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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION**  
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**18-DEC-2003**

**SUBJECT: ON Semiconductor Final Product/Process Change Notification #12791**

**TITLE: Dual Source ASMC Wafer Fab Qualification for Analog Products**

**EFFECTIVE DATE: 18-Feb-2004**

**AFFECTED CHANGE CATEGORY:** Subcontractor Fab Site

**AFFECTED PRODUCT DIVISION:** Analog Products

**ADDITIONAL RELIABILITY DATA:** Available

Contact your local ON Semiconductor Sales Representative or Joe Duffalo <FFBH9W@onsemi.com>

**SAMPLES:** Contact your local ON Semiconductor Sales Representative or Marek Bek <FFJDPM@onsemi.com>

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact Sales Representative or Alan Garlington <RPR180@onsemi.com>

**NOTIFICATION TYPE:**

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 60 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact your local ON Semiconductor Sales Office.

**DESCRIPTION AND PURPOSE:**

This is a Final Product Change Notice to make customers aware of the qualification of the ASMC wafer fab located in Shanghai, China. The Initial Change Notice (#12791) for this was issued on March 28, 2003. This fab has been qualified as a supplemental wafer fab source for ON Semiconductor. ASMC is a fully certified QS9000, ISO9002 and ISO14001 supplier. The Analog EPI44 Standard Linear process is being qualified to run specific devices which are currently processed at the Tesla, Czech Republic location. The exact same mask set designs will be run at ASMC and full device electrical characterizations will be performed to ensure there is no change in device performance. This change is classified as a capacity expansion since the devices listed below may be run at either wafer fab once the final PCN expires.



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**RELIABILITY DATA SUMMARY:**

A) MC7805BT		089A T0616	090A T0481	091A CT0481
HTOL	Ta = 125 C.; 500 hrs	0/80	0/80	0/80
AC	Ta = 121 C; RH=100%; 15 PSI; 96 Hrs	0/80	0/80	0/80
HAST	130 C; 85%RH; 96 Hrs	0/80	0/80	0/80
TC	500 Cyc ; -65 to +150 C	0/80	0/80	0/80
ELFR	Ta = 125 C; 48 hrs	0/500		
ESD-HBM -	All meet 2000V Class 2, per JESD22-A114-B			
ESD-MM -	All meet 200V Class B. per JESD22-A115-A			

B) MC78M12BDT

HTOL	Ta = 125 C.; 500 hrs	0/77		
AC	Ta = 121 C; RH=100%; 15 PSI; 96 Hrs	0/77		
HAST	130 C; 85%RH; 96 Hrs	0/77		
TC	500 Cyc ; -65 to +150 C	0/77		
ELFR	Ta = 150 C; 24 hrs	0/500		
ESD-HBM -	All meet 3000V Class 2, per JESD22-A114-B			
ESD-MM -	All meet 300V Class B. per JESD22-A115-A			
LATCH UP (Class 1) --	All Pass, per EIA/JESD-78			

C) MC78L05ABD

HTOL	Ta = 125 C.; 500 hrs	0/77		
PreConditioning,	JEDEC MSL-1-260C	0/231		
AC	Ta = 121 C; RH=100%; 15 PSI; 96 Hrs	0/77		
HAST	130 C; 85%RH; 96 Hrs	0/77		
TC	500 Cyc ; -65 to +150 C	0/77		
ESD-HBM -	All meet 4000V Class 2, per JESD22-A114-B			
ESD-MM -	All meet 200V Class B. per JESD22-A115-A			

**ELECTRICAL CHARACTERISTIC SUMMARY:**

MC7805BT -- One lot Characterization Data (T0481), Major Parameters

Parameter	Unit	Mean	S.D.	Min.	Max.	Specification	
						Min.	Max.
Vout,Io=1 Amp; Vin=10V	V	5.023	.016	4.995	5.049	4.8	5.2
Vout,Io=1Amp; Vin=20V	V	5.023	.016	4.996	5.049	4.8	5.2
Vout,Io=.5Amp; Vin=10V	V	5.025	.017	4.996	5.051	4.8	5.2
Line Reg,Vin=7 to 20V;Io=1A	mV	-1.388	.673	-3.00	.800	-10	10
Load Reg,Io=.05 to 1.5A;Vin=10V	mV	.224	.862	-2.00	1.70	-15	15
Iq,Vin = 10V;Io=.5A	mA	2.991	.028	2.950	3.100		6



