

**FOR HIGH FREQUENCY AMPLIFY, MEDIUM FREQUENCY AMPLIFY  
SILICON NPN EPITAXIAL TYPE**

**DESCRIPTION**

Mitsubishi 2SC2724 is a silicon NPN epitaxial type transistor.

**FEATURE**

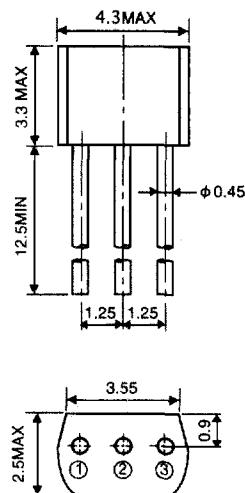
- High gain 10.7MHz, MAG=45dB typ
- Low noise figure 10.7MHz, NF=3.0dB typ
- Small package
- Low  $y_{re}$  10.7MHz,  $y_{re}=-j0.11\text{mS}$  typ

**APPLICATION**

High frequency oscillating, mix, frequency exchange and medium frequency amplifier of small type communication machine, small type radio.

**OUTLINE DRAWING**

Unit:mm



**TERMINAL CONNECTOR**

- ① : EMMITER
- ② : COLLECTOR
- ③ : BASE

EIAJ : —  
JEDEC : —

Note)

The dimension without tolerance represent central value.

**MAXIMUM RATINGS (Ta=25°C)**

| Symbol           | Parameter                      | Ratings     | Unit |
|------------------|--------------------------------|-------------|------|
| V <sub>CB0</sub> | Collector to Base voltage      | 30          | V    |
| V <sub>EB0</sub> | Emitter to Base voltage        | 4           | V    |
| V <sub>CE0</sub> | Collector to Emitter voltage   | 25          | V    |
| I <sub>C</sub>   | Collector current              | 30          | mA   |
| P <sub>C</sub>   | Collector dissipation(Ta=25°C) | 200         | mW   |
| T <sub>J</sub>   | Junction temperature           | +125        | °C   |
| T <sub>stg</sub> | Storage temperature            | -55 to +125 | °C   |

**ELECTICAL CHARACTERISTICS (Ta=25°C)**

| Symbol            | Parameter                    | Test conditions                                                            | Limits |     |     | Unit |
|-------------------|------------------------------|----------------------------------------------------------------------------|--------|-----|-----|------|
|                   |                              |                                                                            | Min    | Typ | Max |      |
| I <sub>CBO</sub>  | Collector cut off current    | V <sub>CB</sub> =30V, I <sub>E</sub> =0                                    |        |     | 1   | μA   |
| I <sub>EB0</sub>  | Emitter cut off current      | V <sub>EB</sub> =4V, I <sub>C</sub> =0                                     |        |     | 1   | μA   |
| h <sub>FE</sub> * | DC forward current gain      | V <sub>CE</sub> =6V, I <sub>C</sub> =1mA                                   | 35     |     | 300 | —    |
| f <sub>T</sub>    | Gain band width product      | V <sub>CE</sub> =6V, I <sub>E</sub> =-1mA                                  | 150    | 200 |     | MHz  |
| C <sub>ob</sub>   | Collector output capacitance | V <sub>CB</sub> =6V, I <sub>E</sub> =0, f=1MHz                             |        | 2.0 | 2.7 | pF   |
| C <sub>cb</sub>   | Base time constant           | V <sub>CB</sub> =6V, I <sub>E</sub> =-1mA, f=31.8MHz                       |        | 20  | 60  | pS   |
| NF                | Noise figure                 | V <sub>CE</sub> =6V, I <sub>E</sub> =-1mA, f=10.7MHz, R <sub>G</sub> =500Ω |        | 3.0 |     | dB   |

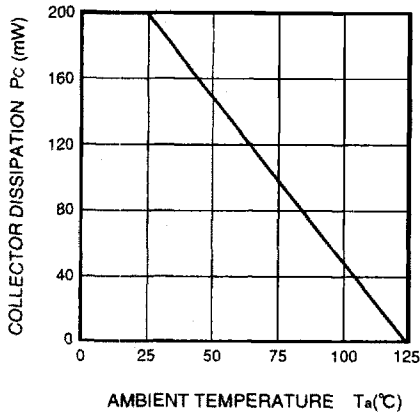
\* : It shows h<sub>FE</sub> classification in right table.

