

TOSHIBA

查询T1M5964-45SL供应商

捷多邦, 专业PCB打样工厂, 24小时加急出货

**MICROWAVE SEMICONDUCTOR
TECHNICAL DATA**

MICROWAVE POWER GaAs FET

T1M5964-45SL**FEATURES :**

- **LOW INTERMODULATION DISTORTION**
IM₃ = -45 dBc at P_o = 35.5 dBm,
Single Carrier Level
- **HIGH POWER**
P_{1dB} = 46.5 dBm at 5.9 GHz to 6.4 GHz
- **HIGH GAIN**
G_{1dB} = 9.0 dB at 5.9 GHz to 6.4 GHz
- **BROAD BAND INTERNALLY MATCHED**
- **HERMETICALLY SEALED PACKAGE**

RF PERFORMANCE SPECIFICATIONS (Ta = 25°C)

| CHARACTERISTICS | SYMBOL | CONDITION | UNIT | MIN. | TYP. | MAX. |
|--|------------------|---|------|------|------|------|
| Output Power at 1 dB Compression Point | P _{1dB} | V _{DS} = 10 V f = 5.9~6.4 GHz | dBm | 46.0 | 46.5 | — |
| Power Gain at 1 dB Compression Point | G _{1dB} | | dB | 8.0 | 9.0 | — |
| Drain Current | I _{DS} | | A | — | 9.6 | 10.8 |
| Gain Flatness | ΔG | | dB | — | — | ±0.8 |
| Power Added Efficiency | η _{add} | | % | — | 41 | — |
| 3rd Order Intermodulation Distortion | IM ₃ | Note 1 | dBc | -42 | -45 | — |
| Channel-Temperature Rise | ΔT _{ch} | V _{DS} × I _{DS} × R _{th} (c-c) | °C | — | — | 100 |

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTICS | SYMBOL | CONDITION | UNIT | MIN. | TYP. | MAX. |
|-------------------------------|-----------------------|---|------|------|------|------|
| Transconductance | gm | V _{DS} = 3 V I _{DS} = 11.0 A | mS | — | 8000 | — |
| Pinch-off Voltage | V _{GSoff} | V _{DS} = 3 V I _{DS} = 170 mA | V | -1.0 | -2.5 | -4.0 |
| Saturated Drain Current | I _{DSS} | V _{DS} = 3 V V _{GS} = 0 V | A | — | 24 | 31 |
| Gate-Source Breakdown Voltage | V _{GSO} | I _{GS} = -500 μA | V | -5 | — | — |
| Thermal Resistance | R _{th} (c-c) | Channel to Case | °C/W | — | 0.8 | 1.2 |

Note 1 : 2 tone Test Pout = 35.5 dBm Single Carrier Level.

Recommended gate resistace (Rg) : Rg=Rg1 (10 Ω) +Rg2 (18 Ω)=28 Ω (MAX.)

