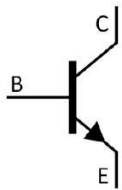


TO-92LM      NPN      Silicon NPN transistor in a TO-92LM Plastic Package.

2SA965  
 Complementary to 2SA965.

Audio frequency amplifier and driver stage amplifier Applications.

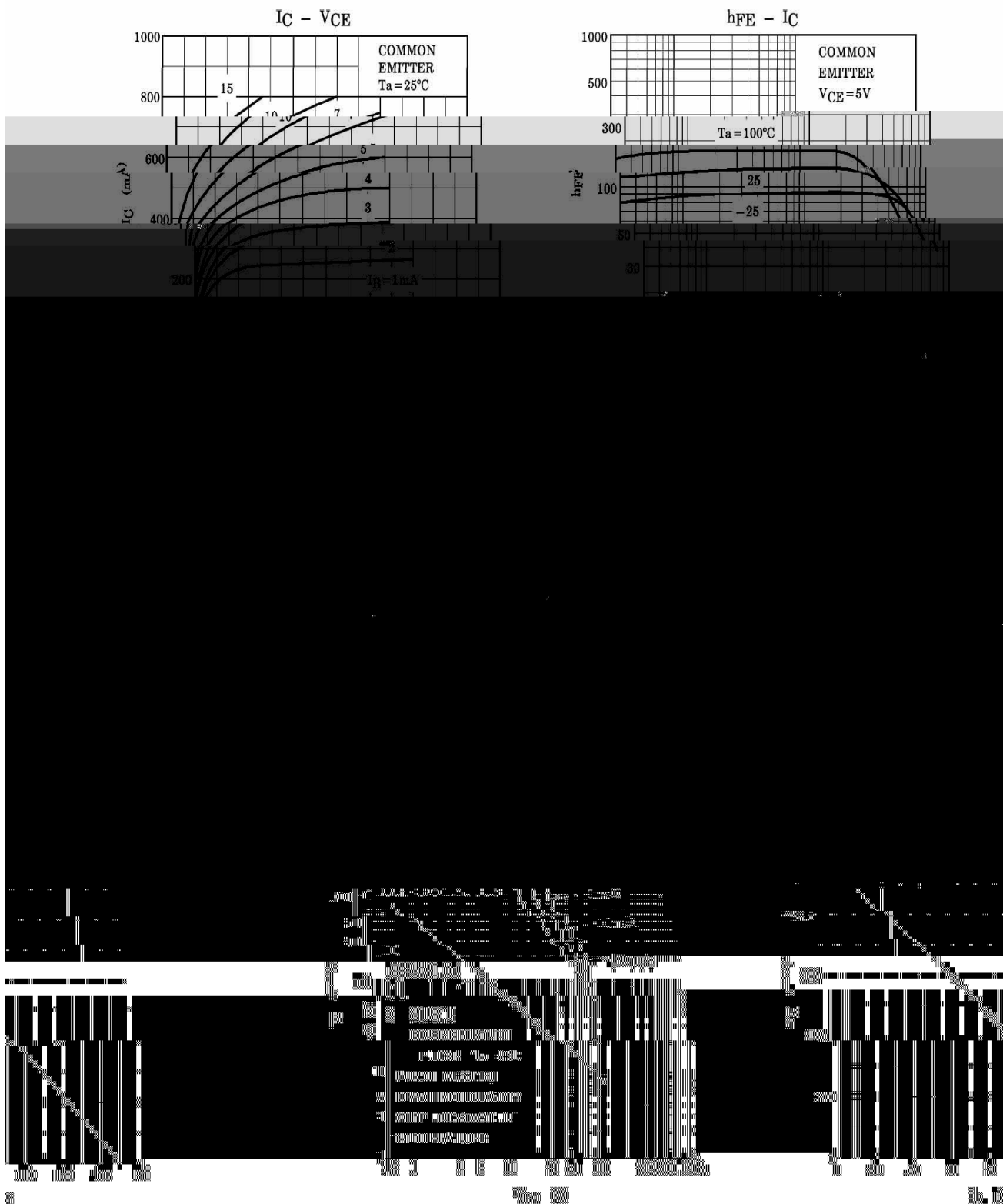


PIN1   Base      PIN 2   Collector      PIN 3   Emitter

|                                    |          |           |
|------------------------------------|----------|-----------|
| $h_{FE}$ Classifications<br>Symbol | O        | Y         |
| $h_{FE}$ Range                     | 80   160 | 120   240 |

