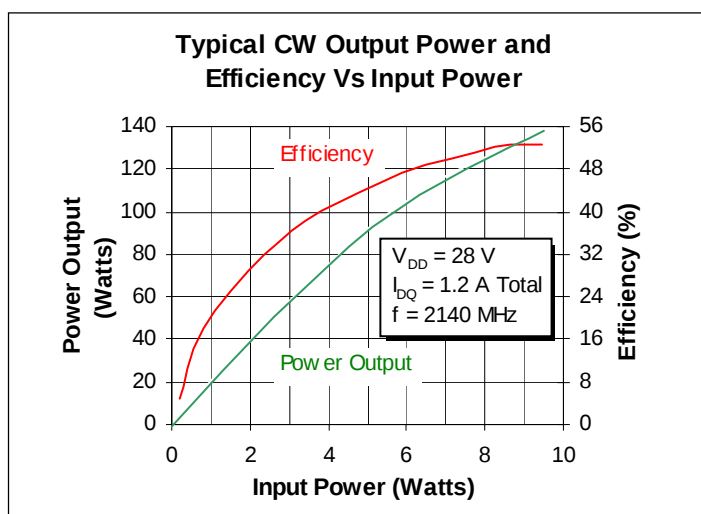


PRELIMINARY

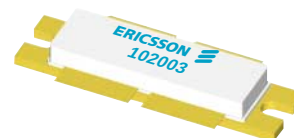
PTF 102003* GOLDMOS® Field Effect Transistor 120 Watts, 2110-2170 MHz

Description

The PTF 102003 is an internally matched, laterally double-diffused, push-pull, GOLDMOS FET intended for WCDMA applications from 2110 to 2170 MHz. It is rated at 120 watts output power with 11.5 dB linear gain. Nitride surface passivation and full gold metallization ensure extended lifetime and reliability.



- **Typical WCDMA Performance**
 - Average Output Power = 15 Watts
 - Gain = 12.5 dB
 - Efficiency = 18 %(Channel Bandwidth 3.84 MHz, adjacent channels $\pm 5\text{ MHz}$, Peak/Avg 9.0:1 at 0.01% CCD)
- **Typical CW Performance**
 - Output Power at P1-dB = 120 Watts
 - Gain = 11.5 dB
 - Efficiency = 49 %
- Full Gold Metallization
- Integrated ESD Protection
- Excellent Thermal Stability
- Broadband Internal Matching
- Low HCI Drift
- Will Handle 10:1 VSWR at 28 V, 120 W



Package 20250

Guaranteed Performance

Two-Tone Measurements

Unless otherwise indicated: $V_{DD} = 28\text{ V}$, $P_{OUT} = 60\text{ W}_{(AVG)}$, $I_{DQ} = 1.2\text{ A Total}$, $f = 2.11\text{ GHz}$, 2.17 GHz , Tone Spacing = 100 kHz

Characteristic	Symbol	Min	Typ	Max	Units
Gain	G_{ps}	11.5	—	—	dB
Drain Efficiency	η_D	33	38	—	%
Intermodulation Distortion	IMD	—	-32	-28	dBc

WCDMA Measurements

Single Carrier 3GPP Channel Bandwidth 3.84 MHz, Adj Channels $\pm 5\text{ MHz}$ Peak to Avg 9.0: 1, $P_{out} = 15\text{ W}$, $f = 2.14\text{ GHz}$

Characteristic	Symbol	Min	Typ	Max	Units
Adjacent Channel Power Ratio	ACPR	—	-46	-42	dB
Gain	G_{ps}	11.5	12.5	—	dB
Drain Efficiency	η_D	13	18	—	%

All published data at $T_{CASE} = 25^\circ\text{C}$ unless otherwise indicated.

* Note: Specification is preliminary and subject to change. Order this product or obtain additional information from your Ericsson Sales Representative.

Guaranteed Performance (cont.)