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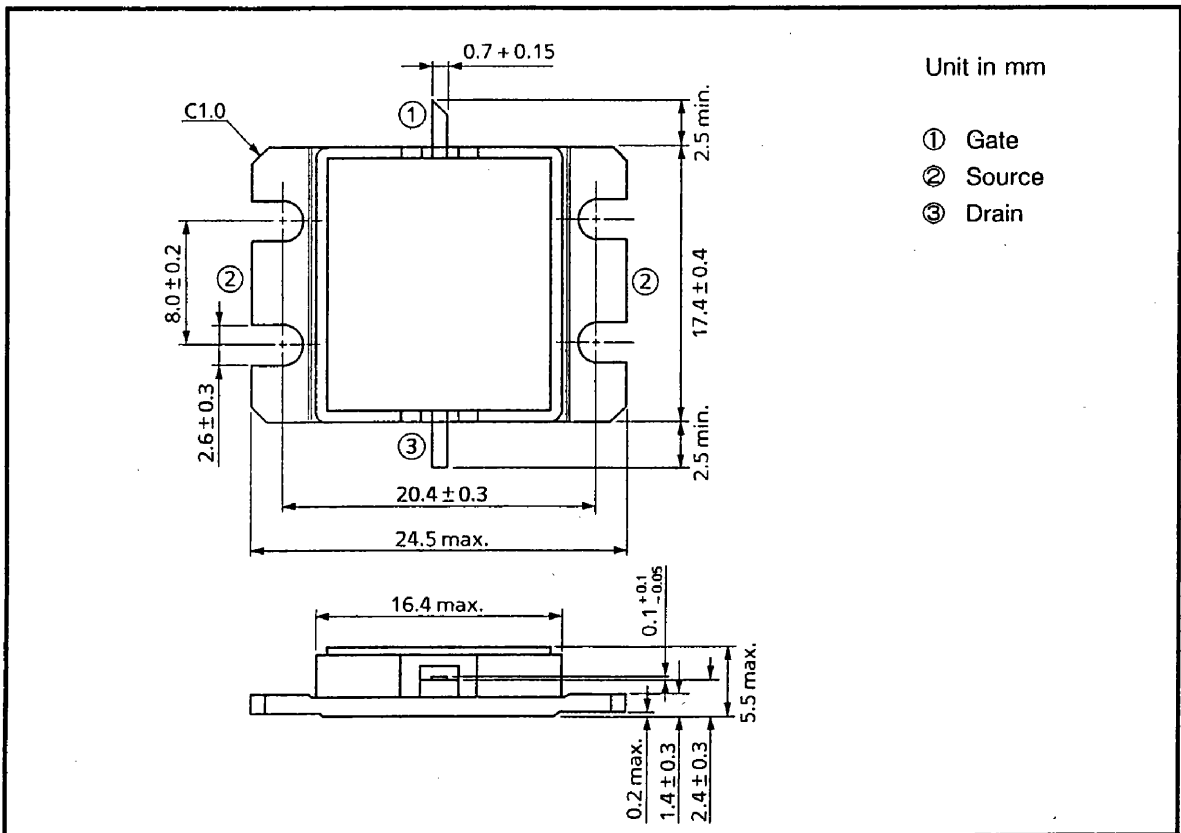


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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTICS | SYMBOL | UNIT | RATING |
|---|------------------|------|-----------|
| Drain-Source Voltage | V _{DS} | V | 15 |
| Gate-Source Voltage | V _{GS} | V | -5 |
| Drain Current | I _{DS} | A | 31 |
| Total Power Dissipation (T _C = 25°C) | P _T | W | 125 |
| Channel Temperature | T _{ch} | °C | 175 |
| Storage Temperature | T _{stg} | °C | -65 ~ 175 |

PACKAGE OUTLINE (2-16G1B)

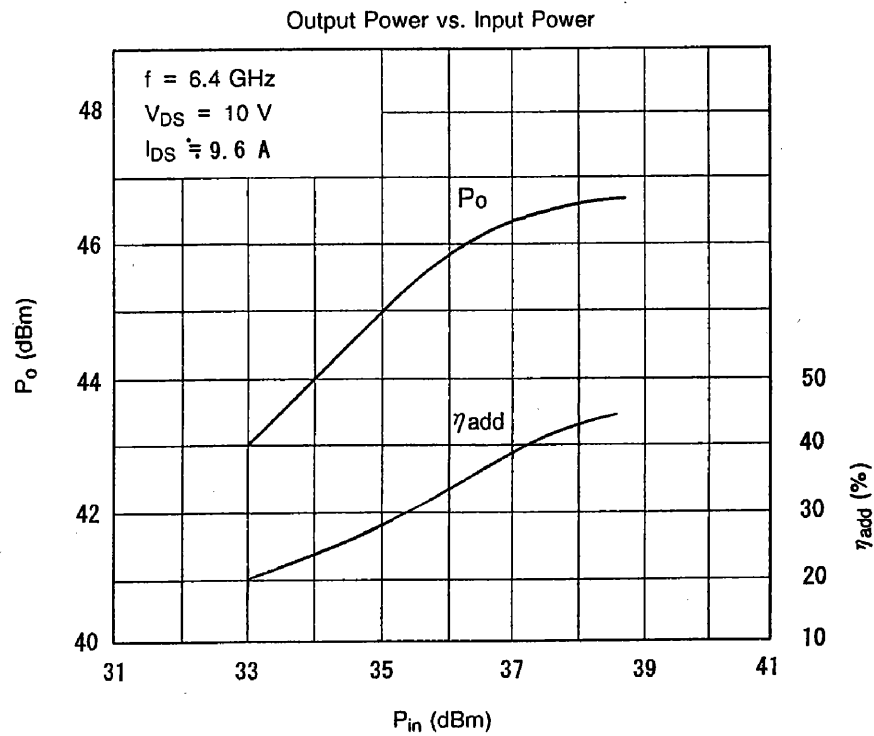
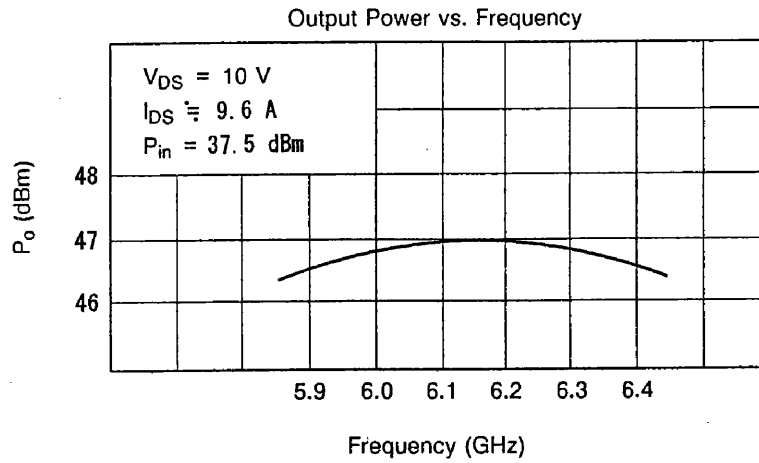