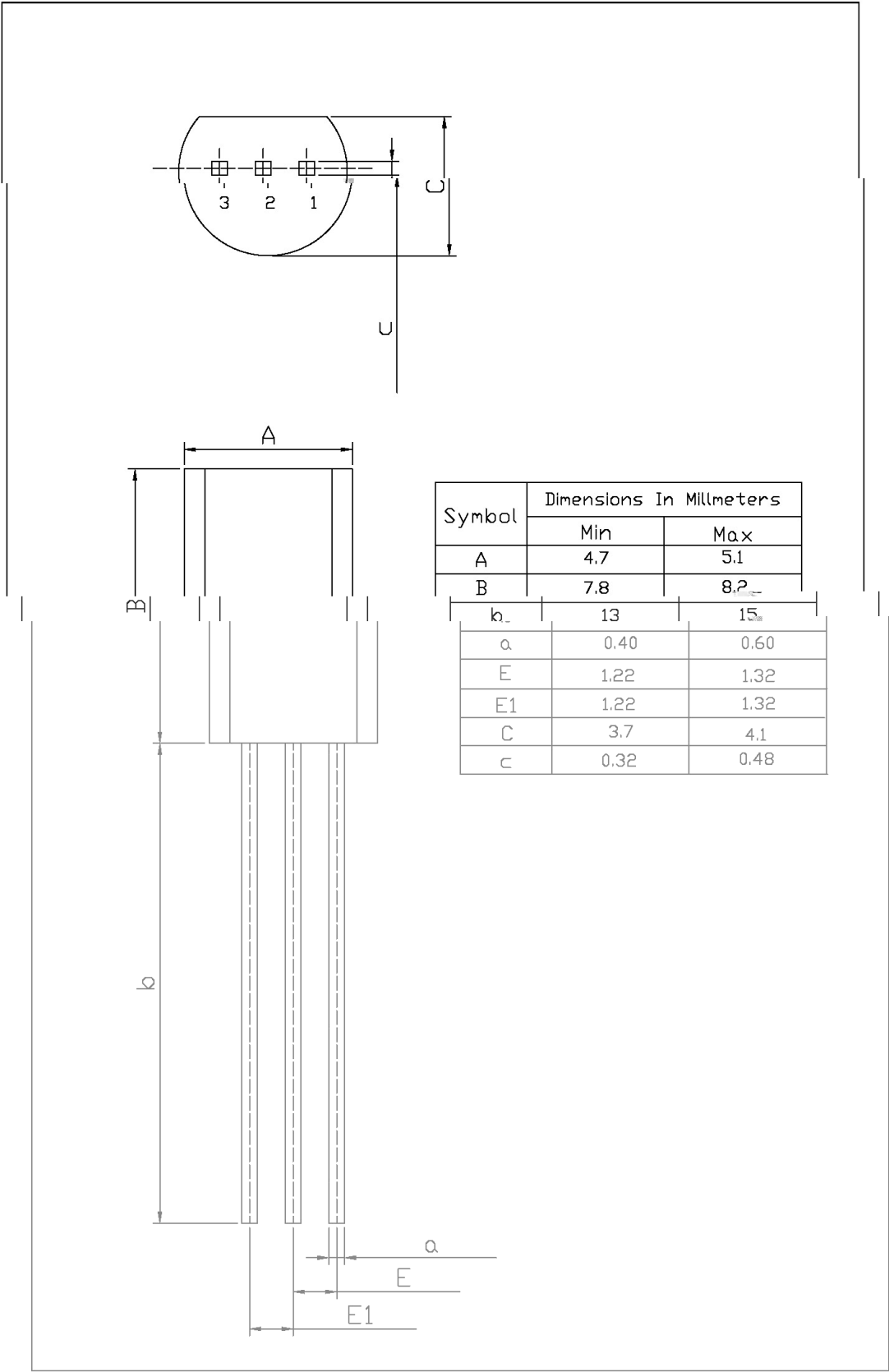
| Parameter                    | Symbol    | Rating  | Unit |
|------------------------------|-----------|---------|------|
| Collector to Base Voltage    | $V_{CBO}$ | 120     | V    |
| Collector to Emitter Voltage | $V_{CEO}$ | 120     | V    |
| Emitter to Base Voltage      | $V_{EBO}$ | 5.0     | V    |
| Collector Current (DC)       | $I_C$     | 800     | mA   |
| Emitter Current              | $I_E$     | -800    | mA   |
| Collector Power Dissipation  | $P_C$     | 900     | mW   |
| Junction Temperature         | $T_J$     | 150     |      |
| Storage Temperature Range    | $T_{stg}$ | -55 150 |      |

