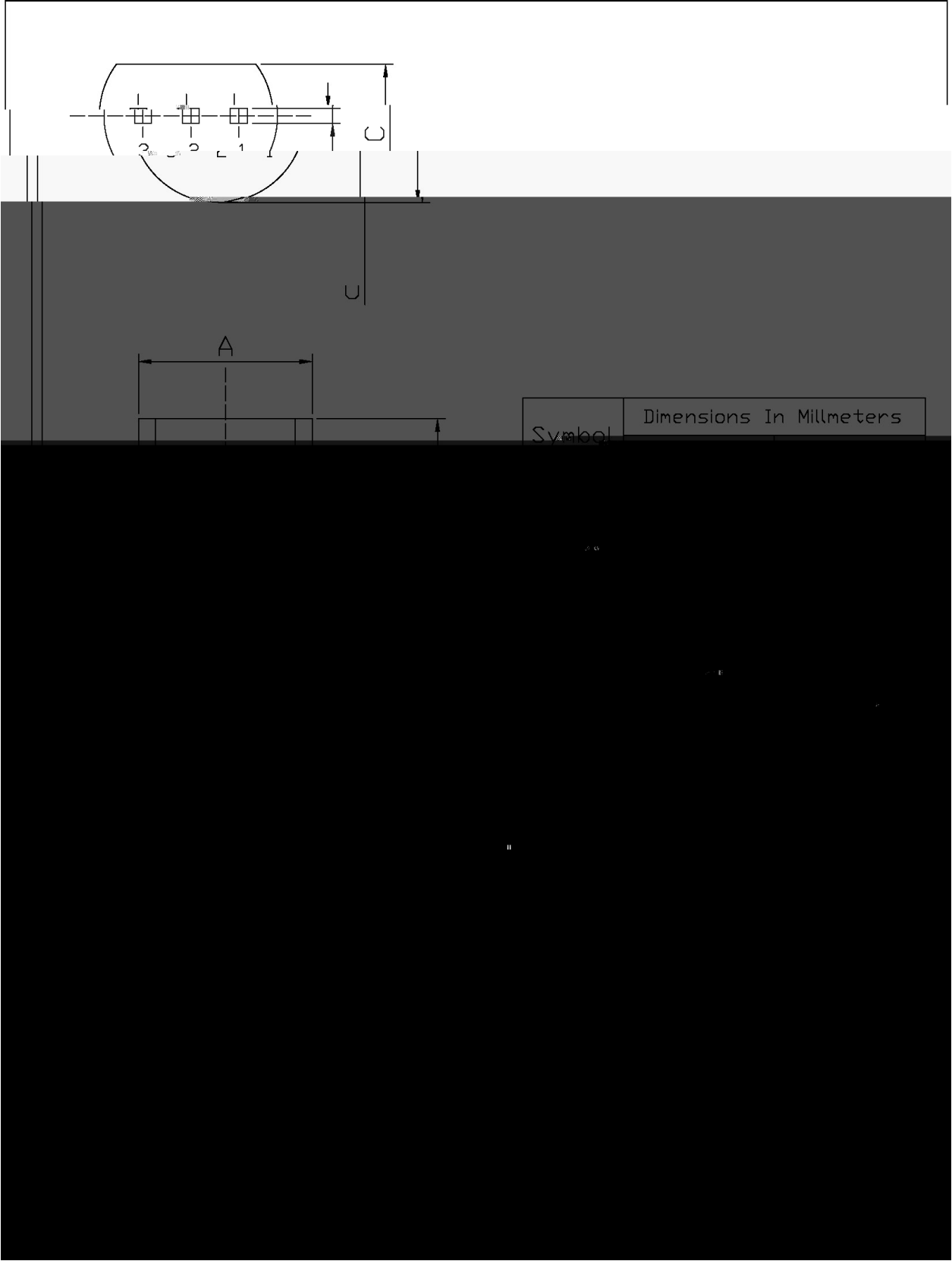
| Parameter                      | Symbol    | Rating  | Unit |
|--------------------------------|-----------|---------|------|
| Collector to Base Voltage      | $V_{CBO}$ | 40      | V    |
| Collector to Emitter Voltage   | $V_{CEO}$ | 20      | V    |
| Emitter to Base Voltage        | $V_{EBO}$ | 5.0     | V    |
| Collector Current - Continuous | $I_C$     | 500     | mA   |
| Base Current - Continuous      | $I_B$     | 100     | mA   |
| Collector Power Dissipation    | $P_C$     | 625     | mW   |
| Junction Temperature           | $T_J$     | 150     |      |
| Storage Temperature Range      | $T_{stg}$ | -55 150 |      |

