PRELIMINARY

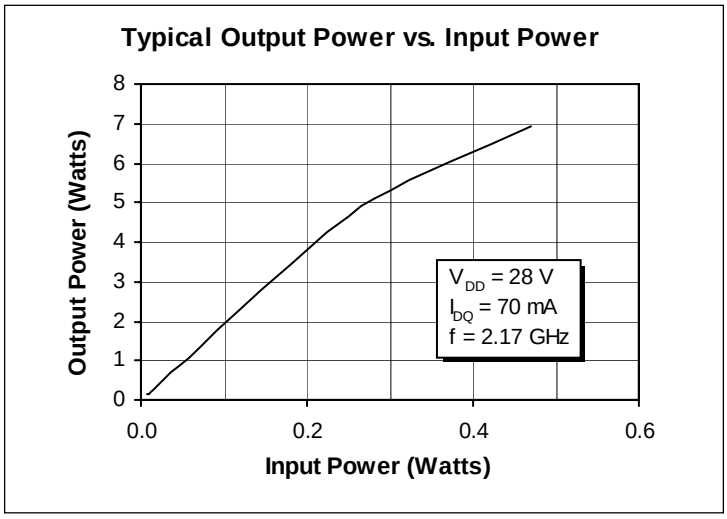
PTF 10123*

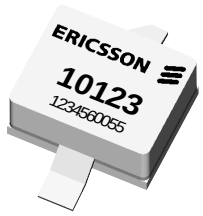
GOLDMOS® Field Effect Transistor
5 Watts, 2.1–2.2 GHz

Description

The 10123 is a *GOLDMOS* FET intended for large signal applications from 2.1 to 2.2 GHz. It operates with 47% efficiency and 11 db minimum gain. Nitride surface passivation and gold metallization ensure excellent device lifetime and reliability.

- **Guaranteed Performance at 2.17 GHz, 28 V**
  - **Output Power = 5 Watts Min**
  - **Power Gain = 11 dB Min**
- **Full Gold Metallization**
- **Silicon Nitride Passivated**
- **Back Side Common Source**
- **Excellent Thermal Stability**
- **100% Lot Traceability**





Package 20244

RF Specifications (100% Tested)

Characteristic	Symbol	Min	Typ	Max	Units
Gain (V_{DD} = 28 V, P_{OUT} = 1 W, I_{DQ} = 70 mA, f = 2.11, 2.17 GHz)	G_{ps}	11	—	—	dB
Power Output at 1 dB Compression (V_{DD} = 28 V, I_{DQ} = 70 mA, f = 2.17 GHz)	P-1dB	5	6.5	—	Watts
Drain Efficiency (V_{DD} = 28 V, P_{OUT} = 5 W, I_{DQ} = 70 mA, f = 2.17 GHz)	η_D	40	47	—	%
Load Mismatch Tolerance (V_{DD} = 28 V, P_{OUT} = 5 W, I_{DQ} = 70 mA, f = 2.17 GHz —all phase angles at frequency of test)	Ψ	—	—	10:1	—

All published data at T_{CASE} = 25°C unless otherwise indicated.

* Note: Specifications for this product are preliminary and subject to change without notice. Please contact your sales representative for further product information. Complete product infromation is available on our Website at: www.ericsson.com/rfpower.

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Electrical Characteristics (100% Tested)

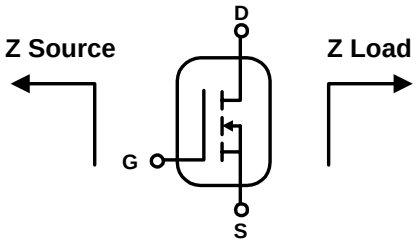
Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_D = 20 mA	$V_{(BR)DSS}$	65	—	—	Volts
Zero Gate Voltage Drain Current	V_{DS} = 26 V, V_{GS} = 0 V	I_{DSS}	—	—	1.0	µA
Gate Threshold Voltage	V_{DS} = 10 V, I_D = 75 mA	$V_{GS(th)}$	3.0	—	5.0	Volts
Forward Transconductance	V_{DS} = 10 V, I_D = 2 A	g_{fs}	—	0.8	—	Siemens

