

ON Semiconductor
Formerly a Division of Motorola



Subject: Motorola PRODUCT AND PROCESS CHANGE NOTIFICATION 4362

TITLE: TRANSFER OF DO35/41 ZENER ASSEMBLY/TEST TO TAK CHEONG

EFFECTIVE DATE: 19-MAR-99

AFFECTED CHANGE CATEGORIES

Subcontractor Test Site

Subcontractor Assembly Site

AFFECTED PRODUCT DIVISIONS

OPTO SIGNAL DIV

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

Ref: RM8160

SAMPLES: Contact Below
Contact your local Motorola Sales Office.

Ref: R41767@email.sps.mot.com

For any questions concerning this notification:

REFERENCE: MARK GABRIELLE

PHONE: 602-244-3115

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.

PRODUCT AND PROCESS CHANGE NOTIFICATION

ISSUE DATE: 18-Jan-1999

NOTIFICATION #:4362

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ISSUING DIVISION:PHX-OSPD

DESCRIPTION AND PURPOSE

Qualify Tak Cheong Electronics to assemble and test all active Motorola's D035 and D041 packaged zener devices. This is a site change only, Tak Cheong is in China, current site is MKL. There is no change in manufacturing process, quality system, piece parts, sub-materials or any equipment.

Purpose of Change:
Addition of capacity

QUALIFICATION PLAN

Same as Rel Data

RELIABILITY DATA SUMMARY

RELIABILITY TESTS AND RESULTS:

Performed on Device: 1N5231B

TEST	CONDITION	DURATION	REJ/SIZE
HTRB	Ta=150DegC, VR=3.88V	0 HRS	0/231
		168 HRS	0/231
		504 HRS	0/231
		1008 HRS	
H3TRB	Ta=85DegC, 85%RH VR=3.88V	0 HRS	0/231
		168 HRS	0/231
		504 HRS	0/231
		1008 HRS	
HTSL	Ta=200DegC	0 HRS	0/231
		168 HRS	0/231
		504 HRS	0/231
		1008 HRS	
TEMP CYC	-65DegC to +150DegC	0 CYC	0/231
		100 CYC	0/231
		500 CYC	0/231
		1000 CYC	
TEMP CYC	-40DegC to +125DegC	0 CYC	0/231
		100 CYC	0/231
		500 CYC	0/231
		1000 CYC	
AUTOCLAVE	Ta=121DegC/RH=100%/ P=15 psig	0 HRS	0/231
		96 HRS	0/231
IOL	Ton=Toff=2min	0 CYC	0/231
		2000 CYC	0/231
		7500 CYC	0/231

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Performed on Device: 1N4733A

TEST	CONDITION	DURATION	REJ/SIZE
HTRB	Ta=150DegC, VR=3.88V	0 HRS	0/231
		168 HRS	0/231
		504 HRS	0/231
		1008 HRS	
H3TRB	Ta=85DegC, 85%RH VR=3.88V	0 HRS	0/231
		168 HRS	0/231
		504 HRS	0/231
		1008 HRS	
HTSL	Ta=200DegC	0 HRS	0/231
		168 HRS	0/231
		504 HRS	0/231
		1008 HRS	
TEMP CYC	-65DegC TO +150DegC	0 CYC	0/231
		100 CYC	0/231
		500 CYC	0/231
		1000 CYC	
TEMP CYC	-40DegC to +125DegC	0 CYC	0/231
		100 CYC	0/231
		500 CYC	0/231
		1000 CYC	
AUTOCLAVE	Ta=121DegC/RH=100% P=15 psig	0 HRS	0/231
		96 HRS	0/231
IOL	Ton=Toff=2min	0 CYC	0/231
		2000 CYC	0/231
		7500 CYC	0/231
		15000 CYC	

Final reliability report will be available February 1, 1999.

