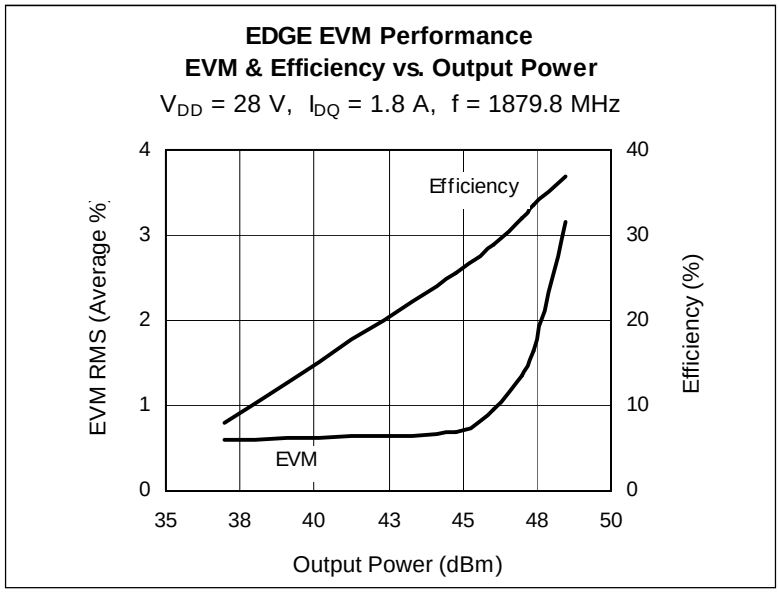
LDMOS RF Power Field Effect Transistor
130 W, 1805–1880 MHz

Description

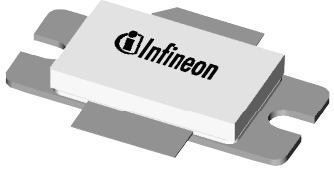
The PTF181301 is a 130 W, internally matched *GOLDMOS* FET intended for GSM and EDGE applications in the 1805 to 1880 MHz band. Full gold metallization ensures excellent device lifetime and reliability.



Features

- Broadband internal matching
- Typical EDGE performance
  - Average output power = 55 W
  - Gain = 15.5 dB
  - Efficiency = 32%
  - EVM = 1.7%
- Typical CW performance
  - Output power at P–1dB = 150 W
  - Gain = 14.5 dB
  - Efficiency = 47%
- Integrated ESD protection: Human Body Model, Class 1 (minimum)
- Excellent thermal stability
- Low HCI drift
- Capable of handling 10:1 VSWR @ 28 V, 130 W (CW) output power

PTF181301A
Package 20260



ESD: Electrostatic discharge sensitive device—observe handling precautions!

RF Characteristics at T_{CASE} = 25°C unless otherwise indicated

EDGE Measurements (not subject to production test—verified by design/characterization in Infineon test fixture)

V_{DD} = 28 V, I_{DQ} = 1.8 A, P_{OUT} = 55 W, f = 1879.8 MHz

Characteristic	Symbol	Min	Typ	Max	Unit
Error Vector Magnitude	EVM (RMS)	—	1.7	—	%
Modulation Spectrum @ 400 kHz	ACPR	—	–60	—	dBc
Modulation Spectrum @ 600 kHz	ACPR	—	–73	—	dBc
Gain	G_{ps}	—	15.5	—	dB
Drain Efficiency	η_D	—	32	—	%

Two–Tone Measurements (tested in Infineon test fixture)

V_{DD} = 28 V, I_{DQ} = 1.8 A, P_{OUT} = 130 W PEP, f = 1880 MHz, tone spacing = 1 MHz

Characteristic	Symbol	Min	Typ	Max	Unit
Gain	G_{ps}	—	15.5	—	dB
Drain Efficiency at –30 dBc IM3	η_D	—	35	—	%
Intermodulation Distortion	IMD	—	–30	—	dBc

