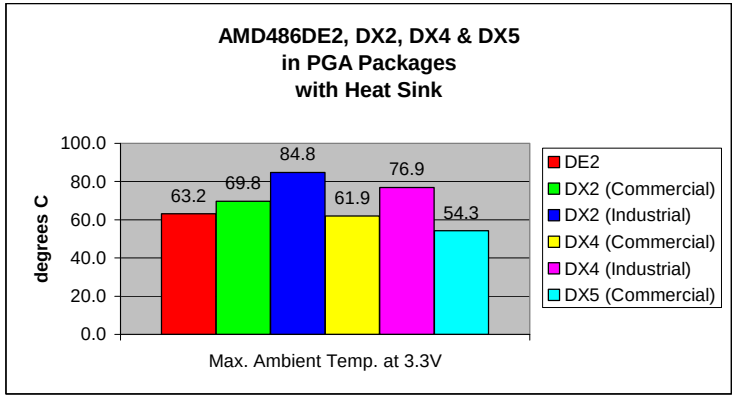
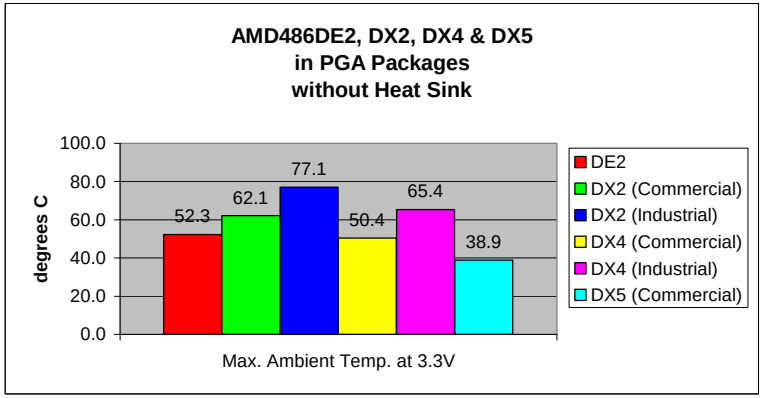
486pga_temp4 Comparision

Ceramic Packages Only





Equations: **Tj = Tcase + P * ThetaJC**
TA = Tj - P * ThetaJA
Tcase = TA + P * (ThetaJA - ThetaJC)
TA = Tcase - P * (ThetaJA - ThetaJC)

AMD Am486		Enhanced Am486DX Data Sheet Specifications						168 Pin Ceramic PGA without Heat Spreader				168 Pin Ceramic PGA with Heat Sink			
		Voltage (3.0-3.6V)	Icc Spec. (mA/MHz)	Frequency (MHz)	Total Icc (mA)	Power (Watts)	Case Temp. (degrees C)	Theta JC (deg. C/Watt)	Junction Temp.(C)	Theta JA (deg. C/Watt)	Ambient Temp.(C)	Theta JC (deg. C/Watt)	Junction Temp.(C)	Theta JA (deg. C/Watt)	Ambient Temp.(C)
DE2	Typ.	3.3	8.0	66	528.0	1.74	85	1.5	87.6	16.5	58.9	2.0	88.5	12.0	67.6
Commercial	Max.	**3.3**	10.0	66	660.0	2.18	85	1.5	88.3	16.5	**52.3**	2.0	89.4	12.0	**63.2**
	Max.	**3.6**	10.0	66	660.0	2.38	85	1.5	88.6	16.5	49.4	2.0	89.8	12.0	61.2
DX2	Typ.	3.3	6.2	66	409.2	1.35	100	1.5	102.0	16.5	79.7	2.0	102.7	12.0	86.5
Industrial	Max.	**3.3**	7.0	66	462.0	1.52	100	1.5	102.3	16.5	**77.1**	2.0	103.0	12.0	**84.8**
	Max.	**3.6**	7.0	66	462.0	1.66	100	1.5	102.5	16.5	75.1	2.0	103.3	12.0	83.4
DX2	Typ.	3.3	6.2	66	409.2	1.35	85	1.5	87.0	16.5	64.7	2.0	87.7	12.0	71.5
Commercial	Max.	**3.3**	7.0	66	462.0	1.52	85	1.5	87.3	16.5	**62.1**	2.0	88.0	12.0	**69.8**
	Max.	**3.6**	7.0	66	462.0	1.66	85	1.5	87.5	16.5	60.1	2.0	88.3	12.0	68.4
DX4	Typ.	3.3	6.2	100	620.0	2.05	100	1.5	103.1	16.5	69.3	2.0	104.1	12.0	79.5
Industrial	Max.	**3.3**	7.0	100	700.0	2.31	100	1.5	103.5	16.5	**65.4**	2.0	104.6	12.0	**76.9**
	Max.	**3.6**	7.0	100	700.0	2.52	100	1.5	103.8	16.5	62.2	2.0	105.0	12.0	74.8
DX4	Typ.	3.3	6.2	100	620.0	2.05	85	1.5	88.1	16.5	54.3	2.0	89.1	12.0	64.5
Commercial	Max.	**3.3**	7.0	100	700.0	2.31	85	1.5	88.5	16.5	**50.4**	2.0	89.6	12.0	**61.9**
	Max.	**3.6**	7.0	100	700.0	2.52	85	1.5	88.8	16.5	47.2	2.0	90.0	12.0	59.8
DX5	Typ.	3.3	6.2	133	824.6	2.72	100								
Industrial	Max.	**3.3**	7.0	133	931.0	3.07	100	DX5 is Not Supported in Industrial Temp,, 168 PGA package				DX5 is Not Supported in Industrial Temp,, 168 PGA package			
	Max.	**3.6**	7.0	133	931.0	3.35	100								
DX5	Typ.	3.3	6.2	133	824.6	2.72	85	1.5	89.1	16.5	44.2	2.0	90.4	12.0	57.8
Commercial	Max.	**3.3**	7.0	133	931.0	3.07	85	1.5	89.6	16.5	**38.9**	2.0	91.1	12.0	**54.3**
	Max.	**3.6**	7.0	133	931.0	3.35	85	1.5	90.0	16.5	34.7	2.0	91.7	12.0	51.5

Table #1

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AMD's PDE-208 Standard SQFP Package Thermal Resistance

Cooling Mechanism	Psi JT	Theta JA vs. Airflow in Linear ft/min. (m/sec)					
		0 (0)	200 (1.01)	400 (2.03)	600 (3.04)	800 (4.06)	
No Heat Sink	1.5	14.0	8.7	7.4	6.4	5.8	Note 2.

AMD's PDH-208 Low-Cost SQFP Package Thermal Resistance

Cooling Mechanism	Psi JT	Theta JA vs. Airflow in Linear ft/min. (m/sec)					
		0 (0)	200 (1.01)	400 (2.03)	600 (3.04)	800 (4.06)	
No Heat Sink	5.5	22.5	15.4	13.4	11.9	10.9	Note 2.

AMD's 168 Pin PGA Package Thermal Resistance

Cooling Mechanism	Theta JC	Theta JA vs. Airflow in Linear ft/min. (m/sec)					
		0 (0)	200 (1.01)	400 (2.03)	600 (3.04)	800 (4.06)	
No Heat Sink	1.5	16.5	14.0	12.0	10.5	9.5	Note 2.

Note: 1.) All data shown in Table #1 is based on No Airflow.
2.) Theta JA thermal resistance with Airflow is based on an average of measured values.