

Date Created : 2006/12/05  
Date Issued On : 2007/03/23  
PCN# : Q4065002

DESIGN/PROCESS CHANGE NOTIFICATION -- FINAL

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.**

Updated process quality documentation, such as FMEAs and Control Plans, are available for viewing upon request.

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

Technical Contact:  
Name: Twomey, Dennis  
E-mail: Dennis.Twomey@fairchildsemi.com  
Phone: 207-761-6310

PCN Originator:  
Name: Rulona, Benjo  
E-mail: Benjo.Rulona@fairchildsemi.com  
Phone: 6332-340-0534

Implementation of change:  
Expected 1st Device Shipment Date: 2007/03/25

Earliest Year/Work Week of Changed Product: 0702

Change Type Description: Lid or Base Material Composition

Description of Change (From): See details in Change From table

Description of Change (To): See details in Change To table

Reason for Change : Due to shortage of direct materials, our subcontractor, Taiwan Semiconductor Corporation, located in China is changing the materials used in rectifier products assembled in DO41, DO15 and DO201. Mold compound, lead wire and plating material remain the same. There will be no change in the part ids and product marking. External package dimensions are also the same except for one group of devices in the DO201 package. There is no change to the device specification. Product quality and reliability will be maintained.

Qual/REL Plan Numbers : Q20060449

Qualification :

Representative devices for each of the product group have successfully passed Fairchild's reliability test without valid failures; thus, all results have met internal FSC qualification requirements.

Change From

Material	Change From
Die	Round: EGP10X 47.2 mil EGP20X 96.5 mil EGP30X 96.5 mil  1N4001xGP 48 mil  RGP10x/1N493xGP 48 mil
Die Junction	Open
Solder	80-15-5 Cu/Ag/P
Core Material	Moly Slug

Applicable for EGP30x series in DO201 package only:

Dimension	Change From
Lead diameter	0.96 - 1.06 mm

Change To

Material	Change To
Die	Square: HER10X 60*60mil HER20X 70*70mil HER30X 100*100mil  1N4001xG 50*50mil  FR10xG 50*50mil
Die Junction	Glass passivated
Solder	92.5-5-2.5 Pb/Sn/Ag
Core Material	Lead wire

Applicable for EGP30x series in DO201 package only:

Dimension	Change To
Lead diameter	1.2 - 1.3 mm

## Results/Discussion

Test: (Autoclave)			
Lot	Device	96-HOURS	Failure Code
Q20060449AAACLV	EGP10K	0/77	
Q20060449ABACLV	EGP10K	0/77	
Q20060449ACACLV	EGP10K	0/77	
Q20060449BAACLV	EGP20K	0/77	
Q20060449BBACLV	EGP20K	0/77	
Q20060449BCACLV	EGP20K	0/77	
Q20060449CAACLV	EGP30K	0/77	

Q20060449CBACLV	EGP30K	0/77			
Q20060449CCACLV	EGP30K	0/77			
<b>Test: (High Temperature Reverse Bias)</b>					
Lot	Device	168-HOURS	500-HOURS	1000-HOURS	Failure Code
Q20060449AAHTRB	EGP10K	0/77	0/77		
				0/77	
Q20060449ABHTRB		0/77			
			0/77		
				0/77	
Q20060449ACHTRB		0/77			
			0/77		
				0/77	
Q20060449BAHTRB	EGP20K	0/77			
			0/77		
				0/77	
Q20060449BBHTRB		0/77			
			0/77		
				0/77	
Q20060449BCHTRB		0/77			
			0/77		
				0/77	
Q20060449CAHTRB	EGP30K	0/77			
			0/77		
				0/77	
Q20060449CBHTRB		0/77			
			0/77		
				0/77	
Q20060449CCHTRB		0/77			
			0/77		
				0/77	
<b>Test: (Power Cycle)</b>					
Lot	Device	5000-CYCLES	10000-CYCLES	15000-CYCLES	Failure Code
Q20060449AAPRCL	EGP10K	0/77			
			0/77		
				0/77	
Q20060449ABPRCL		0/77			
			0/77		
				0/77	
Q20060449ACPRCL		0/77			
			0/77		
				0/77	
Q20060449BAPRCL	EGP20K	0/77			
			0/77		
				0/77	
Q20060449BBPRCL		0/77			
			0/77		
				0/77	
Q20060449BCPRCL		0/77			
			0/77		
				0/77	
Q20060449CAPRCL	EGP30K	0/77			
			0/77		
				0/77	
Q20060449CBPRCL		0/77			
			0/77		
				0/77	
Q20060449CCPRCL		0/77			
			0/77		
				0/77	
<b>Test: -65C, 150C (Temperature Cycle)</b>					
Lot	Device	500-CYCLES	1000-CYCLES		Failure Code
Q20060449AATMCL1	EGP10K	0/77			
Q20060449AATMCL1	EGP10K		0/77		
Q20060449ABTMCL1	EGP10K	0/77			
Q20060449ABTMCL1	EGP10K		0/77		
Q20060449ACTMCL1	EGP10K	0/77			

