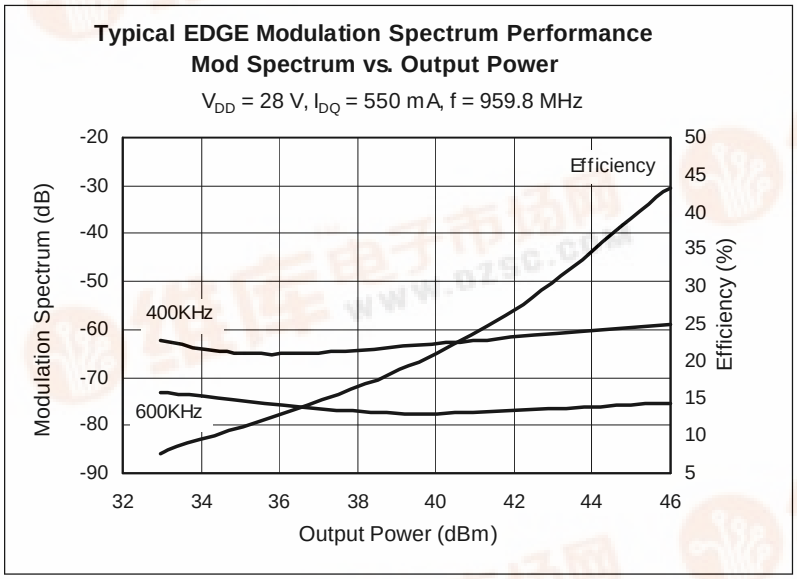
Developmental PTF080601

LDMOS RF Power Field Effect Transistor 60 W, 860–960 MHz

Description

The PTF080601 is a 60–W, internally matched *GOLDMOS* FET intended for EDGE and CDMA applications in the 860 to 960 MHz band. Full gold metallization ensures excellent device lifetime and reliability.



Features

- Broadband internal matching
- Typical EDGE performance
  - Average output power = 30 W
  - Gain = 18 dB
  - Efficiency = 40%
- Typical CW performance
  - Output power at P–1dB = 90 W
  - Gain = 17 dB
  - Efficiency = 60%
- Integrated ESD protection: Human Body Model, Class 1 (minimum)
- Excellent thermal stability
- Low HCI drift
- Capable of handling 10:1 VSWR @ 28 V, 60 W (CW) output power

PTF080601A
Package 20248

PTF080601E
Package 30248

PTF080601F
Package 31248

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

Two-Tone Measurements (tested in Infineon test fixture)

V_{DD} = 28 V, I_{DQ} = 550 mA, P_{OUT} = 60 W PEP, f_C = 960 MHz, tone spacing = 1000 kHz

Characteristic	Symbol	Min	Typ	Max	Units
Gain	G_{ps}	—	18	—	dB
Drain Efficiency	η_D	—	42	—	%
Intermodulation Distortion	IMD	—	–32	—	dBc

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

V_{DD} = 28 V, I_{DQ} = 550 mA, P_{OUT} = 30 W, f = 959.8 MHz

Characteristic	Symbol	Min	Typ	Max	Units
Error Vector Magnitude	EVM (RMS)	—	2.0	—	%
Modulation Spectrum @ 400 KHz	ACPR	—	–61	—	dBc
Modulation Spectrum @ 600 KHz	ACPR	—	–74	—	dBc
Gain	G_{ps}	—	18	—	dB
Drain Efficiency	η_D	—	40	—	%

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

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, I_{DS} = 1 A	$R_{DS(on)}$	—	0.1	—	Ω
Operating Gate Voltage	V_{DS} = 28 V, I_{DQ} = 550 mA	V_{GS}	—	3.2	—	V
Gate Leakage Current	V_{GS} = 10 V, V_{DS} = 0 V	I_{GSS}	—	—	1.0	µA