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MC78M12 -- One lot Characterization Data (T0556), Major Parameters

Parameter	Unit	Mean	S.D.	Min.	Max.	Specification	
						Min.	Max.
Vout, Io=200ma; Vin=19V	V	12.012	.049	11.89	12.10	11.5	12.5
Vout, Io=200ma; Vin=27V	V	12.015	.048	11.89	12.10	11.5	12.5
Line Reg, Vin=14.5 to 30V Io = 200ma	mV	-.531	.065	-.700	-.400	-50	50
Load Reg, Vin = 19V, Io = 5 to 500ma	mA	12.952	1.93	-14.9	-3.6	-200	200
Iq, Vin = 19V; Io=200ma	mA	3.054	.033	2.950	3.100		6

MC78L05ABD -- One lot Characterization Data (T0614), Major Parameters

Parameter	Unit	Mean	S.D.	Min.	Max.	Specification	
						Min.	Max.
Vout, Io=40ma; Vin=20V	V	5.030	.018	4.986	5.060	4.75	5.25
Vout, Io=5ma; Vin=10V	V	5.032	.019	4.987	5.061	4.75	5.25
Line Reg, Vin=7 to 20V Io = 40ma	mV	-.235	.128	-.600	.00	-150	150
Load Reg, Vin=10V Io = 1 to 40 ma	mA	2.649	1.043	-5.10	-.70	-30	30
Iq, Vin=10V; Io=40ma	mA	3.070	.021	3.107	3.012		6

**CHANGED PART IDENTIFICATION :**

Normal assembly lot tracability codes may be used to identify product assembled with ASMC die.

**AFFECTED DEVICE LIST (WITHOUT SPECIALS):**

**PART**

- FMC78L05ABD
- FMC78L05ABDR2
- FMC78L05ACD
- FMC78L05ACDR2
- FMC78L08ACD
- FMC78L08ACDR2
- FMC78L12ABD
- FMC78L12ABDR2
- FMC78L12ACD
- FMC78L12ACDR2
- FSC78L05ABDR2
- JCP78M05CDTRK
- MC7805ABD2T
- MC7805ABD2TR4
- MC7805ABT
- MC7805ACD2T
- MC7805ACD2TR4
- MC7805ACT
- MC7805BD2T
- MC7805BD2TR4
- MC7805BDT
- MC7805BDTRK
- MC7805BT



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MC7805CD2T  
MC7805CD2TR4  
MC7805CDT  
MC7805CDTRK  
MC7805CT  
MC7806ACT  
MC7806BD2T  
MC7806BD2TR4  
MC7806BT  
MC7806CT  
MC7808ABD2T  
MC7808ABD2TR4  
MC7808ABT  
MC7808ACT  
MC7808BD2T  
MC7808BD2TR4  
MC7808BDT  
MC7808BDTRK  
MC7808BT  
MC7808CD2T  
MC7808CD2TR4  
MC7808CDT  
MC7808CDTRK  
MC7808CDTT5  
MC7808CDTT5G  
MC7808CT  
MC7809ACT  
MC7809BT  
MC7809CD2T  
MC7809CD2TR4  
MC7809CT  
MC7812ABD2T  
MC7812ABD2TR4  
MC7812ABT  
MC7812ACD2T  
MC7812ACD2TR4  
MC7812ACT  
MC7812BD2T  
MC7812BD2TR4  
MC7812BDT  
MC7812BDTRK  
MC7812BT  
MC7812CD2T  
MC7812CD2TR4  
MC7812CDT  
MC7812CDTRK  
MC7812CT  
MC7815ABD2T  
MC7815ABD2TR4  
MC7815ABT  
MC7815ACD2T  
MC7815ACT  
MC7815BD2T  
MC7815BD2TR4  
MC7815BDT  
MC7815BDTRK



