

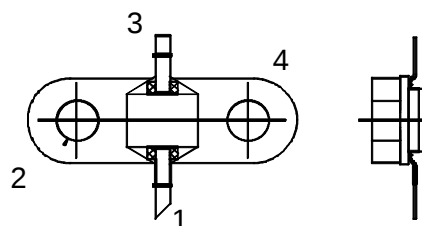
## C Band Power FET

### GaAs Field Effect Transistor

#### Description

The TC6519 is a C band Schottky barrier Field Effect Transistor with 0.7 $\mu$ m Aluminium gate, source via holes and gold plated heatsink for a minimum source parasitic inductance and a better thermal dissipation leading to high gain and high power added efficiency.

It is available in chip form and in BMH77P hermetic ceramic-metal package



- 1 - Gate
- 2 - Source
- 3 - Drain
- 4 - Source

#### Main Features

- 30dBm output power at 1dB gain compression
- High associated gain: 9dB@ 8GHz
- High power added efficiency : 30%@ 8GHz
- Low source inductance
- High reliability
- Chip size : 1.02 x 0.45 x 0.1 mm

#### Main Characteristics

Tamb = 25°C

| Symbol | Parameter                            | Min  | Typ | Max | Unit |
|--------|--------------------------------------|------|-----|-----|------|
| Idss   | Saturated drain current              | 400  | 600 | 800 | mA   |
| P1dB   | Output power at 1dB gain compression | 28.5 | 30  |     | dBm  |
| Ga     | Associated gain                      | 7.5  | 9   |     | dB   |

ESD protections: Electrostatic discharge sensitive device observe handling precautions!

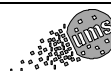
Ref. : DSTC65197003

Specifications subject to change without notice

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**Electrical Characteristics**

Tamb = +25°C

| Symbol | Parameter                            | Test Conditions           | both cell |     |      | Unit |
|--------|--------------------------------------|---------------------------|-----------|-----|------|------|
|        |                                      |                           | Min       | Typ | Max  |      |
| Idss   | Saturated drain current              | Vds= 1.5V<br>Vgs=0V       | 400       | 600 | 800  | mA   |
| Vp     | Pinch off voltage                    | Vds= 1.5V<br>Ids=Idss/100 | -5        | -4  | -3   | V    |
| Gm     | Transconductance                     | Vds= 1.5V<br>Ids=Idss/2   | 150       | 210 |      | mS   |
| Igsd   | Gate to source/drain leakage current | Vgsd= -8V                 |           |     | 2000 | μA   |
| Rth    | Channel-case thermal resistance      |                           |           | 40  |      | °C/W |

**Dynamic characteristics**

Tamb = 25°C

| Symbol | Parameter                               | Test Conditions |      |     | Unit |
|--------|-----------------------------------------|-----------------|------|-----|------|
|        |                                         |                 | Min  | Typ |      |
| P1db   | Output power at 1dB gain compression    | Vds= 10V        | 28.5 | 30  | dBm  |
| Ga     | Associated gain at 1dB gain compression | F= 8GHz         | 7.5  | 9   | dB   |
| ηadd   | Power added efficiency                  | Ids= 250mA      | 25   | 30  | %    |

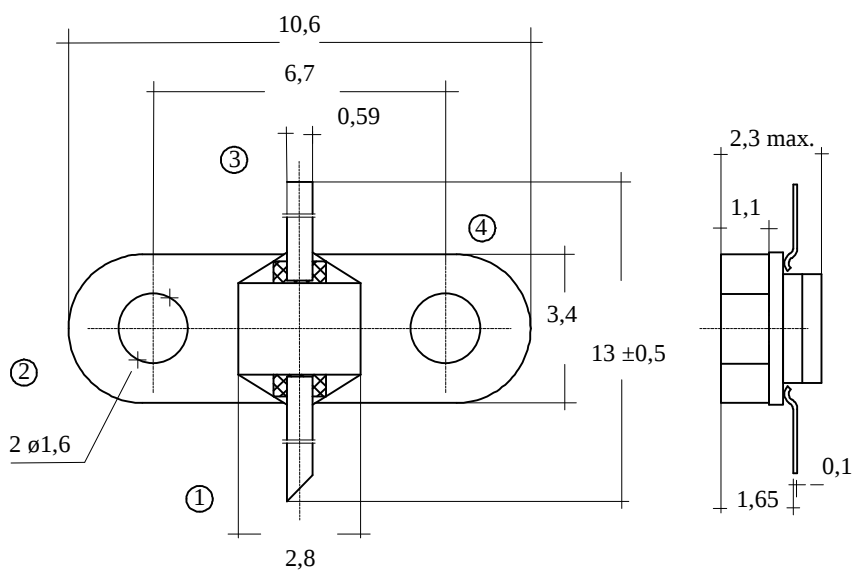
**Absolute Maximum Ratings (1)**

Tamb = 25°C

| Symbol | Parameter                     | Values      | Unit |
|--------|-------------------------------|-------------|------|
| Vds    | Drain to source voltage       | 12          | V    |
| Ids    | Drain current                 | 800         | mA   |
| Vgs    | Gate to source voltage        | -8          | dBm  |
| Tch    | Operating channel temperature | 175         | °C   |
| Tstg   | Storage temperature range     | -65 to +175 | °C   |

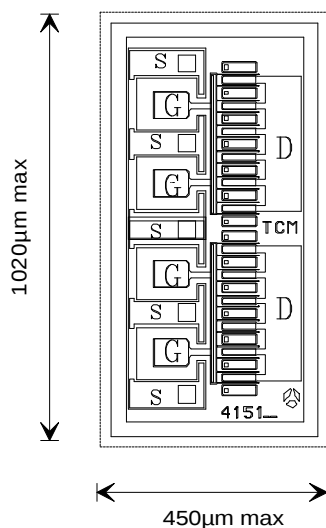
(1) Operation of this device above any one of these parameters may cause permanent damage

## BMH77P Package



Tolerance : 0.2  
Dimensions in mm

## EC6519 Mechanical data



D: Drain  
G: Gate  
S: Source

Thickness: 100 $\pm$ 10 $\mu$ m

## Ordering Information

Chip form : EC6519-99X/00  
Package : TC6519-A2X/00

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