ELECTRICAL CHARACTERISTIC SUMMARY

		D035			1N5231B	
	Para.	Vz	Zzt	Zzk	Ir	Vf
OLD	Mean	5.096	1.491	439.3	7.797	0.927
PARTS (MKL)	SD	0.073	0.322	205.6	4.279	0.017
	Min	4.965	1.115	25.2	2.000	0.914
	Max	5.309	3.300	796.0	21.600	1.040
	Unit	V	ohms	ohms	nA	V
New	Mean	5.063	1.404	613.7	11.517	0.928
	SD	0.042	0.253	131.2	4.428	0.020

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Parts	Min	4.980	0.980	140.0	4.000	0.915
(Tak Cheong)	Max	5.163	3.005	842.4	23.600	1.090

D041

1N4733A

		Vz	Zzt	Zzk	Ir	Vf
Old	Mean	5.108	0.793	39.23	2.230	0.913
Parts	SD	0.079	0.232	33.95	0.689	0.010
(MKL)	Min	4.969	0.514	6.20	1.400	0.904
	Max	5.244	1.296	122.50	4.880	0.954

		V	ohms	ohms	nA	V
New	Mean	5.041	0.843	40.09	2.066	0.922
Parts	SD	0.062	0.088	22.65	0.482	0.014
(Tak Cheong)	Min	4.951	0.680	10.60	1.360	0.913
	Max	5.159	1.512	93.50	4.520	1.122

CHANGED PART IDENTIFICATION

New parts will have site code "2".

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)

1N4370ARL	,	1N4371A	,	1N4371ARL	,	1N4371ATA
1N4372A	,	1N4372ARL	,	1N4372ATA	,	1N4626RL
1N4678	,	1N4678RL	,	1N4679RL	,	1N4680
1N4681	,	1N4681CRL	,	1N4681RL	,	1N4682
1N4682RL	,	1N4683	,	1N4683CRL	,	1N4683RL
1N4684	,	1N4684RL	,	1N4685	,	1N4685RA1
1N4685RL	,	1N4686	,	1N4686RL	,	1N4687
1N4687CRL	,	1N4687RL	,	1N4688	,	1N4688RL
1N4689	,	1N4689CRL	,	1N4689RL	,	1N4689TA
1N4690	,	1N4690RL	,	1N4691	,	1N4691CRA1
1N4691RL	,	1N4692	,	1N4692RL	,	1N4693
1N4693RL	,	1N4694	,	1N4694RL	,	1N4695
1N4695RL	,	1N4696	,	1N4696CRL	,	1N4696RL
1N4697	,	1N4697RL	,	1N4698	,	1N4698RL
1N4699	,	1N4699CRL	,	1N4699D	,	1N4699RL
1N4700	,	1N4700RL	,	1N4701	,	1N4701RL
1N4702	,	1N4702RL	,	1N4702TA	,	1N4702TA2
1N4703RL	,	1N4704RL	,	1N4705	,	1N4705RL
1N4707CRL	,	1N4707RL	,	1N4708RL	,	1N4711RL