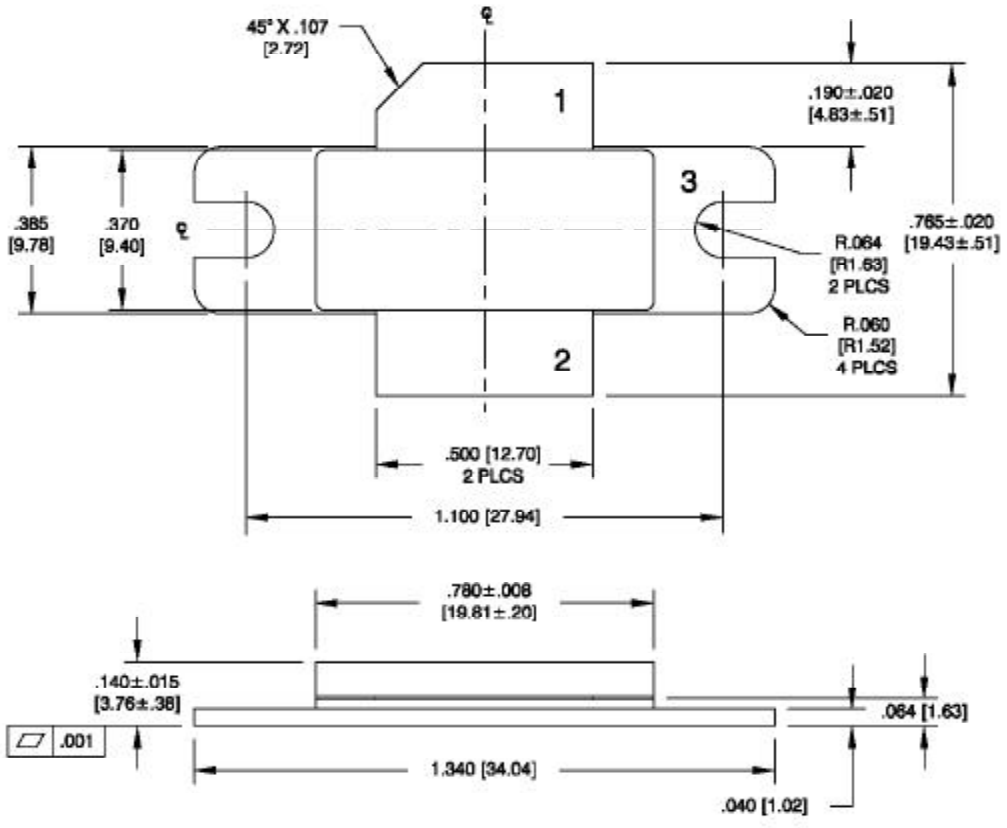
Maximum Ratings

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	PTF080601A	P_D	180	W
Above 25°C derate by			1.03	W/°C
Total Device Dissipation	PTF080601E	P_D	195	W
Above 25°C derate by			1.11	W/°C
Storage Temperature Range		T_{STG}	–40 to +150	°C
Thermal Resistance (T_{CASE} = 70°C)	PTF080601A	$R_{\theta JC}$	0.972	°C/W
	PTF080601E	$R_{\theta JC}$	0.897	°C/W

Type	Package Outline	Package Description	Marking
PTF080601A	20248	Standard ceramic, flange	PTF080601A
PTF080601E	30248	Thermally enhanced, flange	PTF080601E
PTF080601F	31249	Thermally enhanced, no flange	PTF080601F

Package Outline Specifications

Package 20248



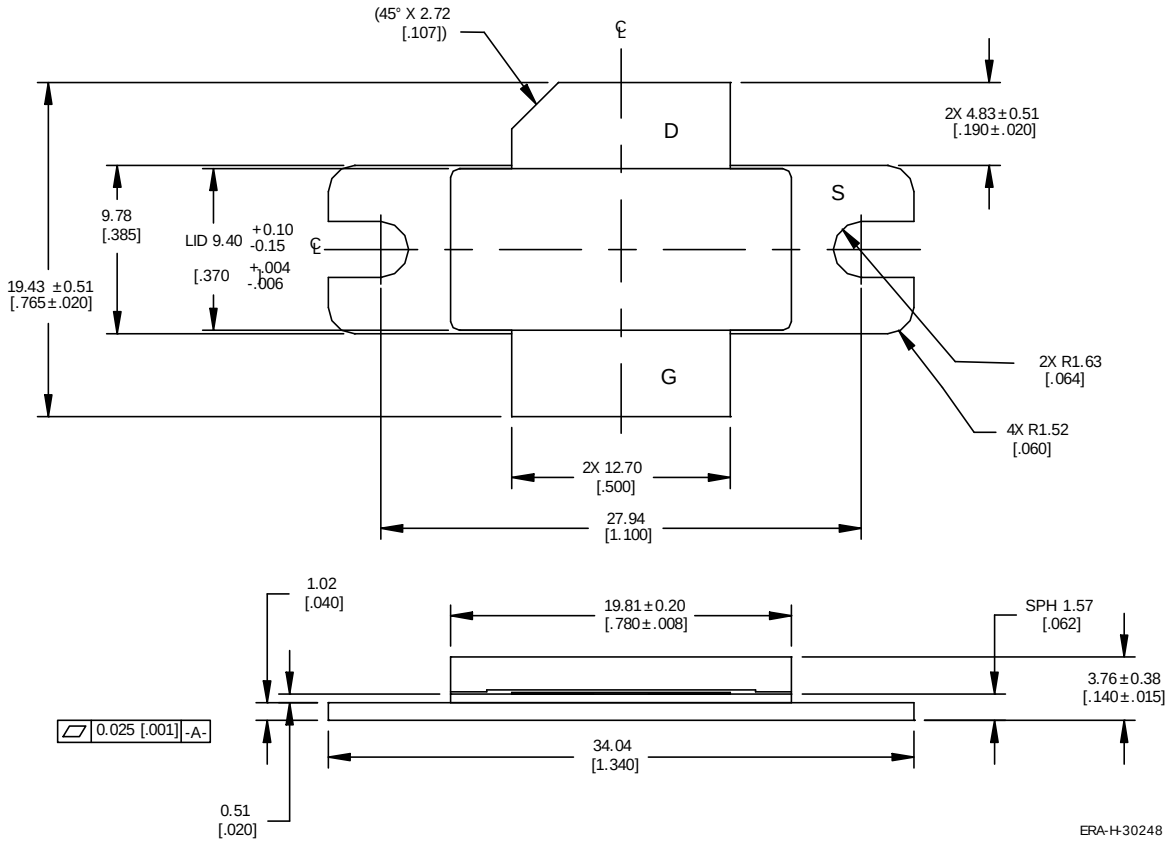
Unless otherwise specified
all tolerance ±0.005" [0.13mm]

