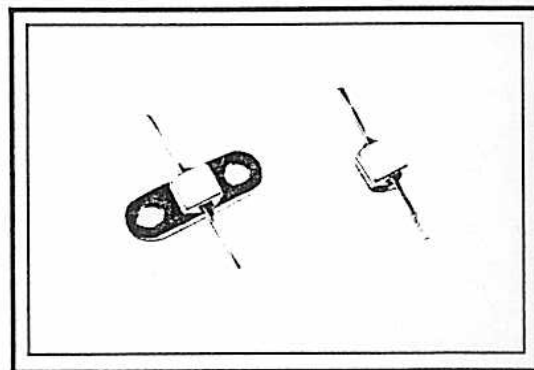


POWER GaAs FETs

POWER GaAs FETs

The MSC "88000 Series" of devices are hermetically sealed high power GaAs Field Effect Transistors employing state-of-the-art technology and fabrication techniques. The devices are designed for linear power amplifiers and for oscillator applications up to X-Band. These transistors are supplied in a low-loss, low parasitic, metal-ceramic, microminiature FLIPAC™ package. The GaAs FET chip is flip-chip mounted for minimum thermal resistance.



88537 ≈ 88002

ELECTRICAL CHARACTERISTICS (MEASURED AT 25°C) CLASS A AMPLIFIER (CW)

MODEL NUMBER	TEST FREQ. (GHZ)	NOMINAL CHARACTERISTICS					GEOMETRY	PASSIVATION	GATE METAL	PACKAGE			CASE STYLE CODE
		P ₁ db (dBm)	GAIN (dB)	V _{DS} (V)	I _{DSS} (Ma)	θ _{CC} MAX. (°C/W) ⁽⁴⁾				WIDTH (mm)	INT. MATCH	TYPE	
MSC 88001	6.0	24.3	8.3	9.0	150	35.0	F	—	G	3.5	—	H	097
MSC 88051	6.0	24.3	8.3	9.0	150	35.0	F	—	G	3.5	—	P	098
MSC 88002	6.0	27.4	7.9	9.0	300	25.0	F	—	G	3.5	—	H	097
MSC 88052	6.0	27.4	7.9	9.0	300	25.0	F	—	G	3.5	—	P	098
MSC 88004	6.0	30.3	7.3	9.0	700	17.5	F	—	G	3.5	—	H	097
MSC 88054	6.0	30.3	7.3	9.0	700	17.5	F	—	G	3.5	—	P	098
MSC 88012	6.0	35.4	6.4	9.0	2000	8.0	F	—	G	3.0	—	H	103

NOTES: (1) * In development

(2) **Contact factory for other package widths

(3) C/F - Contact factory

(4) Measure by IR Scanning of Hot Spot

channel temperature at rated RF operating conditions

Geometry

F—Flip Chip

VI—Via hole

upright mount

Internal Matching

—None

I—Input

O—Output

Package Type

H—Hermetic

P—Hermetic Pill

MH—Matched Hermetic

C—Open Carrier

MC—Matched Open Carrier

Gate Metal

G—Gold with metal barrier

A—Aluminum

Passivation

—None

N—Silicon Nitride

ADDED RELIABILITY SCREENING LEVELS FOR MSC 88000 SERIES

TEST OR INSPECTION ⁽¹⁾	LEVEL				
	S	H	R	V	C ⁽²⁾
Wafer SEM Analysis	Sample	—	—	—	—
Pellet and Wire Bond Visual	100%	100%	100%	100%	100%
Initial DC and RF Test	100%	100%	100%	100%	100%
Thermal Resistance	100%	100%	100%	100%	100%
Pre-Cap Visual	100%	100%	100%	100%	100%
Visual Audit (Customer or QA)	Sample	Sample	—	Sample	—
Cap Seal	100%	100%	100%	100%	100%
High Temperature Storage T _A = 200°C	100%	100%	(3)	—	—
Temperature Cycling T _A = -65°C to 200°C	100%	100%	(3)	—	—
Constant Acceleration Y1 Axis, 20,000 G's	100%	100%	(3)	—	—
PIND	100%	100%	(3)	—	—
Hermeticity (Fine & Gross)	100%	100%	100%	100%	100%
Interim Electrical (DC Only)	100%	100%	(3)	—	—
Burn In T _{CH} = 140°C nominal	100%	100%	100%	—	—
Final Electrical (DC Only)	100%	100%	100%	100%	100%
Final Electrical (RF)	100%	100%	100%	—	—

NOTES: (1) Specific test conditions, methods or durations determined by customer requirements-contact factory.

(2) Same as Generic 88000 Series except electrical tests determined by customer requirements.

(3) Optional