

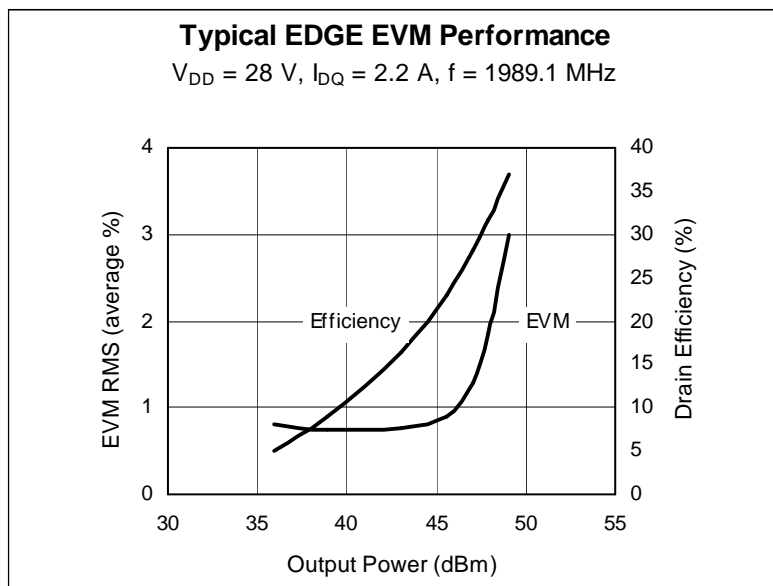


Advance Information PTF191601

LDMOS RF Power Field Effect Transistor 160 W, 1930 – 1990 MHz

Description

The PTF191601 is a 160 W, internally matched *GOLDMOS* FET intended for GSM and EDGE applications in the 1930 to 1990 MHz band. Full gold metallization ensures excellent device lifetime and reliability.



Features

- Broadband internal matching
- Typical EDGE performance
 - Average output power = 62 W
 - Gain = 14 dB
 - Efficiency = 32%
 - EVM = 1.7%
- Typical CW performance
 - Output power at P-1dB = 180 W
 - Gain = 13 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, 160 W (CW) output power

PTF191601E
Package 30260



ESD: Electrostatic discharge sensitive device—observe handling precautions!

RF Characteristics at $T_{CASE} = 25^{\circ}\text{C}$ unless otherwise indicated

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

$V_{DD} = 28\text{ V}$, $I_{DQ} = 2.2\text{ A}$, $P_{OUT} = 62\text{ W}$, $f = 1989.8\text{ MHz}$

| Characteristic | Symbol | Min | Typ | Max | Units |
|-------------------------------|-----------|-----|-----|-----|-------|
| Error Vector Magnitude | EVM (RMS) | — | 1.7 | — | % |
| Modulation Spectrum @ 400 kHz | ACPR | — | -60 | — | dBc |
| Modulation Spectrum @ 600 kHz | ACPR | — | -73 | — | dBc |
| Gain | G_{ps} | — | 14 | — | dB |
| Drain Efficiency | η_D | — | 32 | — | % |

Two-Tone Measurements (tested in Infineon test fixture)

$V_{DD} = 28\text{ V}$, $I_{DQ} = 2.2\text{ A}$, $P_{OUT} = 160\text{ W PEP}$, $f = 1990\text{ MHz}$, tone spacing = 1 MHz

| Characteristic | Symbol | Min | Typ | Max | Units |
|----------------------------|----------|-----|-----|-----|-------|
| Gain | G_{ps} | — | 14 | — | dB |
| Drain Efficiency | η_D | — | 36 | — | % |
| Intermodulation Distortion | IMD | — | -30 | — | dBc |

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

| Characteristic | Conditions | Symbol | Min | Typ | Max | Units |
|--------------------------------|---|---------------|-----|------|-----|---------------|
| Drain–Source Breakdown Voltage | $V_{GS} = 0\text{ V}, I_{DS} = 10\text{ }\mu\text{A}$ | $V_{(BR)DSS}$ | 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 | $V_{DS} = 28\text{ V}, I_{DQ} = 2.2\text{ A}$ | 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 |

