



Date Created: 3/1/2004
Date Issued: 3/10/2004
PCN # 20040902

DESIGN/PROCESS CHANGE NOTIFICATION -- FINAL

Reference forecast PCN #20031109.

This is to inform you that a design and/or process change will be made to the following product(s). This notification is for your information and concurrence.

If you require data or samples to qualify this change, please contact **Fairchild Semiconductor within 30 days of receipt of this notification.**

If you have any questions concerning this change, please contact:

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PCN Type: Die Revision

Effectivity

Expected 1st Device Shipment Date: 4/12/2004
Earliest Year/Work Week of Changed Product: 0416
(Note: Package marking may differ from this format)

Product ID (Description):

The products affected by this change are listed below in the "Affected FSIDs" section.

Description of Change:

As part of Fairchild Semiconductor's effort to provide value added products in D-pak and I-pak packages and continue to improve customer service, we are planning to increase cell density to allow a smaller die area while meeting all existing specification limits.

Effect of Change:

No change in the static parametric limits of the data sheet. Based upon final product characterization the power dissipation and thermal resistance values could change for some of the device types in the power packages.

FDD6612A/FDU6612A

Key Ratings	From	To
P _D	36 W	36 W*
I _D	30 A	30 A
R _{JC}	3.5 °C/W	3.9 °C/W
E _{AS} /W _{DSS}	90 mJ @ 10A	51 mJ @ 10A

*T_J maximum increased from 150 °C to 175 °C

Key Parameters	From (typical/maximum values)	To (typical/maximum values)
V _{GS(th)}	1.6/3 Volts	2/3 Volts
R _{DS(on)} @ 10 Volts	17/20 mΩ	15/20 mΩ
R _{DS(on)} @ 10 Volts, T _J = 125 °C.	26/36 mΩ	23/33 mΩ
R _{DS(on)} @ 4.5 Volts	24/28 mΩ	20/28 mΩ
Q _G	9/13 nC	6.7/9.4 nC

Qualification:

See reliability report summary below.

Qual/REL Plan Numbers

Additional Qualification Data

Qual Plan Nbr : PD02440017

Title : Qualify Process on PowerTrench Technology

ATTACHMENT 1
RELIABILITY TEST RESULT SUMMARY

TEST	CONDITION	REL #	13001/9 C1	13001/9 C2	13001/9 C1	Remarks
		DEVICE	FDS6694	FDS6694	FDS6694	
		CHIP	23340FLY	23340FLY	23340FLY	
		PKG	SOP-8	SOP-8	SOP-8	
		DIE LOT#	LD91N	LD91P	LD9A9	
		DURATION	# OF FAILURES	# OF FAILURES	# OF FAILURES	
HTRB	150°C, V _r =80% Bvdss	168hrs	0/77	0/77	0/77	
		500hrs	0/77	0/77	0/77	
		1000hrs	0/77	0/77	0/77	
HTGB	150°C, V _{gs} =20V	168hrs	0/77	0/77	0/77	
		500hrs	0/77	0/77	0/77	
		1000hrs	0/77	0/77	0/77	
HTRB	175°C, V _r =80% Bvdss	168hrs	0/77	0/77	0/77	
		500hrs	0/77	0/77	0/77	
		1000hrs	0/77	0/77	0/77	
HTGB	175°C, V _{gs} =20V	168hrs	0/77	0/77	0/120*	*DIE LOT # WT03ZW/W19
		500hrs	0/77	0/77	0/120	
		1000hrs	0/77	0/77	0/120	

ATTACHMENT 2
HISTORICAL RELIABILITY TEST RESULT SUMMARY OF MTP 30/16

TEST	CONDITION	REL #	12062 C1	12062 C2	12063 C1	Remarks
		DEVICE	FDP6688	FDP6688	FDB6662	
		CHIP	NACEA	NACEA	NCCEA	
		PKG	TO-220	TO-220	TO-262	
		DIE LOT#	LD4D4	LD4D5	LD4D7	
		DURATION	# OF FAILURES	# OF FAILURES	# OF FAILURES	
ACLV	12I C, 15 psi					
		96 hrs	0/77	0/77	0/77	
TMCL	-55°C TO 150°C, 15MIN DWELL					
		500cyc	0/77	0/77	0/77	
		1000cyc	0/77	0/77	0/77	
H3TR B	85°C, 85%RH Vr=80% Bvdss	168hrs	0/77	0/77	0/77	
		500hrs	0/77	0/77	0/77	
		1000hrs	0/77	0/77	0/77	
HTGB	150°C, Vgs=16V	168hrs	0/77	0/77	0/77	
		500hrs	0/77	0/77	0/77	
		1000hrs	0/77	0/77	0/77	
HTRB	150°C, Vr=80% Bvdss	168hrs	0/77	0/77	0/77	
		500hrs	0/77	0/77	0/77	
		1000hrs	0/77	0/77	0/77	
PRCL	Tj DELTA 100C	5000cyc	0/77	0/77	0/77	
		10000cyc	0/77	0/77	0/77	

Affected FSIDs
FDD6612A

FDU6612A