1N4713	,	1N4728A	,	1N4728ARL	,	1N4728ATA
1N4729A	,	1N4729ARL	,	1N4730A	,	1N4730ARL
1N4730ATA	,	1N4731A	,	1N4731ARL	,	1N4732A
1N4732ARL	,	1N4732ATA	,	1N4733A	,	1N4733ARL
1N4733ATA	,	1N4733ATA2	,	1N4733CRL	,	1N4733DRL
1N4734A	,	1N4734ARL	,	1N4734C	,	1N4734DRL
1N4735A	,	1N4735ARL	,	1N4735ATA	,	1N4736A
1N4736ARL	,	1N4736ATA	,	1N4737A	,	1N4737ARL
1N4737ATA	,	1N4737CRL	,	1N4737D	,	1N4738A
1N4738ARL	,	1N4738ATA	,	1N4739A	,	1N4739ARL
1N4739ATA	,	1N4739C	,	1N4740A	,	1N4740ARL
1N4740ATA	,	1N4740C	,	1N4740CRL	,	1N4740D
1N4741A	,	1N4741ARL	,	1N4741ATA	,	1N4742A
1N4742ARL	,	1N4742ATA	,	1N4742CRL	,	1N4742D
1N4743A	,	1N4743ARL	,	1N4743ATA	,	1N4743CRL
1N4743DRL	,	1N4744A	,	1N4744ARL	,	1N4744ATA
1N4744C	,	1N4744D	,	1N4745A	,	1N4745ARL
1N4745ATA	,	1N4745CRL	,	1N4746A	,	1N4746ARL
1N4746ATA	,	1N4747A	,	1N4747ARL	,	1N4747ATA
1N4748A	,	1N4748ARL	,	1N4748ATA	,	1N4748C
1N4749A	,	1N4749ARL	,	1N4749ATA	,	1N4750A
1N4750ARL	,	1N4750ATA	,	1N4751A	,	1N4751ARL
1N4751ATA	,	1N4752A	,	1N4752ARL	,	1N4753A
1N4753ARL	,	1N4753ATA	,	1N4754A	,	1N4754ARL
1N4754ATA	,	1N4755A	,	1N4755ARL	,	1N4755ATA
1N4756A	,	1N4756ARL	,	1N4757A	,	1N4757ARL
1N4758A	,	1N4758ARL	,	1N4759A	,	1N4759ARL
1N4760A	,	1N4760ARL	,	1N4760ATA	,	1N4761A
1N4761ARL	,	1N4762A	,	1N4762ARL	,	1N4763A
1N4763ARL	,	1N4764A	,	1N4764ARL	,	1N5221B
1N5221BRL	,	1N5222B	,	1N5222BRL	,	1N5223B
1N5223BRL	,	1N5223BTA	,	1N5223BTA2	,	1N5224B
1N5224BRL	,	1N5225B	,	1N5225BRL	,	1N5226B
1N5226BRL	,	1N5226BTA	,	1N5226C	,	1N5226D
1N5227B	,	1N5227BRL	,	1N5227BTA	,	1N5228B
1N5228BRL	,	1N5228BTA	,	1N5228BTA2	,	1N5229B
1N5229BRL	,	1N5230B	,	1N5230BRL	,	1N5230BTA
1N5230BTA2	,	1N5230CRL	,	1N5231B	,	1N5231BRA1
1N5231BRL	,	1N5231BRR2	,	1N5231BTA	,	1N5231CRL