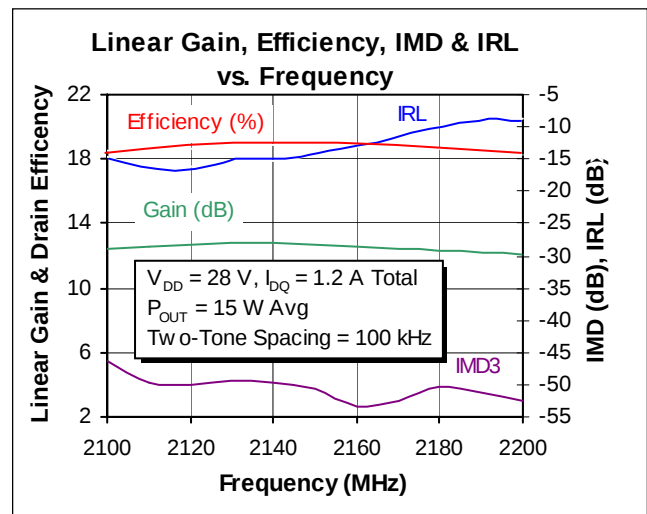
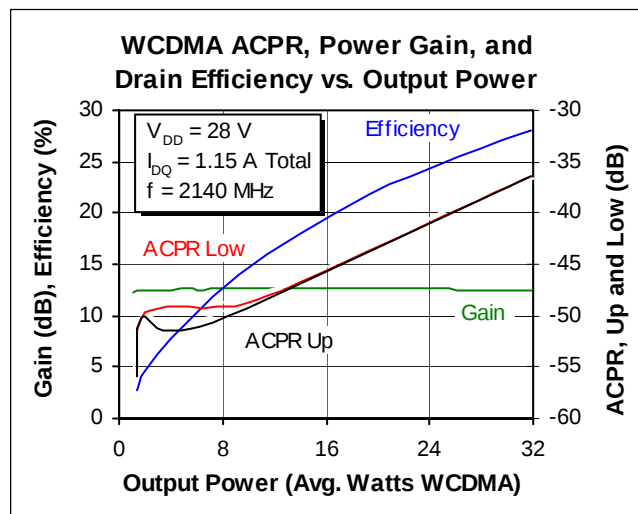
Characteristic (1)	Conditions	Symbol	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}$, $I_{DS} = 1\text{ }\mu\text{A}$	$V_{(BR)DSS}$	65	—	—	Volts
Drain Leakage Current	$V_{DS} = 28\text{ V}$, $V_{GS} = 0\text{ V}$	I_{DSS}	—	—	1.0	μA
Gate Threshold Voltage	$V_{DS} = 10\text{ V}$, $I_D = 150\text{ mA}$	$V_{GS(th)}$	3.0	—	5.0	Volts
Forward Transconductance	$V_{DS} = 10\text{ V}$, $I_{DS} = 4\text{ A}$	g_{fs}	—	4.0	—	Siemens
On-State Resistance Per Side	$V_{GS} = 10\text{ V}$, $I_{DS} = 1\text{ A}$	$R_{DS(on)}$	—	.13	—	Ohms

