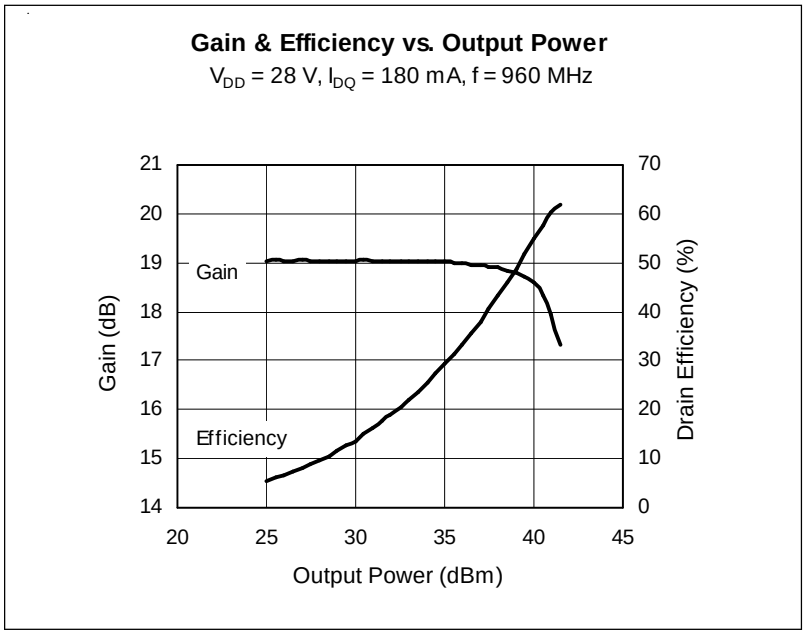
High Power RF LDMOS Field Effect Transistor
10 W, PCS Band, 860 – 960 MHz

Description

The PTF080101M is a 10-watt *GOLDMOS* FET device intended for EDGE applications in the 860 to 960 MHz band. This LDMOS device operates at 50% efficiency (P–1dB).

PTF080101M*
Package TSSOP-10



Features

- Typical EDGE performance
  - Average output power = 5.0 W
  - Gain = 19 dB
  - Efficiency = 37%
  - EVM = 2.0 %
- Typical CW performance
  - Output Power at P–1dB = 12.5 W
  - Gain = 18 dB
  - Efficiency = 50%
- Integrated ESD protection:
  Human Body Model Class 1 (minimum)
- Excellent thermal stability
- Low HCI drift
- Capable of handling 10:1 VSWR @ 28 V, 10 W (CW) output power

RF Characteristics

Two-Tone Measurements (tested in Infineon test fixture)
V_{DD} = 28 V, I_{DQ} = 180 mA, P_{OUT} = 10 W PEP, f = 960 MHz, tone spacing = 1 MHz

Characteristic	Symbol	Min	Typ	Max	Units
Gain	G_{ps}	—	19	—	dB
Drain Efficiency	η_D	—	37	—	%
Intermodulation Distortion	IMD	—	–30	—	dBc

**See Infineon distributor for future availability.*

ESD: Electrostatic discharge sensitive device—observe handling precautions!

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

DC Characteristics

Characteristic	Conditions	Symbol	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_{DS} = 10 µA	$V_{(BR)DSS}$	65	—	—	V
Drain Leakage Current	V_{DS} = 28 V, V_{GS} = 0 V	I_{DSS}	—	—	1.0	µA
On-State Resistance	V_{GS} = 10 V, V_{DS} = 0.1 A	$R_{DS(on)}$	—	0.83	—	Ω
Operating Gate Voltage	V_{DS} = 28 V, I_{DQ} = 180 mA	V_{GS}	2.5	3.2	4.0	V
Gate Leakage Current	V_{GS} = 10 V, V_{DS} = 0 V	I_{GSS}	—	—	1.0	µA

Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	65	V
Gate-Source Voltage	V_{GS}	–0.5 to +12	V
Junction Temperature	T_J	200	°C
Total Device Dissipation	P_D	38	W
Above 25°C derate by		0.22	W/°C
Storage Temperature Range	T_{STG}	–40 to +150	°C
Thermal Resistance (T_{CASE} = 70°C, 10 W DC)	$R_{\theta JC}$	4.6	°C/W

