



XPC7445/7455 Microprocessor
MOS-13 HiP6SOI
Rev. 2.1
Qualification Report

Device No./Rev.: XPC7445/7455, Rev. 2.1		Report Rev.: 0
Description: XPC7445/7455		Revision date: 3/11/02
Technology: MOS13 HiP6SOI	Package: 360CBGA / 484CBGA	Page 1 of 6



XPC7445/7455 Product Information:

Product / Technology / Fab / Package Description	
Package	XPC7445: 360 CBGA (RX), 25 x 25 mm XPC7455: 484 CBGA (RX), 29 x 29 mm
Device	XPC7445/7455
Mask Set	L96C
Die Size	8.69 x 12.17 mm
Die Coating	5878 HD Microelectronics
Name/Location of Die Fab Facility	MOS-13 / Austin TX
Process Technology	0.18um HiP6SOI
Poly / Metal layers	1P / 6M
Assembly Location	Motorola, BAT-1 / Austin TX
Die Attach Material	Alpha Metals 9154Q
Bump Material / Diameter	97% Pb, 3% Sn / 4.0 mils
Moisture Sensitivity Level	MSL1
Substrate Supplier	NTK

XPC7445/7455 Product Reliability Data Summary:

HTOL / 2.25V, 90°C				
Lot / Mask Set	168 Hours	504 Hours	1008 Hours	
D44188 / 1L96C / Rev 2.1	0 / 87	0 / 87		
D44889 / 1L96C / Rev 2.1	0 / 93	0 / 93		
D41985 / 0L96C / Rev 2.0	0 / 33	0 / 33		
D40403 / 0L96C / Rev 2.0	0 / 92	1 / 92		
D40509 / 0L96C / Rev 2.0	0 / 92	0 / 92		
D40508 / 0L96C / Rev 2.0	0 / 35	0 / 35		
Totals	0 / 432	1 / 432		
Failure Comments		1-Fail Funct		

ESD / Latch-up					
Lot / Mask Set	HBM	MM	CDM / 500V - Skt	CDM / 500V - No Skt	Latch-up / 200mA
D40797 / L96C	0 / 1 @2KV	0 / 1 @200V			
D41675 / L96C	0 / 2 @1KV	0 / 2 @100V	0 / 2		
D40508 / L96C	0 / 1 @1KV	0 / 1 @100V	0 / 1		
Totals					
Failure Comments					

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484 CBGA Package Reliability Data (by similarity):

Moisture Sensitivity Level Characterization				
Lot / Mask Set	MSL1			
D34398 / 3K51S (XPC7450RX)	0 / 77			
D34417 / 3K51S (XPC7450RX)	0 / 77			
D34608 / 3K51S (XPC7450RX)	0 / 77			
Totals	0 / 231			
Failure Comments				

Temperature Cycle / -55°C +125°C Air-to-Air, with MSL1 Preconditioning				
Lot / Mask Set	100 Cycles	500 Cycles	1000 Cycles	
D34398 / 3K51S (XPC7450RX)	0 / 77	0 / 77	0 / 77	
D34417 / 3K51S (XPC7450RX)	0 / 77	0 / 77	0 / 77	
D34608 / 3K51S (XPC7450RX)	0 / 77	0 / 77	0 / 77	
Totals	0 / 231	0 / 231	0 / 231	
Failure Comments				

Thermal Shock / -55°C +125°C Liquid-to-Liquid, with MSL1 Preconditioning				
Lot / Mask Set	100 Cycles	500 Cycles	1000 Cycles	
D34398 / 3K51S (XPC7450RX)	0 / 77	0 / 77	0 / 72	
D34417 / 3K51S (XPC7450RX)	0 / 77	0 / 77	0 / 76	
D34608 / 3K51S (XPC7450RX)	0 / 77	0 / 77	0 / 72	
Totals	0 / 231	0 / 231	0 / 220	
Failure Comments				

