

NPN General Purpose Amplifier

SUPERSOT™ –6 Surface Mount Package

FMB5551

- This device is designed for general purpose high voltage amplifiers and gas discharge display driving
- Sourced from process 16
- See [MMBT5551](#) for characteristics
- Pb-Free, Halogen Free/BFR Free and RoHS Compliant

ABSOLUTE MAXIMUM RATINGS

(T_A = 25°C unless otherwise noted.)

| Symbol | Parameter | Value | Unit |
|------------------|--|-------------|------|
| V _{CEO} | Collector–Emitter Voltage | 160 | V |
| V _{CBO} | Collector–Base Voltage | 180 | V |
| V _{EBO} | Emitter–Base Voltage | 6 | V |
| I _C | Collector Current (DC) | 600 | mA |
| P _C | Collector Dissipation (T _A = 25°C) (Note 1) | 0.7 | W |
| T _J | Junction Temperature | 150 | °C |
| T _{STG} | Storage Temperature Range | –55 to +150 | °C |
| R _{θJA} | Thermal Resistance, Junction to Ambient | 180 | °C/W |

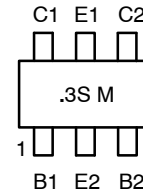
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. P_D total, for both transistors. For each transistor, P_D = 350 mW.



TSOT23 6–Lead
CASE 419AG

MARKING DIAGRAM



.3S = Specific Device Code
M = Date Code

ORDERING INFORMATION

| Device | Package | Shipping† |
|---------|-------------------------|---------------------|
| FMB5551 | TSOT23 6–Lead (Pb–Free) | 3,000 / Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

FMB5551

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

| Symbol | Parameter | Test Conditions | Min | Typ | Max | Unit |
|----------------------------|---------------------------|---|--------|--------|----------|----------|
| OFF CHARACTERISTICS | | | | | | |
| BV _{CEO} | Collector–Emitter Voltage | I _C = 1 mA | 160 | – | – | V |
| BV _{CBO} | Collector–Base Voltage | I _C = 10 μA | 180 | – | – | V |
| BV _{EBO} | Emitter–Base Voltage | I _E = 10 μA | 6 | – | – | V |
| I _{CBO} | Collector Cut–off Current | V _{CB} = 120 V V _{CB} = 120 V, T = 100°C | – – | – – | 50 50 | nA μA |
| I _{EBO} | Emitter Cut–off Current | V _{EB} = 4 V | – | – | 50 | nA |

ON CHARACTERISTICS

| | | | | | | |
|----------------------|--------------------------------------|--|----------------|-------------|---------------|---|
| h _{FE} | DC Current Gain | V _{CE} = 5 V, I _C = 1 mA V _{CE} = 5 V, I _C = 10 mA V _{CE} = 5 V, I _C = 50 mA | 80 80 30 | – – – | – 250 – | |
| V _{CE(sat)} | Collector–Emitter Saturation Voltage | I _C = 10 mA, I _B = 1 mA I _C = 50 mA, I _B = 5 mA | – – | – – | 0.15 0.2 | V |
| V _{BE(sat)} | Base–Emitter Saturation Voltage | I _C = 10 mA, I _B = 1 mA I _C = 50 mA, I _B = 5 mA | – – | – – | 1 1 | V |

SMALL SIGNAL CHARACTERISTICS

| | | | | | | |
|-----------------|--------------------------------|--|-----|---|-----|-----|
| C _{ob} | Output Capacitance | V _{CB} = 10 V, f = 1 MHz | – | – | 6 | pF |
| C _{ib} | Input Capacitance | V _{CB} = 0.5 V, f = 1 MHz | – | – | 20 | pF |
| f _T | Current gain Bandwidth Product | V _{CE} = 10 V, I _C = 10 mA, f = 100 MHz | 100 | – | 300 | MHz |
| NF | Noise Figure | V _{CE} = 5 V, I _C = 200 μA, f = 1 MHz, R _S = 2 kΩ, B = 200 Hz | – | – | 8 | dB |
| h _{FE} | Small Signal Current Gain | V _{CE} = 10 V, I _C = 1 mA, f = 1 kHz | 50 | – | 250 | |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

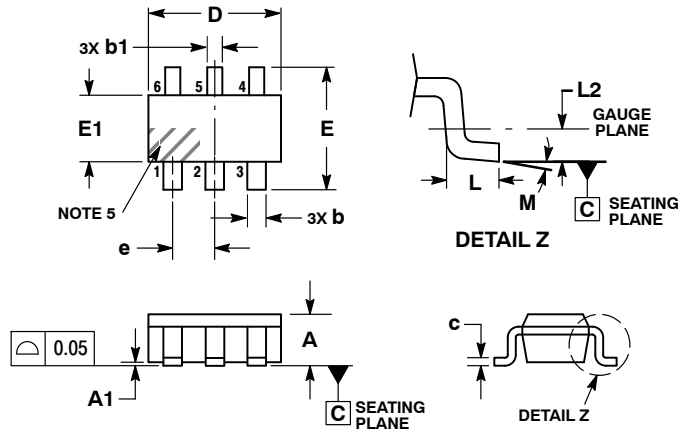
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SCALE 2:1

TSOT23 6-Lead CASE 419AG-01 ISSUE O

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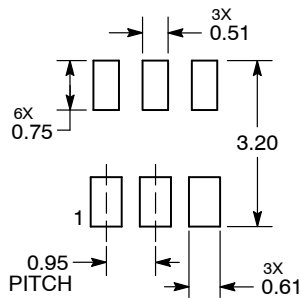


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.15 PER SIDE. DIMENSIONS D AND E1 ARE DETERMINED AT DATUM H.
5. PIN ONE INDICATOR MUST BE LOCATED IN THE INDICATED ZONE.

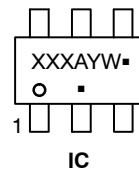
| MILLIMETERS | | | |
|-------------|----------|------|------|
| DIM | MIN | NOM | MAX |
| A | 0.75 | 0.82 | 0.90 |
| A1 | --- | --- | 0.10 |
| b | 0.40 | 0.45 | 0.50 |
| b1 | 0.30 | 0.35 | 0.40 |
| c | 0.08 | 0.14 | 0.20 |
| D | 2.80 | 2.90 | 3.00 |
| E | 2.60 | 2.80 | 3.00 |
| E1 | 1.50 | 1.60 | 1.70 |
| e | 0.95 BSC | | |
| L | 0.30 | 0.45 | 0.60 |
| L2 | 0.25 BSC | | |
| M | 0° | - | 8° |

RECOMMENDED SOLDERING FOOTPRINT*

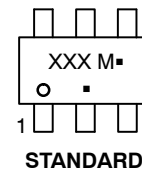


DIMENSIONS: MILLIMETERS

GENERIC MARKING DIAGRAMS*



IC



STANDARD

XXX = Specific Device Code
A = Assembly Location
Y = Year
W = Work Week
▪ = Pb-Free Package

XXX = Specific Device Code
M = Date Code
▪ = Pb-Free Package

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

| | | |
|------------------|---------------|--|
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| DESCRIPTION: | TSOT23 6-LEAD | PAGE 1 OF 1 |

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