Maximum Ratings

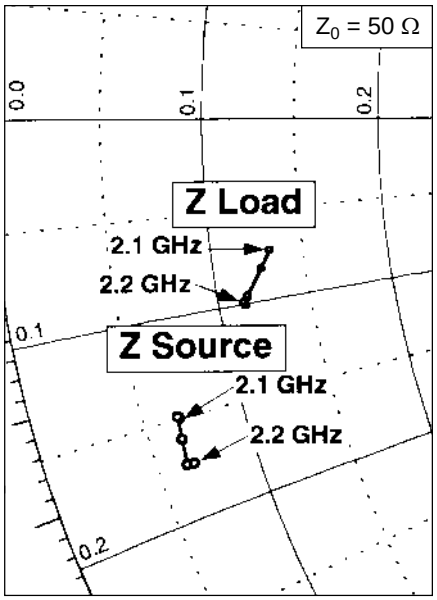
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	65	Vdc
Gate-Source Voltage	V_{GS}	±20	Vdc
Operating Junction Temperature	T_J	200	°C
Total Device Dissipation Above 25°C derate by	P_D	39 0.22	Watts W/°C
Storage Temperature Range	T_{STG}	–40 to +150	°C
Thermal Resistance (T_{flange} = 70°C)	$R_{\theta JC}$	4.8	°C/W

Impedance Data

V_{DD} = 28 V, P_{OUT} = 5 W, I_{DQ} = 70 mA

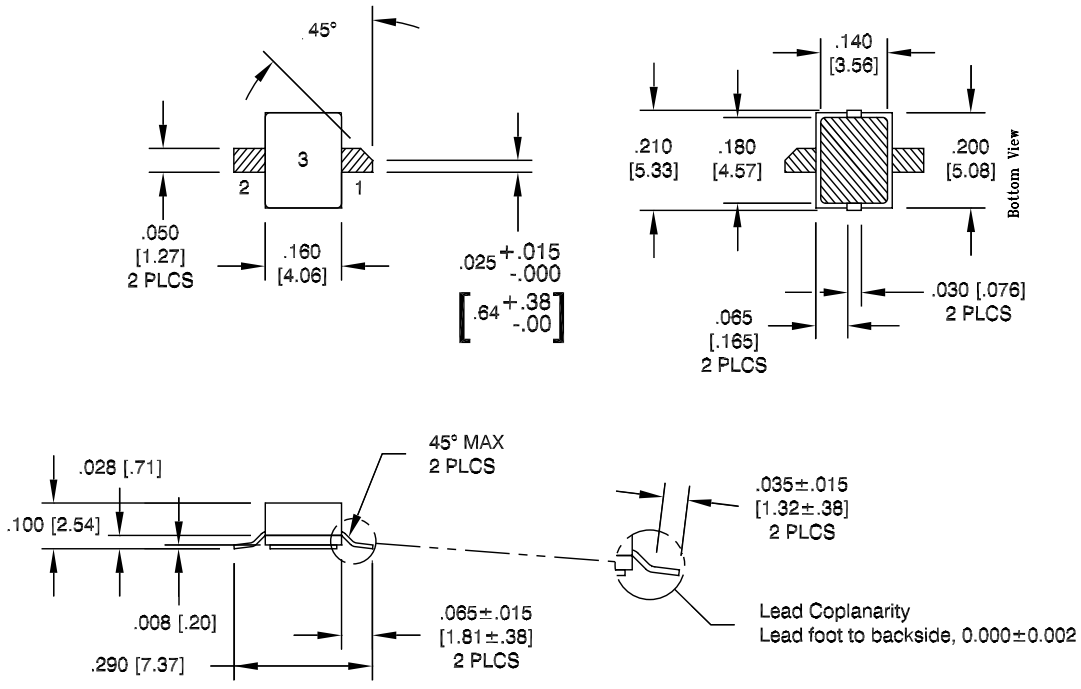


Frequency	Z Source Ω		Z Load Ω	
GHz	R	jX	R	jX
2.10	3.40	-7.48	6.60	-3.66
2.12	3.35	-7.44	6.30	-4.12
2.15	3.30	-8.00	5.82	-4.81
2.17	3.23	-8.64	5.72	-5.04
2.20	3.40	-8.67	5.69	-4.96



Case Outline Specifications

Case 20244



Unless otherwise specified
all tolerances ±.005" [0.13mm]

Pins: 1. Drain 2. Gate 3. Source
Lead Thickness: .008±.001" [0.20±0.03mm]

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