HANDLING PRECAUTIONS FOR PACKAGED TYPE

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

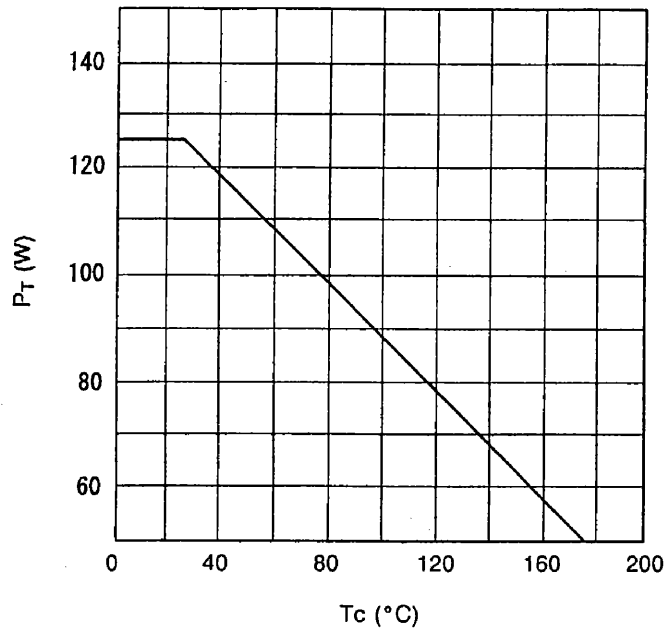
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RF PERFORMANCES

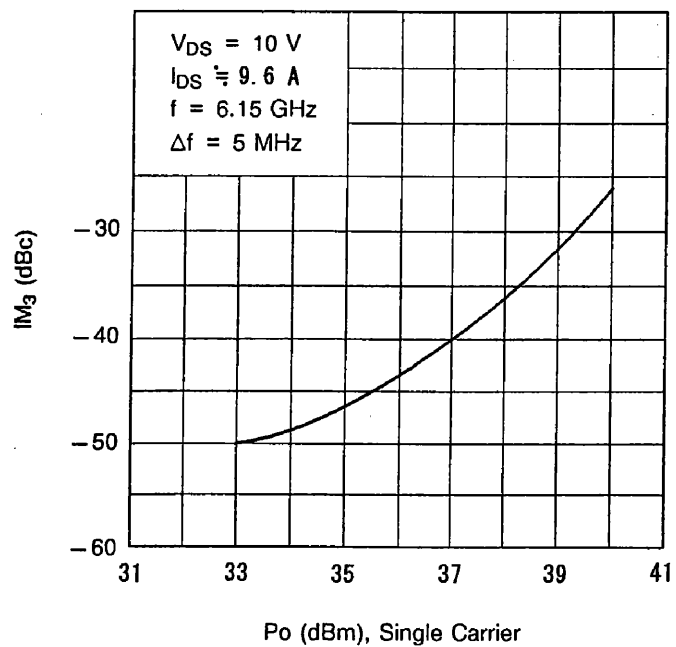


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POWER DISSIPATION VS. CASE TEMPERATURE