| Item            | B        | C         | D         | E          |
|-----------------|----------|-----------|-----------|------------|
| h <sub>FE</sub> | 35 to 70 | 55 to 110 | 90 to 180 | 150 to 300 |

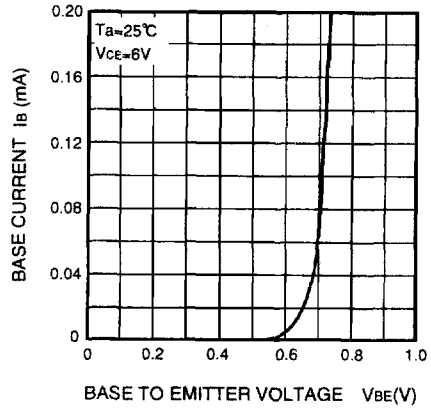
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TYPICAL CHARACTERISTICS

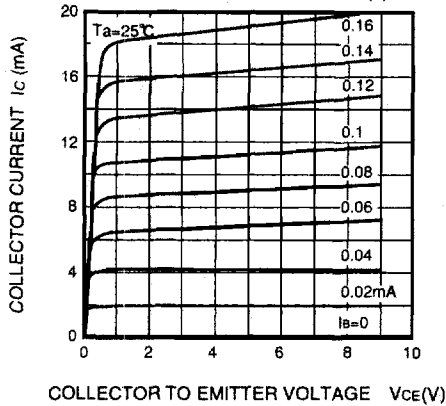
COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



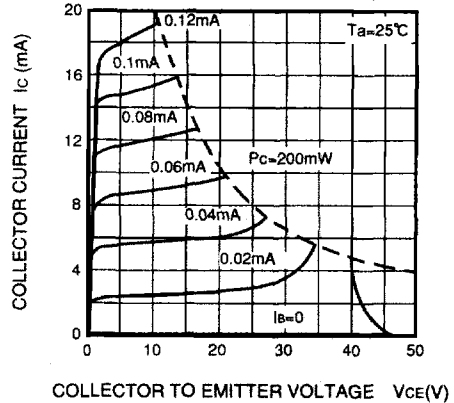
COMMON EMITTER INPUT



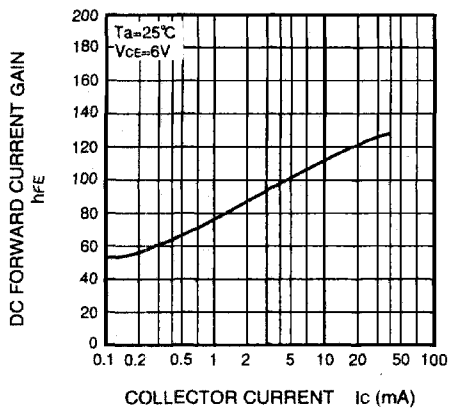
COMMON EMITTER OUTPUT (1)



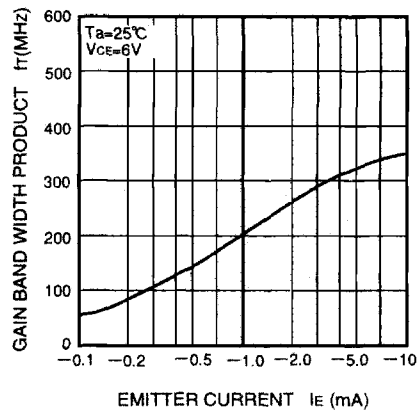
COMMON EMITTER OUTPUT (2)



DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT  
VS. EMITTER CURRENT

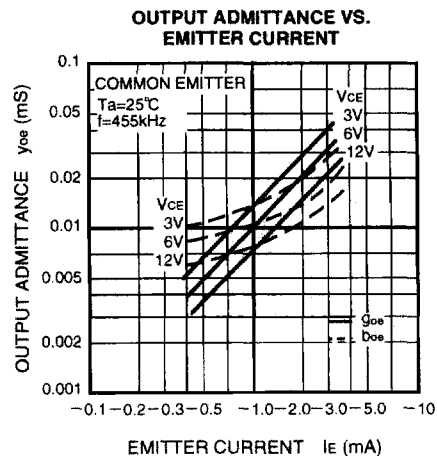
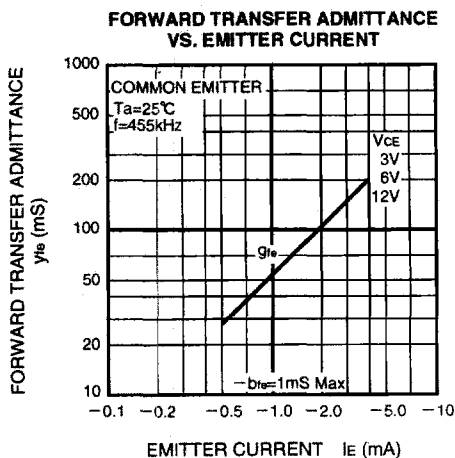
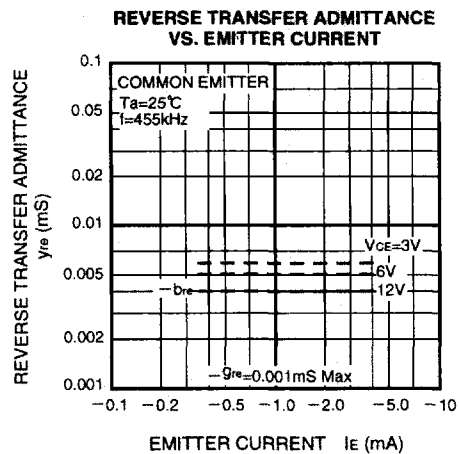
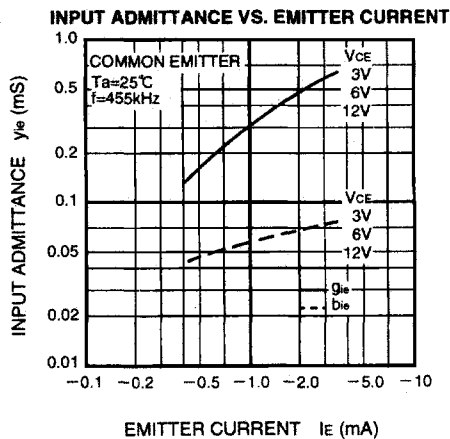


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COMMON EMITTER, y PARAMETER (TYPICAL VALUE) (Ta=25°C)

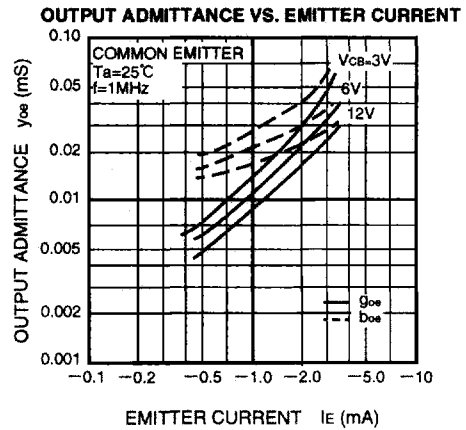
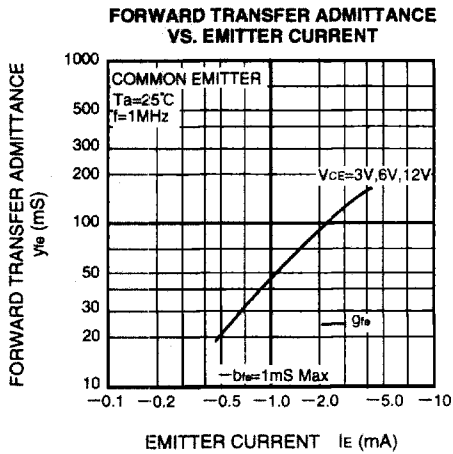
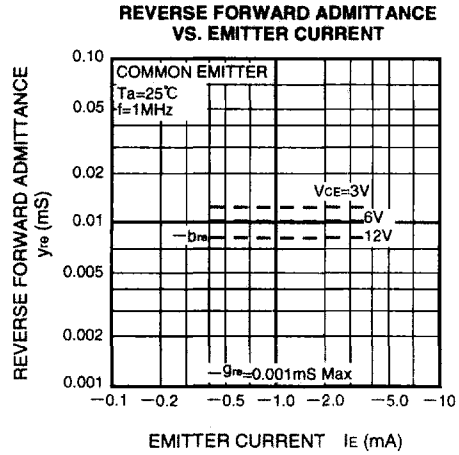
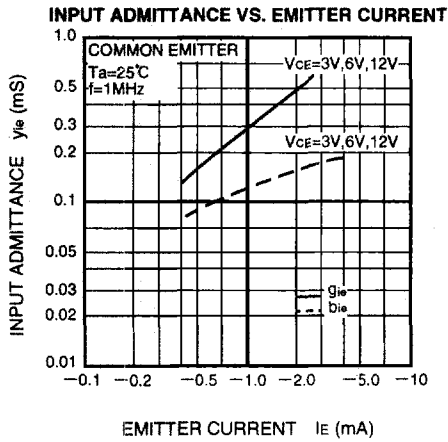
| Test conditions |      | f=455kHz<br>VCE=6V<br>IE=-1mA | f=1MHz<br>VCE=6V<br>IE=-1mA | f=10.7MHz<br>VCE=6V<br>IE=-1mA | f=100MHz<br>VCE=6V<br>IE=-1mA |
|-----------------|------|-------------------------------|-----------------------------|--------------------------------|-------------------------------|
| y Parameter     | gie  | 0.30                          | 0.30                        | 0.38                           | 4.4                           |
|                 | bie  | 0.06                          | 0.12                        | 1.40                           | 11.0                          |
| yre             | -gre | 0.001Max                      | 0.001Max                    | 0.005Max                       | 0.05Max                       |
|                 | -bre | 0.005                         | 0.010                       | 0.11                           | 1.0                           |
| yle             | gfe  | 50                            | 46                          | 37                             | 25                            |
|                 | -bfe | 1.0Max                        | 1.0Max                      | 2.8                            | 16                            |
| yoe             | goe  | 0.010                         | 0.012                       | 0.03                           | 0.32                          |
|                 | boe  | 0.011                         | 0.022                       | 0.18                           | 1.3                           |