Maximum Ratings

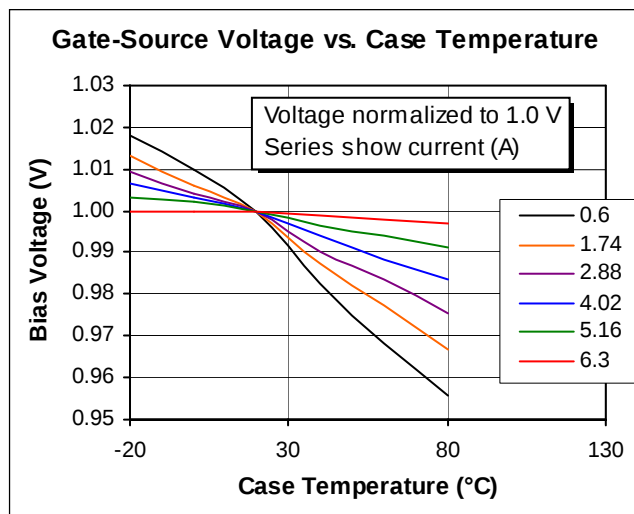
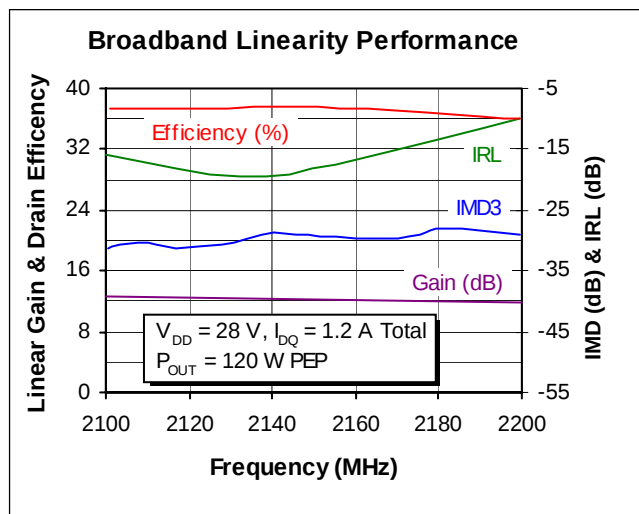
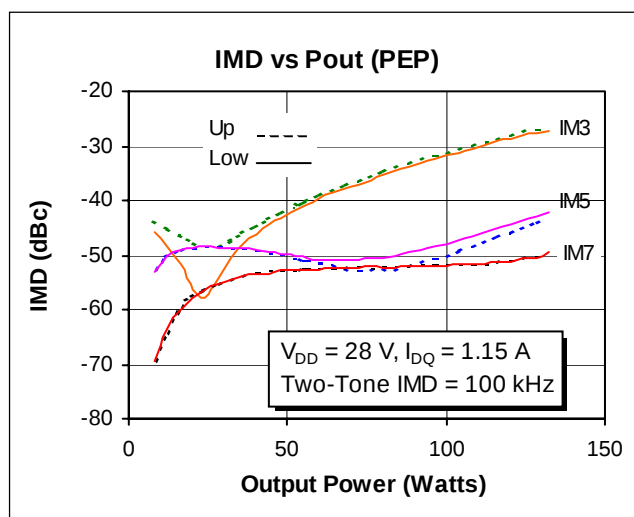
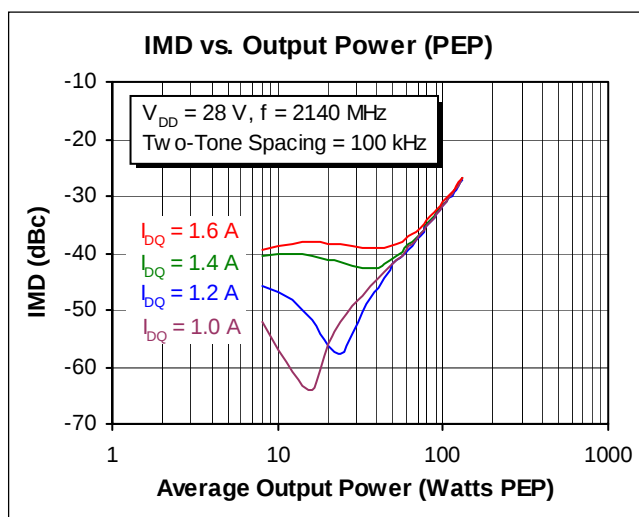
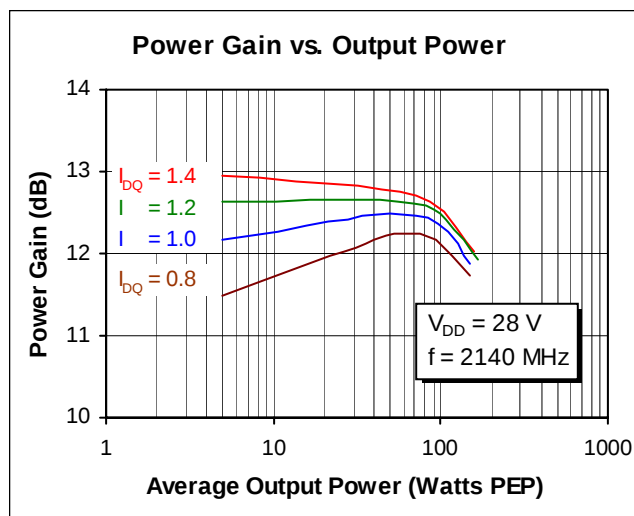
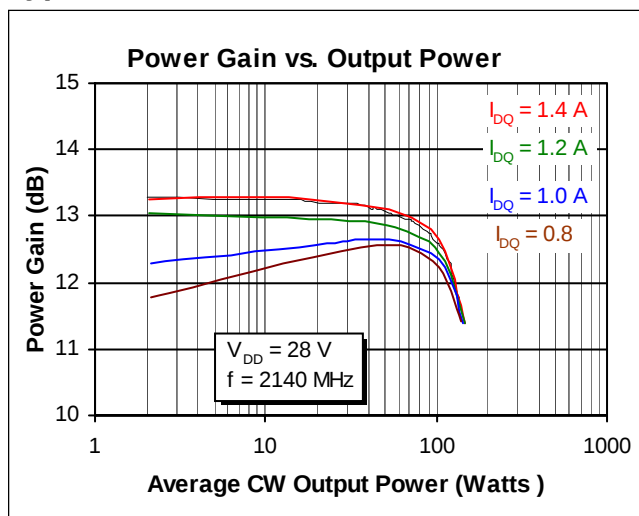
Parameter	Symbol	Value	Unit
Drain-Source Voltage ⁽¹⁾	V_{DSS}	65	Volts
Gate-Source Voltage ⁽¹⁾	V_{GS}	+20	Volts
Operating Junction Temperature	T_J	200	$^{\circ}\text{C}$
Total Device Dissipation Above 25°C derate by	P_D	292 1.66	Watts $\text{W}/^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-40 to +150	$^{\circ}\text{C}$
Thermal Resistance ($T_{CASE} = 70^{\circ}\text{C}$)	$R_{\theta JC}$	0.6	$^{\circ}\text{C}/\text{W}$