Autoclave / 121°C, 100% RH, 2 atm, with MSL1 Preconditioning				
Lot / Mask Set	48 hrs	96 hrs	144 hrs	
D34398 / 3K51S (XPC7450RX)	0 / 77	0 / 77	0 / 77	
D34417 / 3K51S (XPC7450RX)	0 / 77	0 / 77	0 / 77	
D34608 / 3K51S (XPC7450RX)	0 / 77	0 / 75	0 / 75	
Totals	0 / 231	0 / 229	0 / 229	
Failure Comments				

High Temperature Bake / 175°C				
Lot / Mask Set	168 hrs	504 hrs	1008 hrs	
U23353 (XPC7410RX)	0 / 65	0 / 65	0 / 62	
U23467 (XPC7410RX)	0 / 70	0 / 70	0 / 70	
U23537 (XPC7410RX)	0 / 87	0 / 87		
Totals	0 / 222	0 / 222	0 / 132	
Failure Comments				

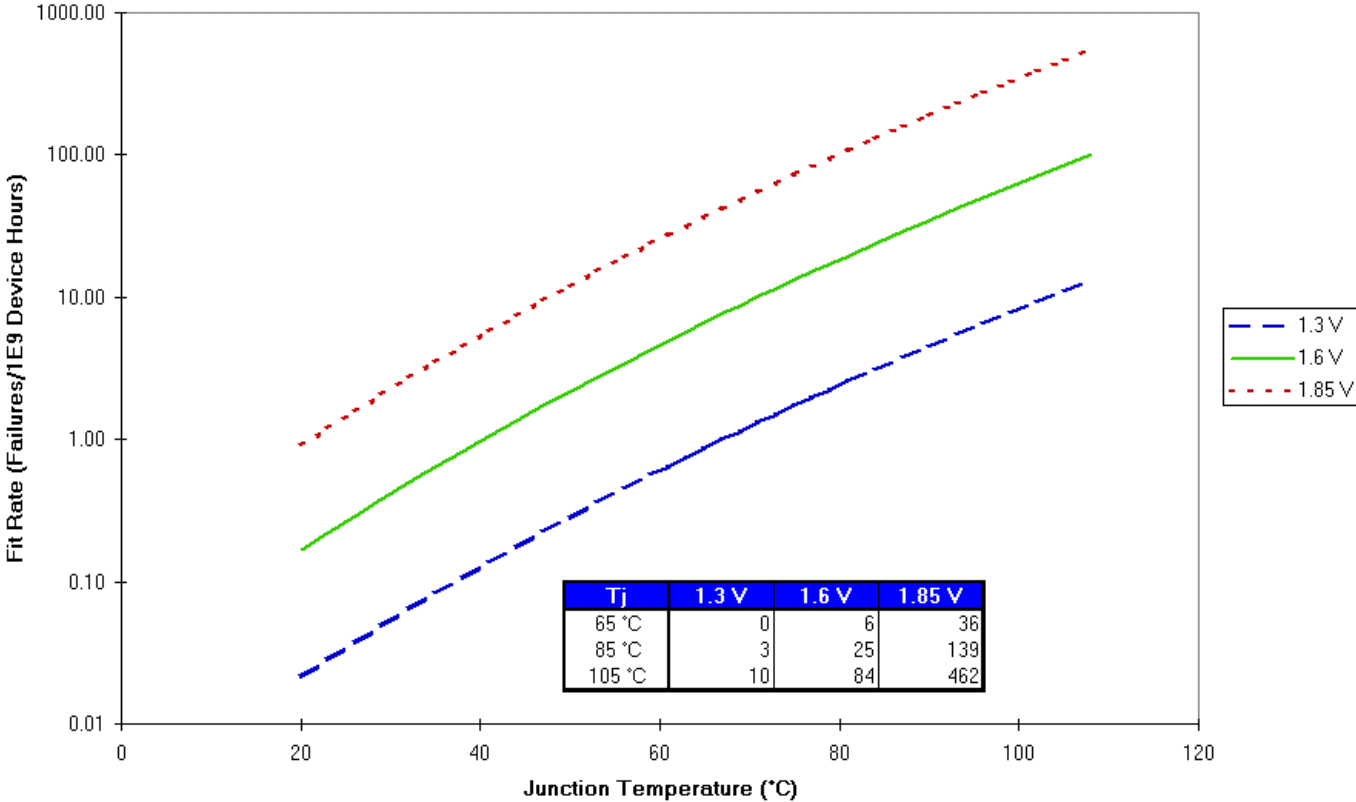
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XPC7445/7455 Product FIT Rate and MTBF Derated Curves:



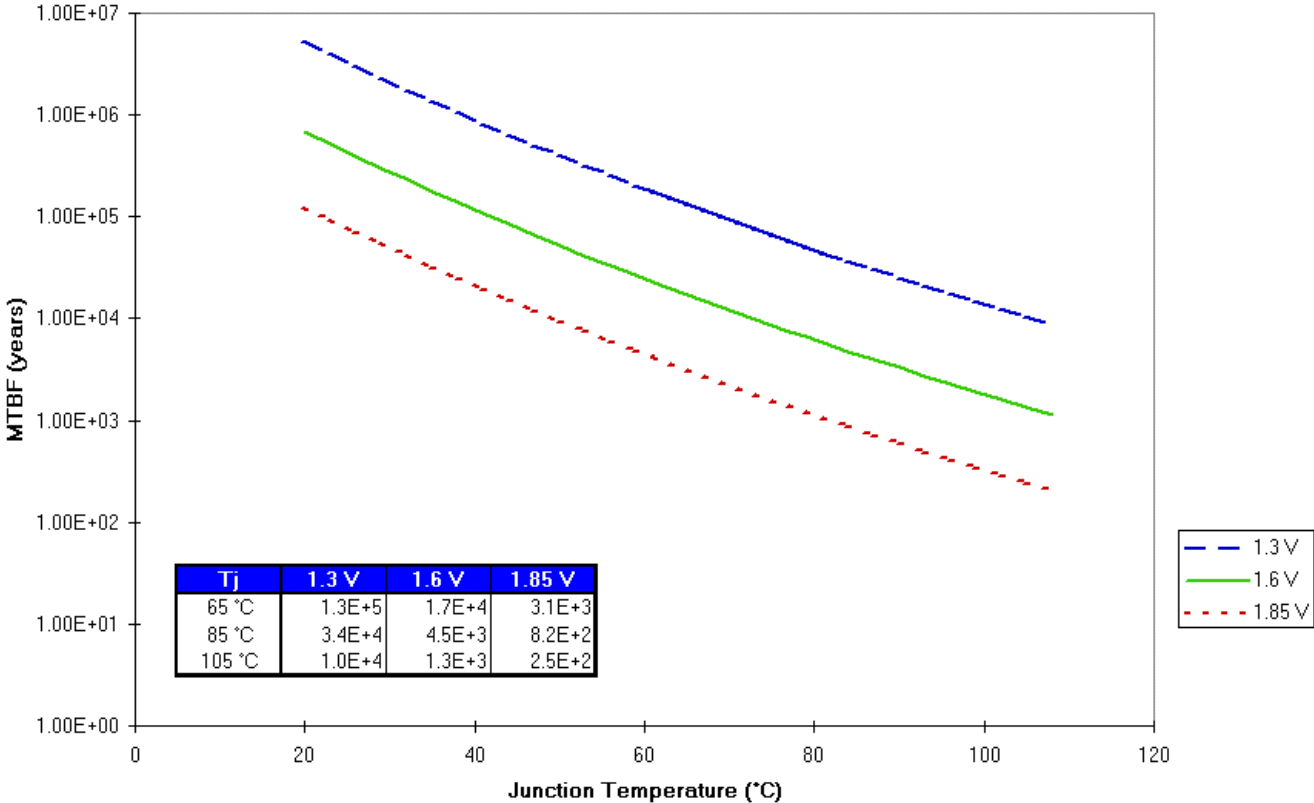
FITs vs Junction Temperature: 7445/7455
 Thermal and Voltage Acceleration
 eA = 0.7 eV, Beta = 6.8, 60% Confidence



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Revision History:

Revision History			
Revision	Date*	Comment	Author
Original	3/11/02	Initial Release - L, N, P, Q, S, W Specs	Leo Loc

Update Revision Date in Footer

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