Pins: 1. Drain 2. Gate 3. Source
Lead Thickness: 0.004 +0.002/-0.001"
[0.10 +.05/-0.03mm]

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

Package Outline Specifications

Package 30248



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]
5. Lids are toleranced with reference to leads.

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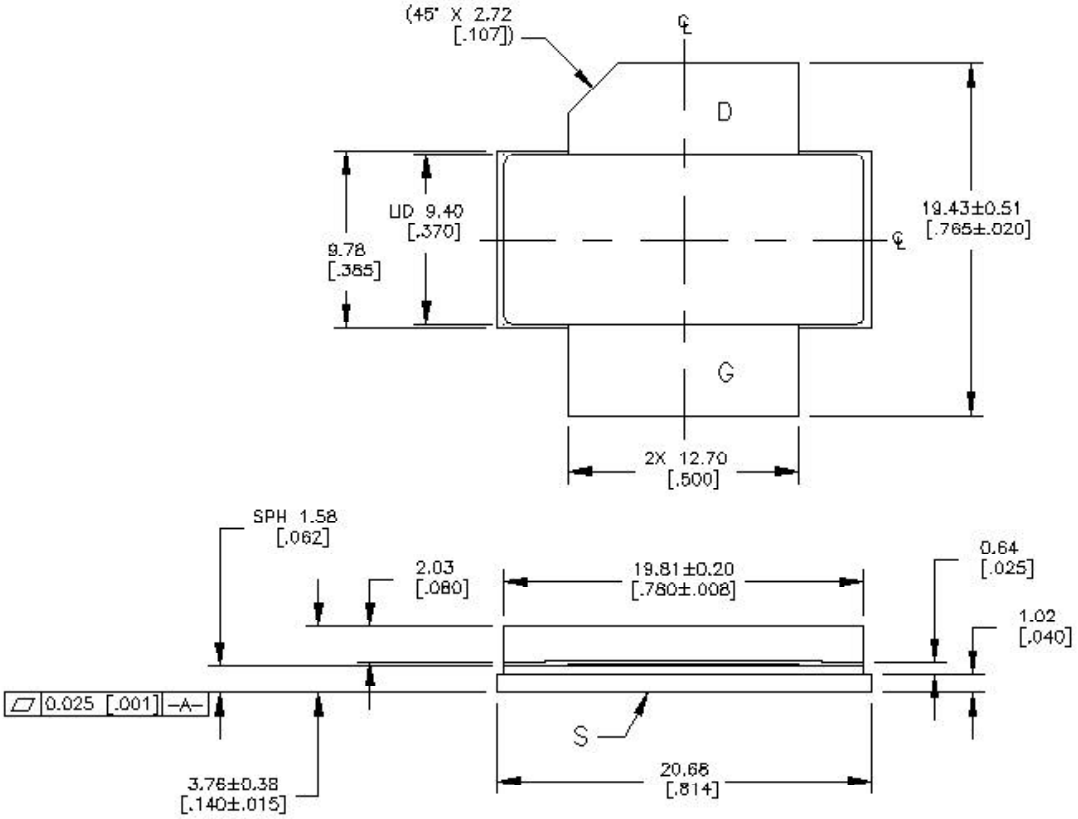
Package Outline Specifications

Package 31248



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PTF080601

Revision History:	**2003-12-05**	Developmental
Previous Version:	none	

Page	Subjects (major changes since last revision)

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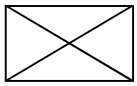

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