⁽¹⁾per side

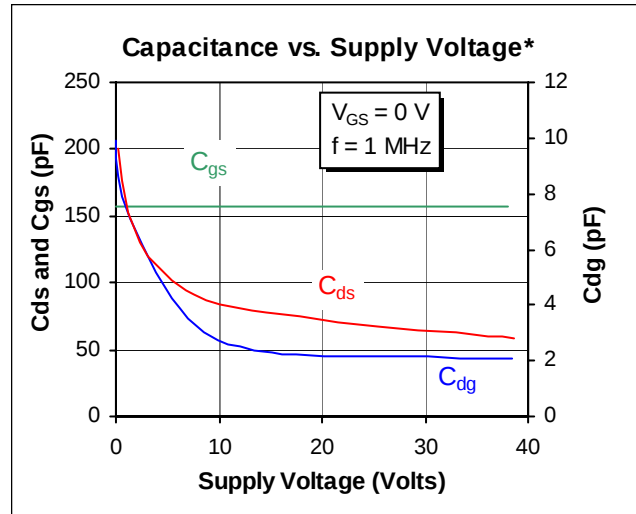
Typical Performance



Typical Performance (cont.)



Typical Performance (cont.)



* This part is internally matched. Measurements of the finished product will not yield these results.

Case Outline Specifications