DC Characteristics at T_{CASE} = 25°C unless otherwise indicated

Characteristic	Conditions	Symbol	Min	Typ	Max	Unit
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 V	$R_{DS(on)}$	—	0.07	—	Ω
Operating Gate Voltage	V_{DS} = 28 V, I_{DQ} = 1.8 A	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

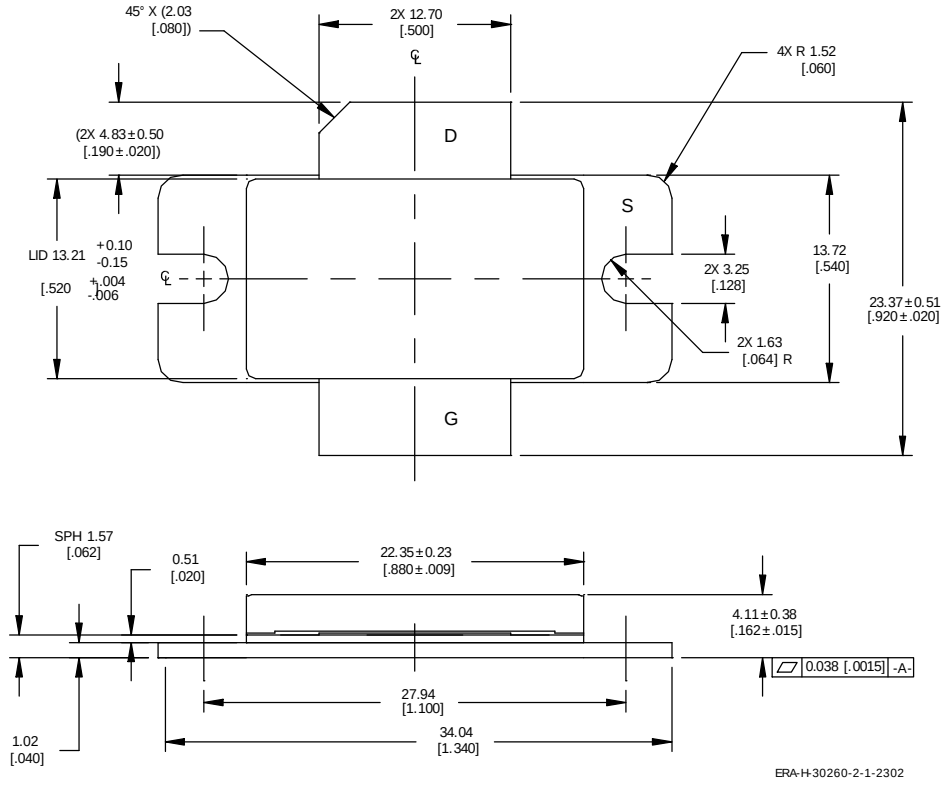
Parameter	Symbol	Value	Unit
Drain–Source Voltage	V_{DSS}	65	V
Gate–Source Voltage	V_{GS}	–0.5 to +12	V
Junction Temperature	T_J	200	°C
Total Device Dissipation	P_D	350	W
Above 25°C derate by		2.0	W/°C
Storage Temperature Range	T_{STG}	–40 to +150	°C
Thermal Resistance (T_{CASE} = 70°C, 130 W CW)	$R_{\theta JC}$	0.50	°C/W

Ordering Information

Type	Package Outline	Package Description	Marking
PTF181301A	20260	Thermally enhanced, flange mount	PTF181301A

Package Outline Specifications

Package 20260



Notes: Unless otherwise specified

1. Interpret dimensions and tolerances per ASME Y14.5M-1994.
2. Primary dimensions are mm. Alternate dimensions are inches.
3. Pins: D = drain, S = source, G = gate
4. Lead thickness: 0.10 +0.051/–0.025 [.004 +.002/–.001]

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

PTF181301

Revision History:	04-04-28	Developmental Data Sheet
Previous Version:	none	

Page	Subjects (major changes since last revision)

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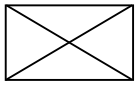

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