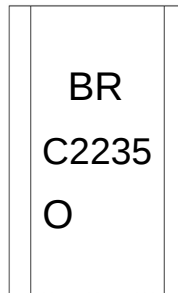
| Parameter                               | Symbol        | Test Conditions                    | Min | Typ | Max | Unit    |
|-----------------------------------------|---------------|------------------------------------|-----|-----|-----|---------|
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | $I_C=10mA$ $I_B=0$                 | 120 |     |     | V       |
| Emitter to Base Breakdown Voltage       | $V_{EBO}$     | $I_E=1.0mA$ $I_C=0$                | 5.0 |     |     | V       |
| Collector Cut-Off Current               | $I_{CBO}$     | $V_{CB}=120V$ $I_E=0$              |     |     | 0.1 | $\mu A$ |
| Emitter Cut-Off Current                 | $I_{EBO}$     | $V_{EB}=5.0V$ $I_C=0$              |     |     | 0.1 | $\mu A$ |
| DC Current Gain                         | $h_{FE}$      | $V_{CE}=5.0V$ $I_C=100mA$          | 80  |     | 240 |         |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=500mA$ $I_B=50mA$             |     |     | 1.0 | V       |
| Base to Emitter Saturation Voltage      | $V_{BE}$      | $V_{CE}=5.0V$ $I_C=500mA$          |     |     | 1.0 | V       |
| Transition Frequency                    | $f_T$         | $V_{CE}=5.0V$ $I_C=100mA$          |     | 120 |     | MHz     |
| Collector output capacitance            | $C_{ob}$      | $V_{CB}=10V$ $I_E=0$<br>$f=1.0MHz$ |     |     | 30  | pF      |



TO-92LM

Unit: mm





BR:

C2235

O:  $h_{FE}$

\*\*\*\*

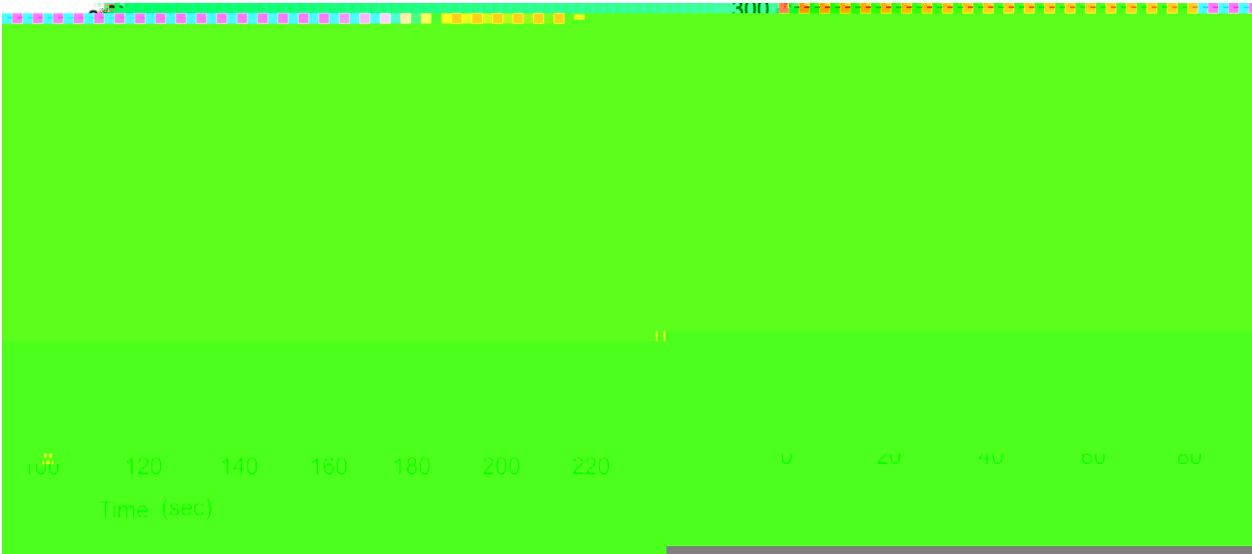
Note:

BR: Company Code.

C2235: Product Type.

O:  $h_{FE}$  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                      Time:10±1 sec

/ BULK

| Package Type | Units |  |  |  |  | Dimension |  | (unit mm3) |
|--------------|-------|--|--|--|--|-----------|--|------------|
|              |       |  |  |  |  |           |  |            |
|              |       |  |  |  |  |           |  |            |

/ AMMO

| Package Type | Units |  |  |  |  | Dimension |  | (unit mm3) |
|--------------|-------|--|--|--|--|-----------|--|------------|
|              |       |  |  |  |  |           |  |            |
|              |       |  |  |  |  |           |  |            |