

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

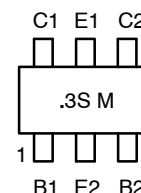
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

BV_{CEO}	Collector–Emitter Voltage	$I_C = 1\text{ mA}$	160	–	–	V
BV_{CBO}	Collector–Base Voltage	$I_C = 10\text{ }\mu\text{A}$	180	–	–	V
BV_{EBO}	Emitter–Base Voltage	$I_E = 10\text{ }\mu\text{A}$	6	–	–	V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 120\text{ V}$ $V_{CB} = 120\text{ V}, T = 100^\circ\text{C}$	– –	– –	50 50	nA μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 4\text{ V}$	–	–	50	nA

ON CHARACTERISTICS

h_{FE}	DC Current Gain	$V_{CE} = 5\text{ V}, I_C = 1\text{ mA}$ $V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$ $V_{CE} = 5\text{ V}, I_C = 50\text{ mA}$	80 80 30	– – –	– 250 –	
$V_{CE(sat)}$	Collector–Emitter Saturation Voltage	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$ $I_C = 50\text{ mA}, I_B = 5\text{ mA}$	– –	– –	0.15 0.2	V
$V_{BE(sat)}$	Base–Emitter Saturation Voltage	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$ $I_C = 50\text{ mA}, I_B = 5\text{ mA}$	– –	– –	1 1	V

SMALL SIGNAL CHARACTERISTICS

C_{ob}	Output Capacitance	$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	–	–	6	pF
C_{ib}	Input Capacitance	$V_{CB} = 0.5\text{ V}, f = 1\text{ MHz}$	–	–	20	pF
f_T	Current gain Bandwidth Product	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA},$ $f = 100\text{ MHz}$	100	–	300	MHz
NF	Noise Figure	$V_{CE} = 5\text{ V}, I_C = 200\text{ }\mu\text{A},$ $f = 1\text{ MHz}, R_S = 2\text{ k}\Omega,$ $B = 200\text{ Hz}$	–	–	8	dB
h_{FE}	Small Signal Current Gain	$V_{CE} = 10\text{ V}, I_C = 1\text{ mA}, f = 1\text{ kHz}$	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

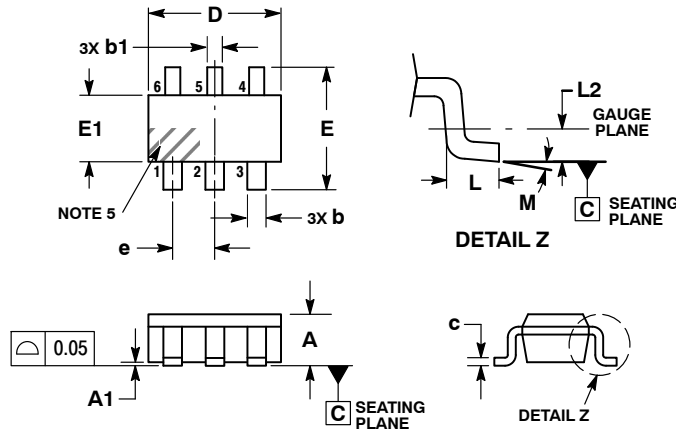
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SCALE 2:1

TSOT23 6-Lead CASE 419AG-01 ISSUE O

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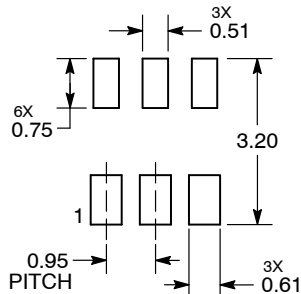


NOTES:

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°

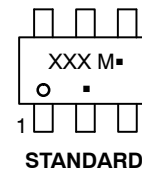
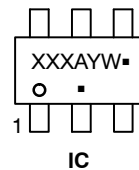
RECOMMENDED SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

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

GENERIC MARKING DIAGRAMS*



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

*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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