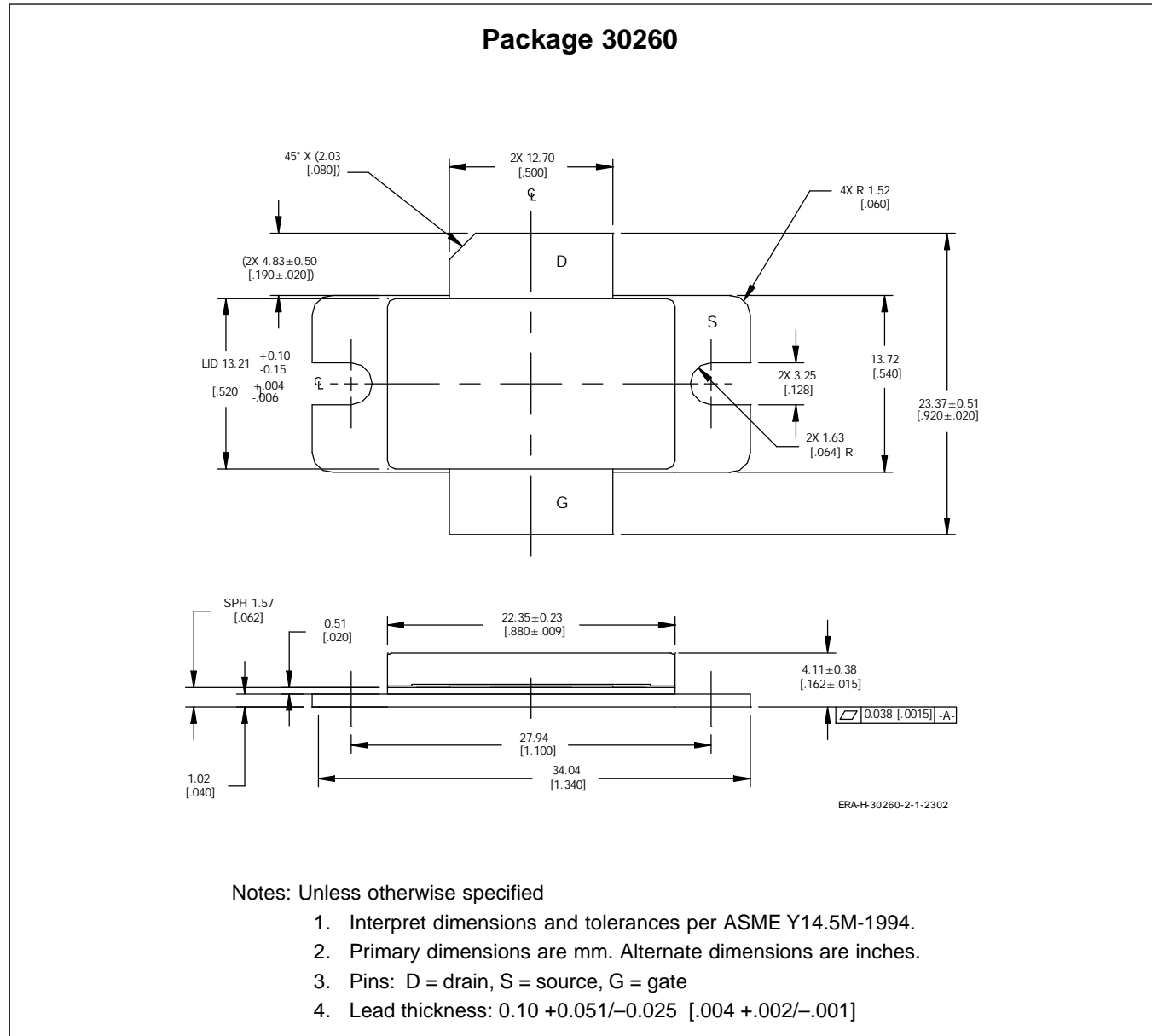
Maximum Ratings

| Parameter | Symbol | Value | Unit |
|--|-----------------|-------------|---------------|
| Drain–Source Voltage | V_{DSS} | 65 | V |
| Gate–Source Voltage | V_{GS} | –0.5 to +12 | V |
| Operating Junction Temperature | T_J | 200 | $^{\circ}C$ |
| Total Device Dissipation | P_D | 583 | W |
| Above $25^{\circ}C$ derate by | | 3.33 | $W/^{\circ}C$ |
| Storage Temperature Range | T_{STG} | –40 to +150 | $^{\circ}C$ |
| Thermal Resistance ($T_{CASE} = 70^{\circ}C, 130\text{ W CW}$) | $R_{\theta JC}$ | 0.30 | $^{\circ}C/W$ |

Ordering Information

| Type | Package Outline | Package Description | Marking |
|------------|-----------------|----------------------------------|------------|
| PTF191601E | 30260 | Thermally enhanced, flange mount | PTF191601E |

Package Outline Specifications



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

PTF191601

Limited Distribution

Revision History: 04-03-17

Developmental Data Sheet

Previous Version: none

| Page | Subjects (major changes since last revision) |
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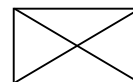
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