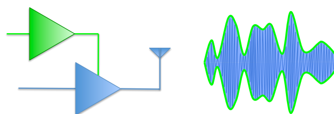


MaXEA 1.0
30V Integrated Envelope Modulator

The MaXEA 1.0 is part of the MaXentric Technologies GreenAmp-lite Envelope Tracking product line. The design represents a major leap forward in RF power amplification for wireless communication, providing a wideband high efficiency RF power amplifier solution. The MaXEA is an integrated envelope modulator designed in a high voltage silicon process.

Features:

- **Greatly increases RF PA power efficiency**
- **Operates up to 10MHz modulation bandwidth**
- **Average output power up to 7W**
- **Peak output power up to 35W**
- **Supports Peak-to-Average Power Ratios of greater than 7dB**
- **Power Efficiency > 70%**
- **Low output impedance**
- **Compatible with RF PAs in GaN, Si-LDMOS, GaAs, etc…**
- **RF PA carrier frequency independent**
- **Designed for WCDMA and LTE waveforms**
- **Available in a compact QFN package**

Recommended Operating Conditions

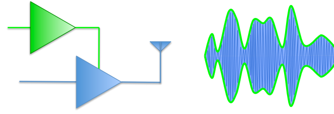
Parameter	Min	Max	Typ	Units
Supply Voltage	5	32	30	V
Driver V_{DD}	5	32	20	V
Driver V_{SS}	-15	0	-5	V
Input Signal				
Voltage Swing	0	3	0-3	V
Frequency	0	60	0-60	MHz
Operating Air Temp	TBD*	TBD*	+25	°C

* Temperature ratings will be included upon completion of thermal testing

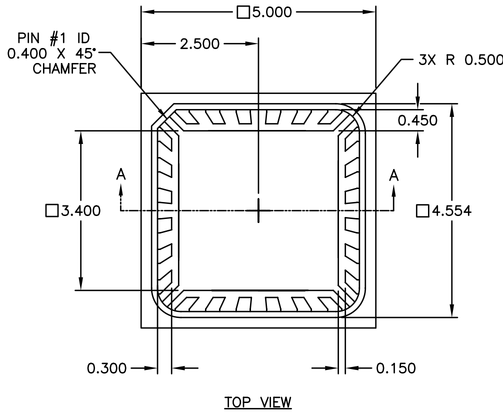
Maximum Ratings

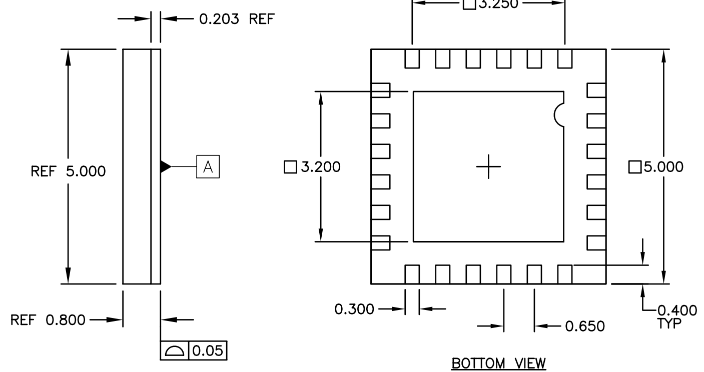
Parameter	Max	Units
Supply Voltage	32	V
Driver V_{DD} - V_{SS}	37.5	V
Peak Input Voltage	5	V
Supply Current	450	mA
Peak Output Voltage	32	V
Peak Output Current	1500	mA
RMS Output Current	450	mA
Maximum Load Impedance	150	Ω
Minimum Load Impedance (Assuming 7dB PAPR, 30V peak output)	25	Ω
Maximum Junction Temperature	TBD*	°C
Operating Air Temp Range	TBD*	°C

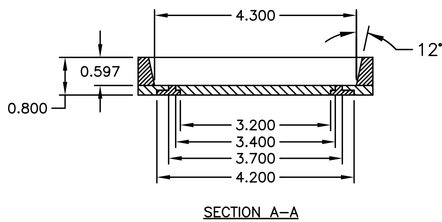
* Temperature ratings will be included upon completion of thermal testing



MaXEA 1.0 QFN Package Specifications (all units in mm)







NOTES

1. MATERIALS:
   LEAD FRAME: COPPER 194FH, THK = 0.203±0.008
   BODY: SEMICONDUCTOR MOLDING EPOXY, CONTACT QUIK–PAK FOR DETAILS.
2. FINISH:
   LEAD FRAME: ELECTROLESS NICKEL PER MIL–C–26074, CLASS 1,
   100 TO 300 MICROINCHES (2.5um – 7.6um) THICK.
   GOLD PLATE PER MIL–G–45204, TYPE 3, GRADE A, CLASS 1
   (40 TO 80 MICROINCHES (1um – 2um) THICK).
   BODY SURFACE FINISH: VDI 21–24 (1.12–1.6 Ra).
3. PACKAGE MISMATCH: BODY OFFSET TO LEAD FRAME = 0.076mm MAX
4. UNLESS OTHERWISE SPECIFIED, RADIUS ON ALL MOLDED EDGES AND CORNERS = 0.25mm MAX.
5. PACKAGE CONFORMS TO JEDEC MO–220.