COMMON EMITTER, 455kHz y PARAMETER

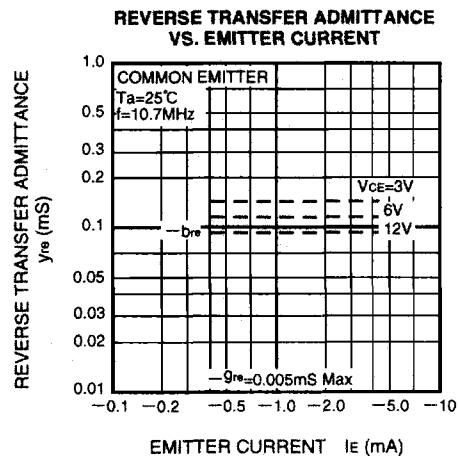
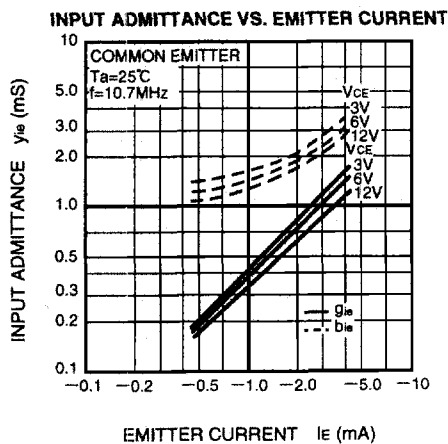


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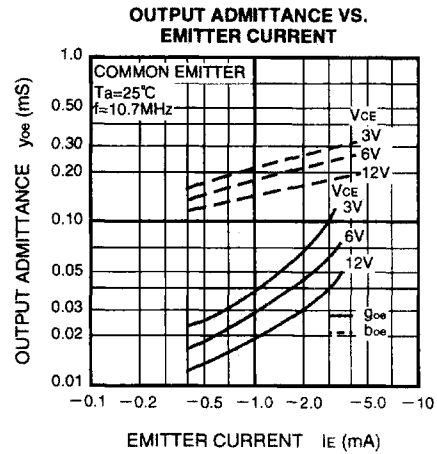
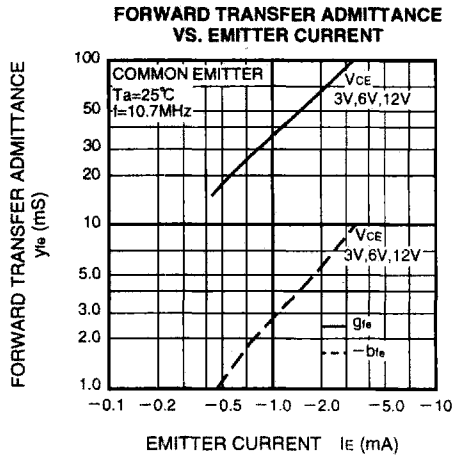
COMMON EMITTER, 1MHz y PARAMETER



COMMON EMITTER, 10.7MHz y PARAMETER



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COMMON EMITTER, 100MHz y PARAMETER

