



Zentrum Mikroelektronik Dresden

Dresden, Jan.26th,1999

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Qualification Report U637H256DC25 / U637256DC70
U637H256DK25 / U637256DK70

Function: 32k x 8 nvSRAM „ Cap - Store „
Package: DIP 28 (600mil) plastic
Lot no.: 2259041, 225941A, 2279821, 2279821A

Test results

Test No.	Function/ electrical parameters	Conditions	n	c	r	Remarks
1.1	function	data sheet ; 0°C to 70°C -40°C to 85°C	500 315	0 0	0 0	
1.2	parameters	data sheet ; 0°C to 70°C -40°C to 85°C	500 315	0 0	0 0	

Test No.	Reliability tests	Conditions	n	c	r	Remarks
3.1.2	temperature preconditioning	260°C/10sec solder bath DI - water cleaning 10min	135		0	
3.2	solder preconditioning	150°C/16h 100°C/100% r.h./4h	22	0	0	
3.2.1	solderability	235°C/3sec/solder bath	22	0	0	
3.4.1	temperature cycling TC without preconditioning	-65°C/150°C 1000cycles	10	0	0	

Test No.	Reliability tests	Conditions	n	c	r	Remarks
3.4.2	temperature cycling TC, preconditioning 3.1.2	-65°C/150°C 1000cycles	45	0	0	
3.5.2	high temperature storage HTS/data retention	150°C 192h 500h 1000h 2000h	32 32 32	0/0 0/ - 0/ -	0/0 0/0 0/0	lot no. 2259041 1)
	endurance	25°C/100k cycles 2000h				
3.5.2	high temperature storage HTS/data retention	150°C 192h 500h 1000h 2000h	32 32 32	0/0 0/ - 0/ -	0/0 0/0 0/0	lot no. 2259041A 1)
	endurance	25°C/100k cycles 2000h				
4.1	temperature humidity bias THB	85°C/85%r.h./5,25V/1000h	45	0	0	lot no. 2259041A 1)
4.1	temperature humidity bias THB	85°C/85%r.h./5,25V/1000h	45	0	0	lot no. 2279821 1)
4.3.2	pressure cooker test PCT, preconditioning 3.1.2	121°C/100%r.h. 168h 336h	45	0 -	0 0	lot no. 2259041
4.3.2	pressure cooker test PCT, preconditioning 3.1.2	121°C/100%r.h. 168h 336h	45	0 -	0 0	lot no. 2279821A
5.1.2	electrical life test HTOL	125°C/7,0V 1000h	75	0	0	lot no. 2259041 1)
5.1.2	electrical life test HTOL	125°C/7,0V 1000h	75	0	1	lot no. 2259041A 1), 2)
5.1.2	electrical life test HTOL	125°C/7,0V 1000h	75	0	0	lot no. 2279821 1)
5.1.2	electrical life test HTOL	125°C/7,0V 1000h	75	0	0	lot no 2279821A 1)

Test No.	Reliability tests	Conditions	n	c	r	Remarks
6.1	ESD - integrity	3x ± 2,0kV	6	0	0	
		ref.to Vss		-	0	
		3x ± 8,0kV	6	0	0	
		3x ± 2,0kV		-	0	
ref.to Vcc						
		3x ± 8,0kV				

1) 2000 h ww 06/99

2) function fail, 700h < testtime < 1000h; failureanalysis in process

the result for the reliability in test no. 5.1.2 is 14 fit ; normalized to 55°C,
confidence level 60%

Bernd Gersdorf