Ordering Information

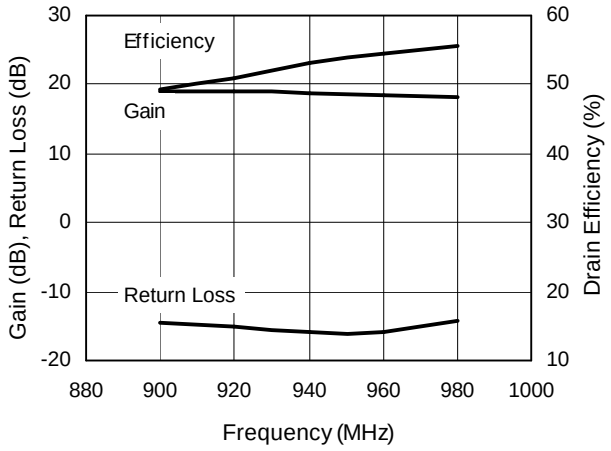
Type	Package Outline	Package Description	Marking
PTF080101M*	TSSOP-10	Molded plastic, SMD	PTF080101M

**See Infineon distributor for future availability.*

Typical Performance (data taken in production test fixture)

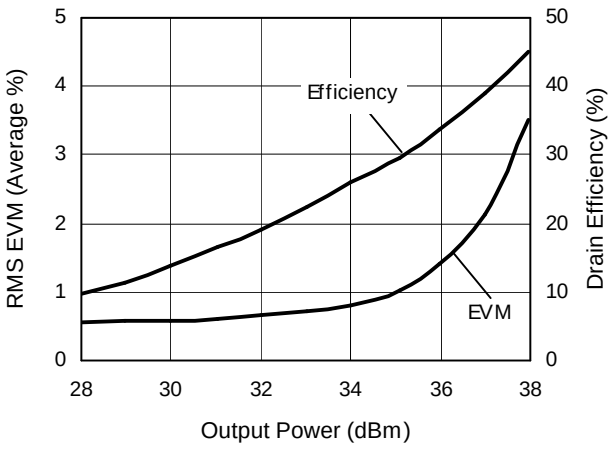
Broadband Performance

V_{DD} = 28 V, I_{DQ} = 180 mA, P_{OUT} = 40 dBm



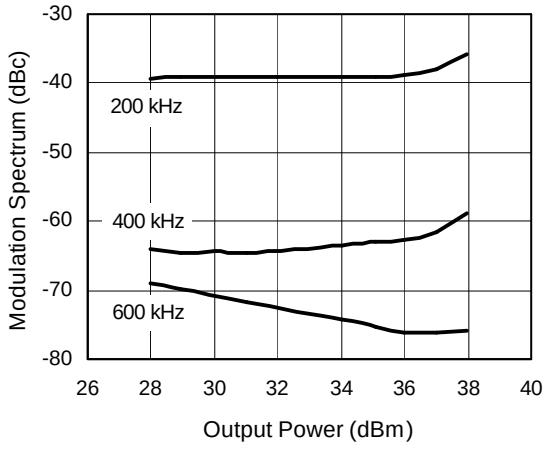
Typical EDGE Performance

V_{DD} = 28 V, I_{DQ} = 180 mA, f = 959.8 MHz



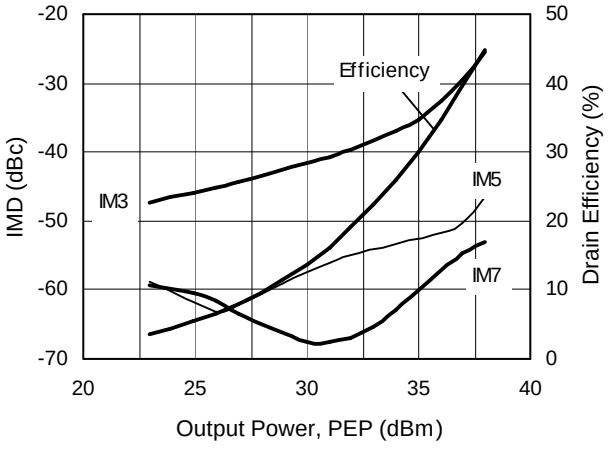
EDGE Modulation Spectrum Performance

V_{DD} = 28 V, I_{DQ} = 180 mA, f = 959.8 MHz



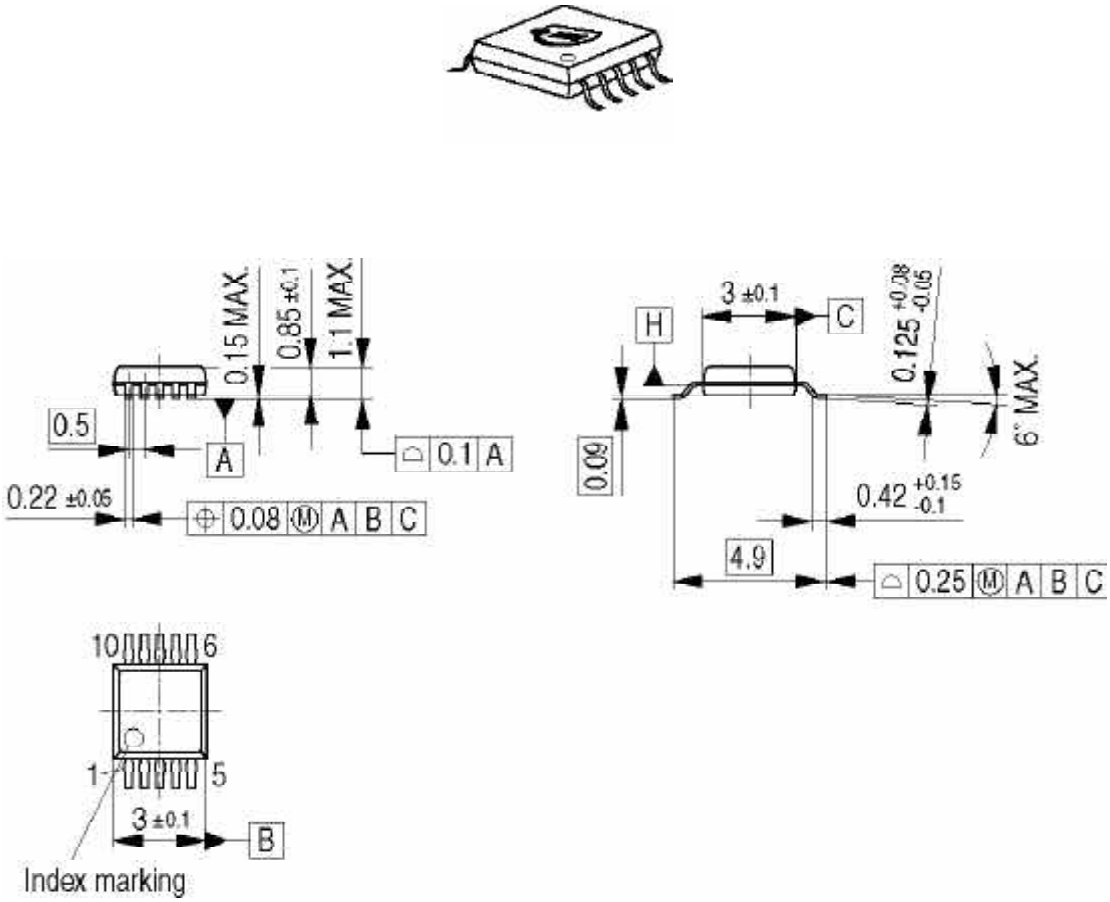
Two-tone Drive-up

V_{DD} = 28 V, I_{DQ} = 180 mA,
f = 960 MHz, 1 MHz tone spacing



Package Outline Specifications

Package TSSOP-10



Notes: Unless otherwise specified

1. Dimensions are mm
2. Lead thickness: 0.09
3. Pins: 1 – 5 = gate, underside = source, 6 – 10 = drain

Find the latest and most complete information about products and packaging at the Infineon Internet page ***http://www.infineon.com/products***

Revision History:	2005-01-21	Preliminary Data Sheet
Previous version:	none	

Page	Subjects (major changes since last revision)

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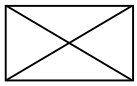

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