

Application-Specific Information

PowerPC 604e™ RISC Microprocessor Family: PID9v-604e (Sirocco) Bin Specification

This document defines a unique part number for a PowerPC 604e microprocessor manufactured by Motorola. It describes changes to recommended operating conditions and revised electrical specifications, as applicable, from those described in the *PowerPC 604e RISC Microprocessor Family: PID9v-604e Hardware Specifications*. Any functional differences (errata) for these parts from the functional description provided in the *PowerPC™ 604 RISC Microprocessor User's Manual* (order # MPC604UM/AD) or its addendum (order # MPC604UMAD/AD) are described in a separate Errata List available from your local Motorola sales office.

Specifications provided in this data sheet supercede those in Revision 1 (11/96) of the *PID9v-604e Hardware Specifications* (order #: MPC604E9VEC/D); specifications not addressed herein are unchanged.

Note that headings and table numbers in this data sheet are not consecutively numbered. They are intended to correspond to the heading or table affected in the general hardware specifications.

Part numbers addressed in this document and a summary of their differences from the general specification are listed in Table A. For more detailed ordering information see Table 14.

Table A. Part Numbers Addressed by this Data Sheet

Motorola Part Number	Operating Conditions			Significant Differences
	CPU Frequency	Vdd	T _J (°C)	
XPC604ERX180PE	180 MHz	2.40 to 2.60 V	0 to 85	Specification changes for different operating conditions.
XPC604ERX200PE	200 MHz	2.40 to 2.60 V	0 to 85	Specification changes for different operating conditions.
XPC604ERX225PE	225 MHz	2.40 to 2.60 V	0 to 85	Specification changes for different operating conditions.
XPC604ERX233PE	233 MHz	2.45 to 2.55 V	0 to 65	Specification changes for different operating conditions.
Note: The X prefix in a Motorola PowerPC part number designates a "Pilot Production Prototype" as defined by Motorola SOP 3-13. These are from a limited production volume of prototypes manufactured, tested and Q.A. inspected on a qualified technology to simulate normal production. These parts have only preliminary reliability and characterization data. Before pilot production prototypes may be shipped, written authorization from the customer must be on file in the applicable sales office acknowledging the qualification status and the fact that product changes may still occur while shipping pilot production prototypes				

1.1.4 DC Electrical Characteristics

Table 2 describes the changed DC operating conditions for the 604e part numbers described herein..

Table 2. Recommended Operating Conditions

Characteristic	Symbol	Value	Unit	Notes
Core supply voltage	Vdd	2.40 to 2.60	V	1
PLL supply voltage	AVdd	2.40 to 2.60	V	1
Junction temperature	T _J	0 to 85	°C	1
Core supply voltage	Vdd	2.45 to 2.55	V	2
PLL supply voltage	AVdd	2.45 to 2.55	V	2
Junction temperature	T _J	0 to 65	°C	2
Notes: 1. XPC604ERX200PE and XPC604ERX225PE only 2. XPC604ERX233PE only				

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Table 5 provides the power dissipation for these changed operating conditions.

Table 5. Power Consumption

CPU Clock: SYSCLK	Processor Core Frequency			Unit	Notes
	200 MHz	225 MHz	233 MHz		
Full-On Mode					
Typical	12.2	13.4	13.8	W	
Maximum	TBD	TBD	TBD	W	
Nap Mode					
Typical	.86	.89	.90	W	
Maximum	1.15	1.15	1.15	W	

Notes:

1.9 Ordering Information

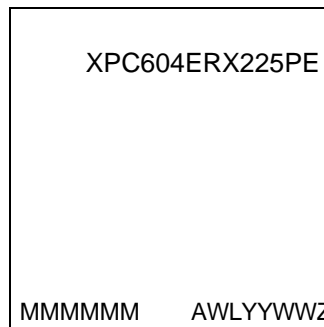
Table 14 provides the ordering information for the 604e part numbers described herein..

Table 14. Ordering Information for the PB-604e Microprocessor

Package Type	Device Rev	Process	Mask Code	CPU Frequency (MHz)	Part Number per PID9v-604e HW Specification	Application Specific Motorola Part Number
255 CBGA	2.4	PPC2.2	55G64W	180	MPC604ERX180LE	XPC604ERX180PE
				200	MPC604ERX200LE	XPC604ERX200PE
				225	MPC604ERX225LE	XPC604ERX225PE
				233	MPC604ERX233LE	XPC604ERX233PE

1.10 Part Marking

This section provides information on Motorola device marking. Parts are marked as the example shown in Figure A.



BGA


Notes:

- MMMMMM is the 6-digit mask code
- AWLYYWWZ is the traceability code

Figure A. Motorola Part Marking for BGA Devices

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