Q20060449ACTMCL1	EGP10K		0/77	
Q20060449BATMCL1	EGP20K	0/77		
Q20060449BATMCL1	EGP20K		0/77	
Q20060449BBTMCL1	EGP20K	0/77		
Q20060449BBTMCL1	EGP20K		0/77	
Q20060449BCTMCL1	EGP20K	0/77		
Q20060449BCTMCL1	EGP20K		0/77	
Q20060449CATMCL1	EGP30K	0/77		
Q20060449CATMCL1	EGP30K		0/77	
Q20060449CBTMCL1	EGP30K	0/77		
Q20060449CBTMCL1	EGP30K		0/77	
Q20060449CCTMCL1	EGP30K	0/77		
Q20060449CCTMCL1	EGP30K		0/77	

**Test: 130C (Highly Accelerated Stress Test)**

Lot	Device	96-HOURS	Failure Code
Q20060449AAHAST1	EGP10K	0/77	
Q20060449ABHAST1	EGP10K	0/77	
Q20060449ACHAST1	EGP10K	0/77	
Q20060449BAHAST1	EGP20K	0/77	
Q20060449BBHAST1	EGP20K	0/77	
Q20060449BCHAST1	EGP20K	0/77	
Q20060449CAHAST1	EGP30K	0/77	
Q20060449CBHAST1	EGP30K	0/77	
Q20060449CCHAST1	EGP30K	0/77	

Product Id Description : Rectifiers in DO41, DO15 and DO201 packages

**Affected FSIDs :**

1N4001GP	1N4001GP_Q	1N4002GP
1N4002GP_Q	1N4003GP	1N4004GP
1N4005GP	1N4005GP_Q	1N4006GP
1N4006GP_Q	1N4007GP	1N4007GP_NL
1N4007GP_Q	1N4933GP	1N4934GP
1N4934GP_Q	1N4935GP	1N4935GP_Q
1N4936GP	1N4937GP	1N4937GP_Q
EGP10A	EGP10B	EGP10C
EGP10C_NL	EGP10D	EGP10D_Q
EGP10F	EGP10G	EGP10J
EGP10J_Q	EGP10K	EGP20A
EGP20B	EGP20C	EGP20C_Q
EGP20D	EGP20F	EGP20F_Q
EGP20G	EGP20G_Q	EGP20J
EGP20K	EGP20KTA	EGP20KTA_NL
EGP20KTA_Q	EGP20K_NL	EGP20K_Q
EGP30A	EGP30A_Q	EGP30B
EGP30B_NL	EGP30B_Q	EGP30C
EGP30D	EGP30F	EGP30F_Q
EGP30G	EGP30G_Q	EGP30J
EGP30J_NL	EGP30K	EGP30K_Q
RGP10A	RGP10B	RGP10D
RGP10G	RGP10G_NL	RGP10J
RGP10K	RGP10K_Q	RGP10M
RGP10M_NL	RGP10M_Q	