ON Semiconductor
Formerly a Division of Motorola

Subject: Motorola PRODUCT AND PROCESS CHANGE NOTIFICATION 4918

TITLE: THYRISTOR PNPN WAFER FAB SITE CHANGE

EFFECTIVE DATE: 31-OCT-99

AFFECTED CHANGE CATEGORIES
  Motorola Fab Site

AFFECTED PRODUCT DIVISIONS
  POWER PRODUCTS DIV

ADDITIONAL RELIABILITY DATA: Available Ref: RP5463
Contact your local Motorola Sales Office.

SAMPLES: Contact Below Ref: RAM140@email.sps.mot.com
Contact your local Motorola Sales Office.

For any questions concerning this notification:
REFERENCE: DAVID CULBERTSON PHONE: 602-244-7424

DISCLAIMER:

MOTOROLA 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 MOTOROLA SALES OFFICE.

GPCN FORMAT: CUSTOMER

DO NOT REPLY TO THIS MESSAGE.

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PRODUCT AND PROCESS CHANGE NOTIFICATION

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ISSUE DATE: 20-Jul-1999 NOTIFICATION #:4918
EFFECTIVE DATE: 31-Oct-1999 ISSUING DIVISION:PHX-PPD

DESCRIPTION AND PURPOSE

In an effort to consolidate wafer processing technologies, Motorola will be moving the qualified PNPN (PUT) Thyristor line from Phoenix, USA BP5 fab, to Motorola's qualified factory in Malaysia (ISMF). This change will not effect device performance or reliability. It is classified as a site move. Electrical characterization indicates performance will not change.

QUALIFICATION PLAN

N/A

RELIABILITY DATA SUMMARY

ENVIRONMENTAL AND LIFE TEST ACCEPTANCE CRITERIA

DEVICE: 2N6028
TRACKING NUMBER: PCKA003C

PARM.	MEAS. CONDITIONS	FAILURE DEFINITION INITIAL-ENDPOINTS MIN	MAX	UNITS	DELTA MAX	LIMITS BASE
VP-VS1	VS=10V, RG=1M OHM (OFFSET VOLTAGE)	0.2	0.6	V	20%	INITIAL
VP-VS2	VS=10V; RG=1M OHM (OFFSET VOLTAGE)	0.2	0.6	V	20%	INITIAL
IP1	VS=10V; RG=1M OHM	--	150	nA	30nA	SPEC WIDTH
IP2	VS=10V; RG=1M OHM	--	1.0	uA	200nA	SPEC WIDTH
IV1	VS=10V; RG=10K OHM	--	25	uA	5uA	SPEC WIDTH
IV2	VS=10V; RG=10K OHM	25	--	uA		SPEC WIDTH
IV3	VS=10V; RG=200 OHM	1.0	--	mA	200uA	SPEC WIDTH
IGAO	VS=40V (CATHODE OPEN)	--	10	nA		SPEC WIDTH
VF	IF=50mA	--	1.5	V	20%	INITIAL
IGKS	VS=40V (ANODE TO CATHODE SHORTED)	--	50	nA	10nA	SPEC WIDTH

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ENVIRONMENTAL TEST SUMMARY

DEVICE: 2N6028
TRACKING NUMBER: PCKA003C

TESTS	TEST CONDITIONS	INTERVAL	SAMPLE SIZE	REJECTS CAT.	LIM.	DEL.
Temp. Cycle	Ta=-65, +150 degC, Air to Air, Dwell >=15 min, transfer =<10 min	LOT A 500	84 84	0	0	0
		1000	83	0	0	0
		LOT B 500	84 84	0	0	0
		1000	84	0	0	0
		LOT C 500	84 84	0	0	0
		1000	84	0	0	0
		CONTROL 500	84 84	0	0	0
		1000	84	0	0	0
Auto-clave	Ta=+121 degC, RH = 100%, P=15 psig	LOT A 96	84 84	0	0	0
		LOT B 96	84 84	0	0	0
		LOT C 96	84 84	0	0	0
		CONTROL 96	84 84	0	0	0
Bond Strength, Ball Shear	Mil-Std-750, Method 2037	N/M	10 bonds	N/A	0	N/A
Bond Strength, Wire Pull	Mil-Std-750, Method 2037	N/M	10 bonds	N/A	0	N/A

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LIFE TEST SUMMARY
DEVICE: 2N6028
TRACKING NUMBER: PCKA003C

TESTS	TEST CONDITIONS ENVIRONMENT	BIAS	INTERVAL	SAMPLE SIZE	REJECTS CAT.	LIM.	DEL.
HTRB	Ta=+100 degC	VGC=32V	LOT A	84			
			168	84	0	0	0
			1008	84	0	0	0
	Ta=+100 degC	VGC=32V	LOT B	84			
			168	84	0	0	0
			1008	84	0	0	0
	Ta=+100 degC	VGC=32V	LOT C	84			
			168	84	0	0	0
			1008	84	0	0	0
	Ta=+100 degC	VGC=32V	CONTROL	84			
			168	84	0	0	0
			1008	84	0	0	0
H3TRB	Ta=+85 degC, RH=85%	VGC=32V	LOT A	84			
			168	84	0	0	0
			1008	84	0	0	0
	Ta=+85 degC, RH=85%	VGC=32V	LOT B	84			
			168	84	0	0	0
			1008	84	0	0	0
	Ta=+85 degC, RH=85%	VGC=32V	LOT C	84			
			168	84	0	0	0
			1008	84	0	0	0
	Ta=+85 degC,	VGC=32V	CONTROL	84			
			168	84	0	0	0
			1008	83	0	0	0
HTSL	Ta=+150 degC	N/A	LOT A 504	84	0	0	0
			1008	84	0	0	0
			LOT B 504	84	0	0	0
			1008	84	0	0	0
	Ta=+150 degC	N/A	LOT C 504	84	0	0	0
			1008	84	0	0	0
			CONTROL 504	84	0	0	0
Parm. Verif.	+ and - temp, try-temp: read and record per customer spec.	N/M	-40 degC +25 degC +125 degC	100	0	0	N/A
ESD	Human Body Model and Machine Models 1 & 2 HBM=500V, MM=200V	N/A	N/M	72	0	0	N/A

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REJECT SUMMARY

ENVIRONMENTAL: No Fab related failures.

LIFE TEST: No Fab related failures.

CONCLUSION: Qualification for 2N6028 has passed.

ELECTRICAL CHARACTERISTIC SUMMARY

Electrical characterization indicates parametric distribution unchanged, and Motorola does not anticipate significant change. Characterization data available upon request.

CHANGED PART IDENTIFICATION

No physical changes to parts. Parts will be marked with Date Code 940 or later.

FILE FORMAT: ASCII TEXT
FONT - Courier
SIZE - 12 Point
LINE - 70 characters/line
PAGE - 55 lines/page
PAGEBREAK CHARACTER - ^L (Control L)

AFFECTED DEVICE LIST (WITHOUT SPECIALS)

2N6027 , 2N6027RL1 , 2N6027RLRA , 2N6028
2N6028RLRA , 2N6028RLRM , 2N6028RLRP