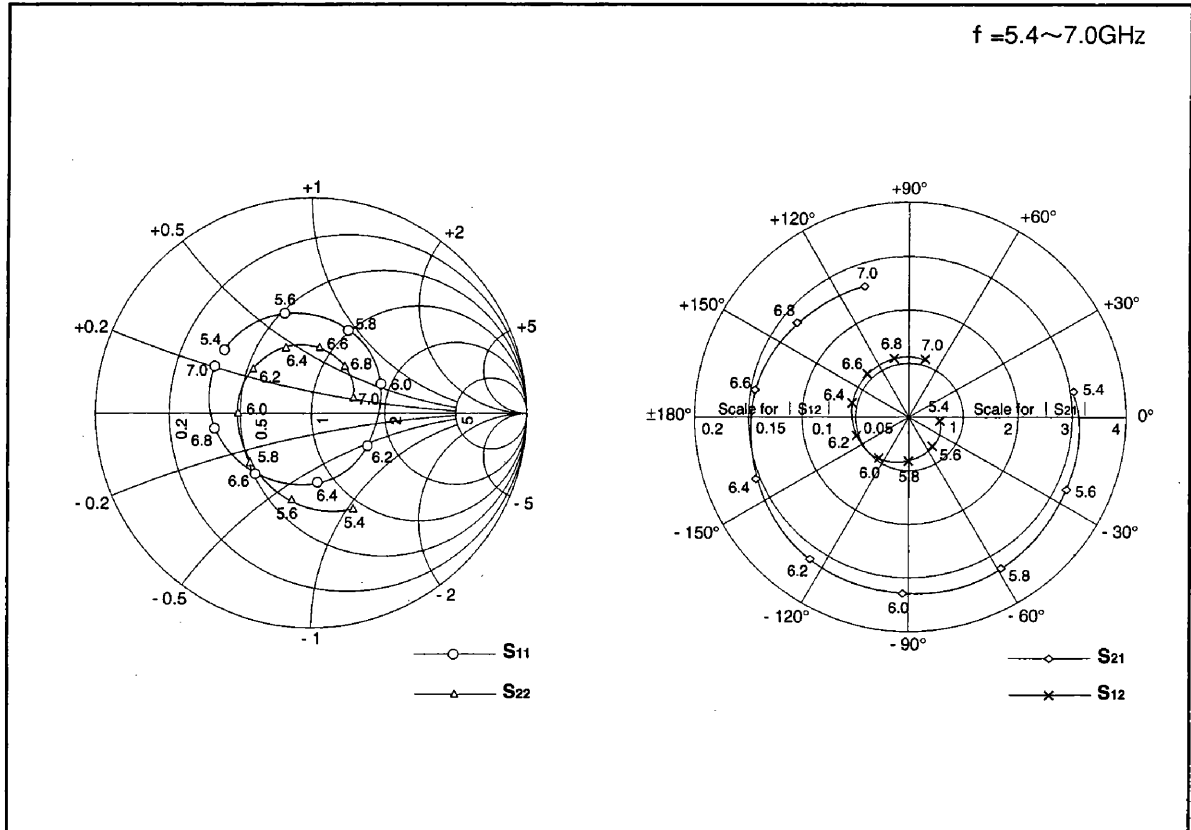
IM₃ VS. OUTPUT POWER CHARACTERISTICS



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TIM5964-45SL S-PARAMETERS (MAGN.and ANGLES)

$V_{DS} = 10V, I_{DS} = 9.6A$



| FREQUENCY (GHz) | S ₁₁ | | S ₂₁ | | S ₁₂ | | S ₂₂ | |
|--------------------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|
| | MAG | ANG | MAG | ANG | MAG | ANG | MAG | ANG |
| 5.4 | 0.50 | 144 | 3.06 | 9 | 0.029 | -7 | 0.48 | -66 |
| 5.6 | 0.48 | 105 | 3.20 | -25 | 0.035 | -51 | 0.41 | -103 |
| 5.8 | 0.42 | 66 | 3.28 | -59 | 0.041 | -90 | 0.36 | -142 |
| 6.0 | 0.35 | 23 | 3.29 | -92 | 0.047 | -126 | 0.34 | 179 |
| 6.2 | 0.30 | -30 | 3.22 | -125 | 0.052 | -161 | 0.34 | 142 |
| 6.4 | 0.32 | -85 | 3.08 | -158 | 0.055 | 166 | 0.33 | 111 |
| 6.6 | 0.38 | -133 | 2.91 | 170 | 0.056 | 134 | 0.31 | 83 |
| 6.8 | 0.45 | -171 | 2.74 | 140 | 0.056 | 104 | 0.27 | 55 |
| 7.0 | 0.50 | 154 | 2.58 | 109 | 0.056 | 74 | 0.21 | 22 |