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MC7815BT  
MC7815CD2T  
MC7815CD2TR4  
MC7815CDT  
MC7815CDTRK  
MC7815CT  
MC7818ACT  
MC7818BT  
MC7818CD2T  
MC7818CD2TR4  
MC7818CT  
MC7824ACT  
MC7824BD2T  
MC7824BD2TR4  
MC7824BT  
MC7824CD2T  
MC7824CD2TR4  
MC7824CT  
MC78L05ABD  
MC78L05ABDR2  
MC78L05ABP  
MC78L05ABPRA  
MC78L05ABPRE  
MC78L05ABPRM  
MC78L05ACD  
MC78L05ACDR2  
MC78L05ACDR2G  
MC78L05ACP  
MC78L05ACPRA  
MC78L05ACPRE  
MC78L05ACPRM  
MC78L05ACPRP  
MC78L08ABD  
MC78L08ABDR2  
MC78L08ABP  
MC78L08ABPRA  
MC78L08ABPRP  
MC78L08ACD  
MC78L08ACDR2  
MC78L08ACP  
MC78L08ACPRA  
MC78L08ACPRE  
MC78L08ACPRP  
MC78L09ABD  
MC78L09ABDR2  
MC78L09ABPRA  
MC78L09ABPRP  
MC78L09ACD  
MC78L09ACDR2  
MC78L09ACP  
MC78L12ABD  
MC78L12ABDR2  
MC78L12ABP  
MC78L12ABPRP  
MC78L12ACD  
MC78L12ACDR2



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MC78L12ACP  
MC78L12ACPRA  
MC78L12ACPRA  
MC78L12ACPRA  
MC78L12ACPRA  
MC78L12ACPRA  
MC78L15ABD  
MC78L15ABDR2  
MC78L15ABP  
MC78L15ABPRA  
MC78L15ABPRA  
MC78L15ABPRA  
MC78L15ACD  
MC78L15ACDR2  
MC78L15ACP  
MC78L15ACPRA  
MC78L15ACPRA  
MC78L15ACPRA  
MC78L18ABP  
MC78L18ACP  
MC78L18ACPRA  
MC78L18ACPRA  
MC78L18ACPRA  
MC78L18ACPRA  
MC78L24ABP  
MC78L24ACP  
MC78L24ACPRA  
MC78L24ACPRA  
MC78L24ACPRA  
MC78M05ABDT  
MC78M05ABDTRK  
MC78M05ABT  
MC78M05ACDT  
MC78M05ACDTRK  
MC78M05ACT  
MC78M05BDT  
MC78M05BDTRK  
MC78M05BT  
MC78M05CDT  
MC78M05CDTRK  
MC78M05CDTRKG  
MC78M05CDTT5  
MC78M05CT  
MC78M06BT  
MC78M06CDT  
MC78M06CDTRK  
MC78M06CT  
MC78M08ABDT  
MC78M08ABDTRK  
MC78M08ABT  
MC78M08ACDT  
MC78M08ACDTRK  
MC78M08ACT  
MC78M08BDT  
MC78M08BDTRK  
MC78M08BT  
MC78M08CDT  
MC78M08CDTRK  
MC78M08CT  
MC78M09BDT  
MC78M09BDTRK



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MC78M09CDT  
MC78M09CDTRK  
MC78M09CDTRKG  
MC78M09CT  
MC78M12ABDT  
MC78M12ABDTRK  
MC78M12ABT  
MC78M12ACDT  
MC78M12ACDTRK  
MC78M12ACT  
MC78M12BDT  
MC78M12BDTRK  
MC78M12BT  
MC78M12CDT  
MC78M12CDTRK  
MC78M12CT  
MC78M15ABDT  
MC78M15ABDTRK  
MC78M15ABT  
MC78M15ACDT  
MC78M15ACDTRK  
MC78M15ACT  
MC78M15BDT  
MC78M15BDTRK  
MC78M15BT  
MC78M15CDT  
MC78M15CDTRK  
MC78M15CT  
MC78M18BT  
MC78M18CDT  
MC78M18CT  
MC78M20BT  
MC78M20CT  
MC78M24BT  
MC78M24CT  
TYA7805CTV  
TYA7809CTV