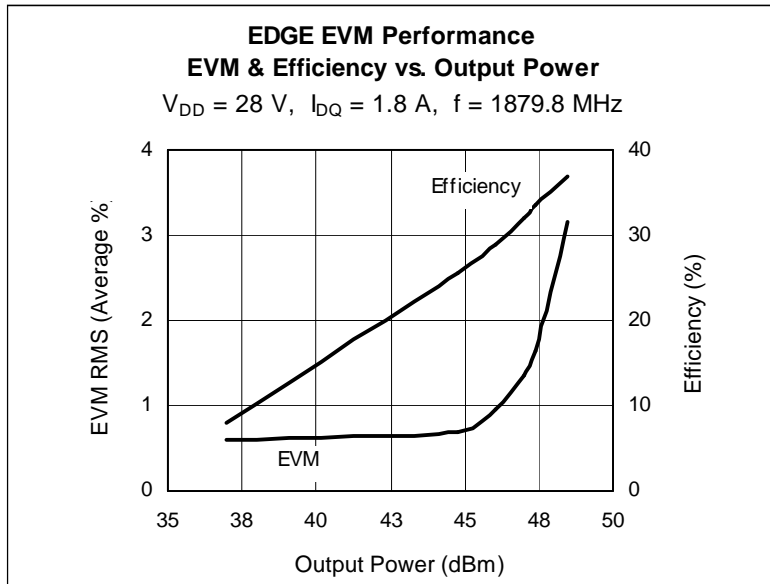


LDMOS RF Power Field Effect Transistor 130 W, 1805–1880 MHz

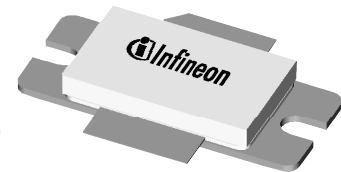
Description

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 $T_{CASE} = 25^{\circ}C$ 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 $T_{CASE} = 25^{\circ}C$ unless otherwise indicated

Characteristic	Conditions	Symbol	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_{DS} = 10\ \mu\text{A}$	$V_{(BR)DSS}$	65	—	—	V
Drain Leakage Current	$V_{DS} = 28\text{ V}, V_{GS} = 0\text{ V}$	I_{DSS}	—	—	1.0	μA
On–State Resistance	$V_{GS} = 10\text{ V}, V_{DS} = 0.1\text{ V}$	$R_{DS(on)}$	—	0.07	—	Ω
Operating Gate Voltage	$V_{DS} = 28\text{ V}, I_{DQ} = 1.8\text{ A}$	V_{GS}	2.5	3.2	4.0	V
Gate Leakage Current	$V_{GS} = 10\text{ V}, V_{DS} = 0\text{ V}$	I_{GSS}	—	—	1.0	μA

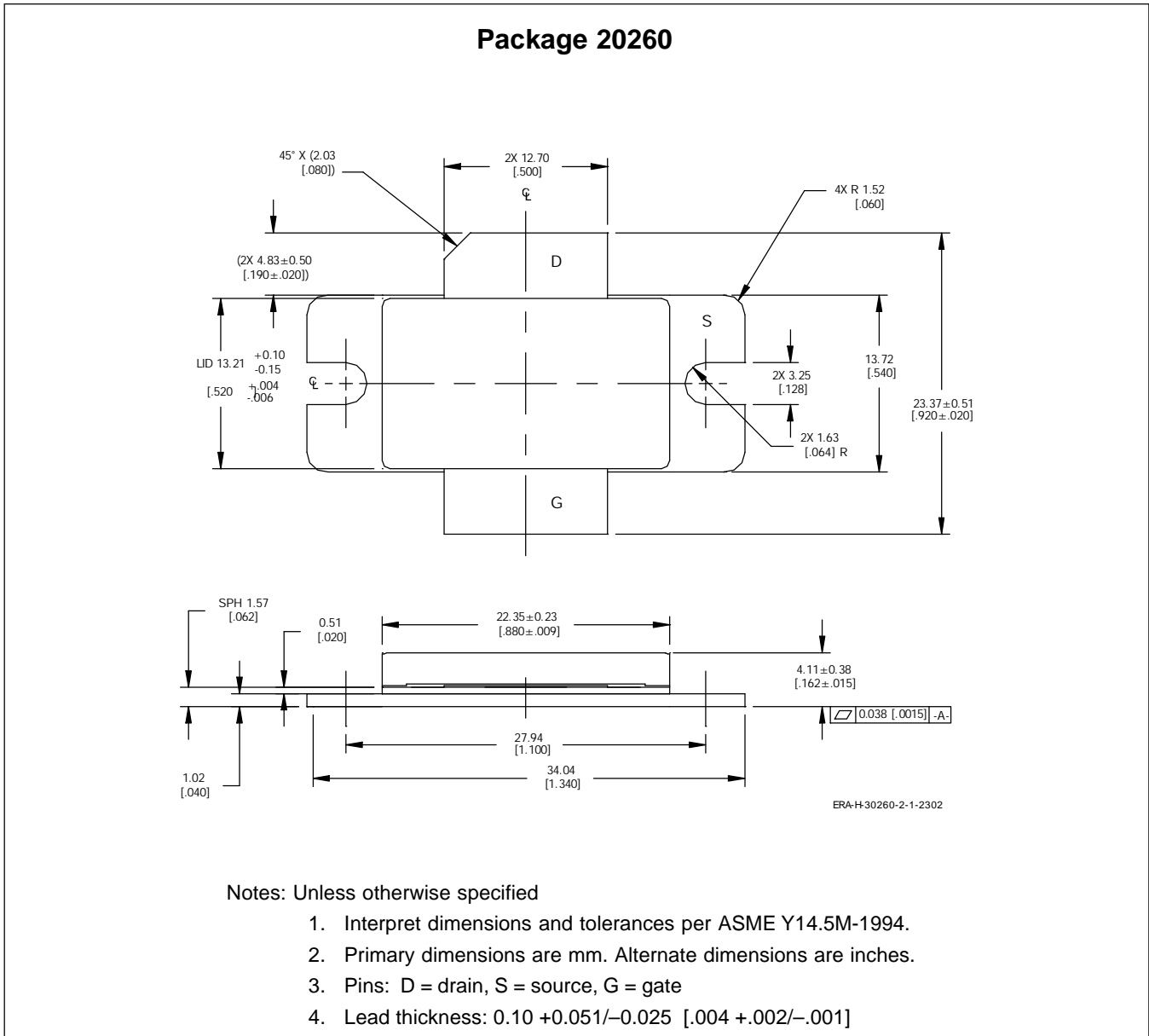
Maximum Ratings

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	$^{\circ}C$
Total Device Dissipation	P_D	350	W
Above $25^{\circ}C$ derate by		2.0	$W/^{\circ}C$
Storage Temperature Range	T_{STG}	–40 to +150	$^{\circ}C$
Thermal Resistance ($T_{CASE} = 70^{\circ}C, 130\text{ W CW}$)	$R_{\theta JC}$	0.50	$^{\circ}C/W$

Ordering Information

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

Package Outline Specifications



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

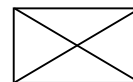
Page	Subjects (major changes since last revision)

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