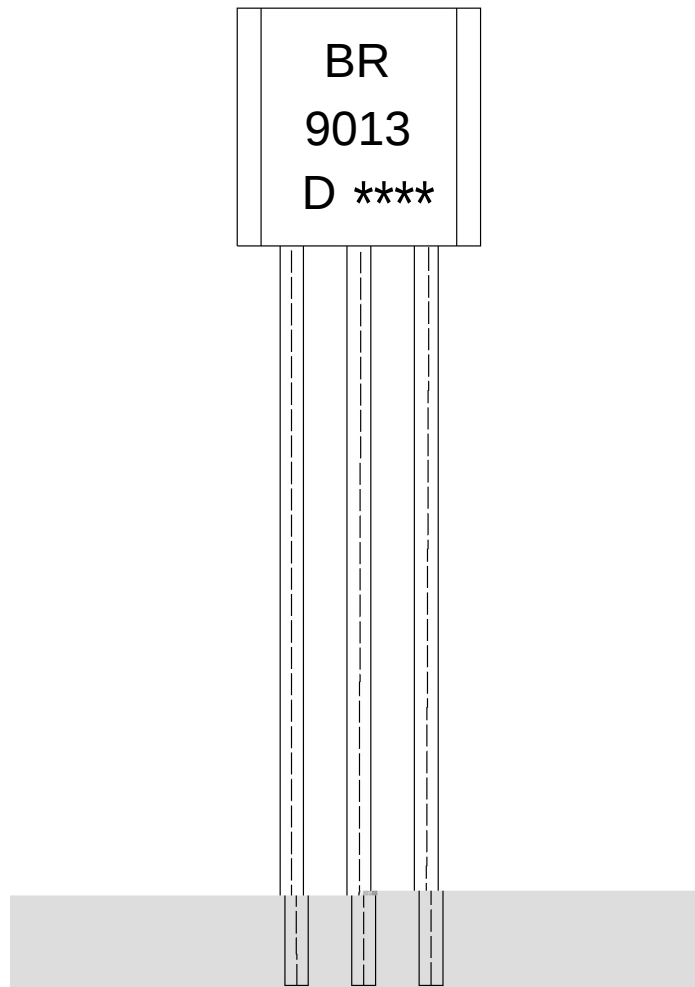
| Parameter                               | Symbol        | Test Conditions           | Min | Typ  | Max | Unit    |
|-----------------------------------------|---------------|---------------------------|-----|------|-----|---------|
| Collector to Base Breakdown Voltage     | $V_{CBO}$     | $I_C=0.1mA$ $I_E=0$       | 40  |      |     | V       |
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | $I_C=1.0mA$ $I_B=0$       | 20  |      |     | V       |
| Emitter to Base Breakdown Voltage       | $V_{EBO}$     | $I_E=0.1mA$ $I_C=0$       | 5.0 |      |     | V       |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB}=25V$ $I_E=0$      |     |      | 0.1 | $\mu A$ |
| Emitter Cut-Off Current                 | $I_{EBO}$     | $V_{EB}=3.0V$ $I_C=0$     |     |      | 0.1 | $\mu A$ |
| DC Current Gain                         | $h_{FE(1)}$   | $V_{CE}=1.0V$ $I_C=50mA$  | 64  |      | 276 |         |
|                                         | $h_{FE(2)}$   | $V_{CE}=1.0V$ $I_C=500mA$ | 40  |      |     |         |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=500mA$ $I_B=50mA$    |     | 0.16 | 0.6 | V       |
| Base to Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=500mA$ $I_B=50mA$    |     | 0.91 | 1.2 | V       |
| Base to Emitter Voltage                 | $V_{BE}$      | $V_{CE}=1.0V$ $I_C=10mA$  |     | 0.67 | 0.7 | V       |



T0-92

Unit: mm





BR

9013

D:  $h_{FE}$

\*\*\*\*

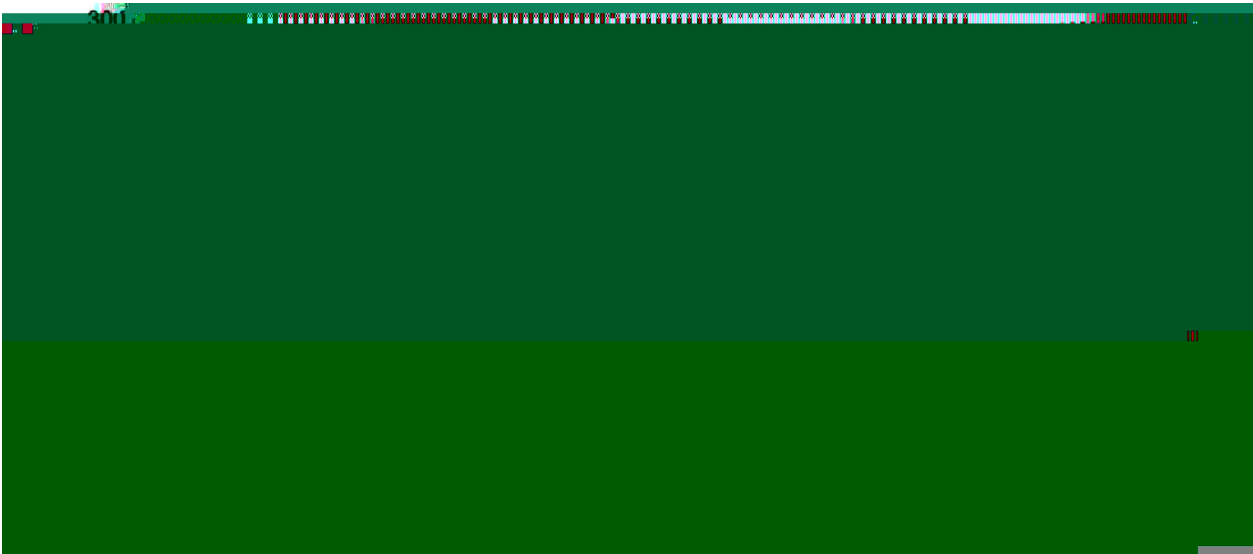
Note:

BR: Company Code.

9013: Product Type.

D:  $h_{FE}$  Classifications Symbol.

\*\*\*\*: Lot No. Code, code change with Lot No.



- 1

25 150

60 90sec;

2

255±5

5±0.5sec;

3

2 10

/sec.
- Note:

1.Preheating:25~150 , Time:60~90sec.

2.Peak Temp.:255±5 , Duration:5±0.5sec.

3. Cooling Speed: 2~10 /sec.

270±5

10±1 sec.

Temp.:270±5