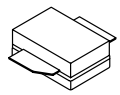
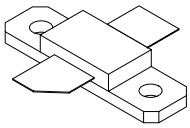
AGR09060E
60 W, 865 MHz—895 MHz, N-Channel E-Mode, Lateral MOSFET

Introduction

The AGR09060E is a high-voltage, gold-metalized, laterally diffused metal oxide semiconductor (LDMOS) RF power transistor suitable for cellular band, code-division multiple access (CDMA), global system for mobile communication (GSM), enhanced data for global evolution (EDGE), and time-division multiple access (TDMA) single and multicarrier class AB wireless base station amplifier applications.This device is manufactured on an advanced LDMOS technology, offering state-of-the-art performance, reliability, and best-in-class thermal resistance. Packaged in an industry-standard package and capable of delivering a minimum output power of 60 W, it is ideally suited for today's RF power amplifier applications.



AGR09060EU (unflanged)



AGR09060EF (flanged)

Figure 1. Available Packages

Features

- Typical performance ratings are for IS-95 CDMA, pilot, sync, paging, traffic codes 8—13:
  - — Output power (P_{OUT}): 14 W.
  - — Power gain: 17.5 dB.
  - — Efficiency: 28%.
  - — Adjacent channel power ratio (ACPR) for 30 kHz bandwidth (BW):
    (750 kHz offset: –45 dBc)
    (1.98 MHz offset: –60 dBc).
  - — Return loss: 10 dB.
- High-reliability gold-metalization process.
- High gain, efficiency, and linearity.
- Integrated ESD protection.
- Si LDMOS.
- Industry-standard packages.
- 60 W minimum output power.

Table 1. Thermal Characteristics

Parameter	Sym	Value	Unit
Thermal Resistance, Junction to Case:			
AGR09060EU	$R_{\theta JC}$	1.1	°C/W
AGR09060EF	$R_{\theta JC}$	TBD	°C/W

Table 2. Absolute Maximum Ratings*

Parameter	Sym	Value	Unit
Drain-source Voltage	V_{DSS}	65	Vdc
Gate-source Voltage	V_{GS}	–0.5, 15	Vdc
Total Dissipation at T_C = 25 °C:			
AGR09060EU	P_D	159	W
AGR09060EF	P_D	TBD	W
Derate Above 25 °C:			
AGR09060EU	—	TBD	W/°C
AGR09060EF	—	TBD	W/°C
Operating Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{STG}	–65, 150	°C

* Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Table 3. ESD Rating*

AGR09060E	Minimum (V)	Class
HBM	500	1B
MM	50	A
CDM	1500	4

* Although electrostatic discharge (ESD) protection circuitry has been designed into this device, proper precautions must be taken to avoid exposure to ESD and electrical overstress (EOS) during all handling, assembly, and test operations. Agere employs a human-body model (HBM), a machine model (MM), and a charged-device model (CDM) qualification requirement in order to determine ESD-susceptibility limits and protection design evaluation. ESD voltage thresholds are dependent on the circuit parameters used in each of the models, as defined by JEDEC's JESD22-A114B (HBM), JESD22-A115A (MM), and JESD22-C101A (CDM) standards.

Caution: MOS devices are susceptible to damage from electrostatic charge. Reasonable precautions in handling and packaging MOS devices should be observed.

RF Power Product Information

For product and application information, please visit our website: **http://www.agere.com/rfpower**.

For additional information, contact your Agere Systems Account Manager or the following:
INTERNET: **http://www.agere.com**
E-MAIL: **docmaster@agere.com**
N. AMERICA: Agere Systems Inc., Lehigh Valley Central Campus, Room 10A-301C, 1110 American Parkway NE, Allentown, PA 18109-9138
1-800-372-2447, FAX 610-712-4106 (In CANADA: **1-800-553-2448**, FAX 610-712-4106)
ASIA: Agere Systems Hong Kong Ltd., Suites 3201 & 3210-12, 32/F, Tower 2, The Gateway, Harbour City, Kowloon
Tel. (852) 3129-2000, FAX (852) 3129-2020
CHINA: **(86) 21-5047-1212** (Shanghai), **(86) 755-25881122** (Shenzhen)
JAPAN: **(81) 3-5421-1600** (Tokyo), KOREA: **(82) 2-767-1850** (Seoul), SINGAPORE: **(65) 6778-8833**, TAIWAN: **(886) 2-2725-5858** (Taipei)
EUROPE: **Tel. (44) 1344 296 400**

November 2003
PB04-010RFPP (Replaces PB03-084RFPP)