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1N5231D	, 1N5231DRL	, 1N5232B	, 1N5232BRL
1N5232BTA	, 1N5232CRL	, 1N5232DRL	, 1N5233B
1N5233BRL	, 1N5233D	, 1N5234B	, 1N5234BRL
1N5234BRR1	, 1N5234CRL	, 1N5234DRL	, 1N5235B
1N5235BRL	, 1N5235BTA	, 1N5236B	, 1N5236BRL
1N5236BTA2	, 1N5236C	, 1N5236CRL	, 1N5236D
1N5236DRL	, 1N5237B	, 1N5237BRL	, 1N5237BRR1
1N5237BTA	, 1N5237C	, 1N5238B	, 1N5238BRL
1N5239B	, 1N5239BRL	, 1N5239BTA	, 1N5239C
1N5239CRL	, 1N5239D	, 1N5239DRL	, 1N5240B
1N5240BRL	, 1N5240BTA	, 1N5240CRL	, 1N5240DRL
1N5241B	, 1N5241BRL	, 1N5241CRL	, 1N5242B
1N5242BRL	, 1N5242BTA	, 1N5243B	, 1N5243BRL
1N5243BTA	, 1N5244B	, 1N5244BRA2	, 1N5244BRL
1N5245B	, 1N5245BRL	, 1N5245BTA	, 1N5245CRL
1N5246B	, 1N5246BRA1	, 1N5246BRL	, 1N5246CRL
1N5246DRL	, 1N5247B	, 1N5247BRL	, 1N5247BTA
1N5248B	, 1N5248BRL	, 1N5248BTA	, 1N5248DRL
1N5249B	, 1N5249BRL	, 1N5250B	, 1N5250BRL
1N5251B	, 1N5251BRL	, 1N5252B	, 1N5252BRL
1N5252BRL2	, 1N5252BTA	, 1N5253B	, 1N5253BRL
1N5253BTA	, 1N5254B	, 1N5254BRL	, 1N5254BTA
1N5254CRL	, 1N5255B	, 1N5255BRL	, 1N5255BTA
1N5256B	, 1N5256BRL	, 1N5256BTA	, 1N5256CRL
1N5257B	, 1N5257BRL	, 1N5257BTA	, 1N5258B
1N5258BRL	, 1N5258BTA	, 1N5258CRL	, 1N5259B
1N5259BRL	, 1N5259BTA	, 1N5259BTA2	, 1N5259CRL
1N5260B	, 1N5260BRL	, 1N5260BTA	, 1N5261B
1N5261BRL	, 1N5261BTA	, 1N5262B	, 1N5262BRL
1N5262BTA	, 1N5263B	, 1N5263BRL	, 1N5263BTA
1N5264B	, 1N5264BRL	, 1N5264BTA	, 1N5265B
1N5265BRL	, 1N5266B	, 1N5266BRL	, 1N5267B
1N5267BRL	, 1N5268B	, 1N5269BRL	, 1N5270B
1N5270BRL	, 1N5270CRL	, 1N5271B	, 1N5271BRL
1N5271DRL	, 1N5272B	, 1N5272BRL	, 1N5273BRL
1N5273CRL	, 1N5274B	, 1N5274BRL	, 1N5275B
1N5275BRL	, 1N5275CRL	, 1N5275DRL	, 1N5276BRL
1N5278B	, 1N5278BRL	, 1N5279B	, 1N5279BRL
1N5280BRL	, 1N5281B	, 1N5281BRL	, 1N5985BRL
1N5987B	, 1N5988B	, 1N5988BRL	, 1N5989BRL
1N5990B	, 1N5990BRL	, 1N5990CRL	, 1N5991B
1N5991BRL	, 1N5992B	, 1N5992BRL	, 1N5992DRL
1N5993B	, 1N5993BRL	, 1N5993D	, 1N5993DRL
1N5994B	, 1N5994BRL	, 1N5995B	, 1N5995BRL
1N5995CRL	, 1N5996B	, 1N5996BRL	, 1N5997BRL
1N5998B	, 1N5998BRL	, 1N5999BRL	, 1N5999D
1N6000B	, 1N6001BRL	, 1N6002B	, 1N6004B
1N6004BRL	, 1N6007BRL	, 1N6025CRL	, 1N746A
1N746ARL	, 1N746ATA	, 1N747A	, 1N747ARL
1N747ATA	, 1N748A	, 1N748ARL	, 1N749A
1N749ARL	, 1N749ATA	, 1N749DRL	, 1N750A

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1N750ARL	, 1N750ATA	, 1N750D	, 1N750DRL
1N751A	, 1N751ARL	, 1N751ATA	, 1N751CRL
1N751D	, 1N751DRL	, 1N752A	, 1N752ARL
1N752ATA	, 1N752C	, 1N752CRL	, 1N752DRL
1N753A	, 1N753ARL	, 1N753ATA	, 1N753DRL
1N754A	, 1N754ARL	, 1N754ATA	, 1N755A
1N755ARL	, 1N755ATA	, 1N756A	, 1N756ARL
1N756ATA	, 1N756D	, 1N757A	, 1N757ARL
1N757ATA	, 1N758A	, 1N758ARL	, 1N758ATA
1N759A	, 1N759ARL	, 1N759ATA	, 1N957B
1N958B	, 1N959B	, 1N960B	, 1N961B
1N961BRL	, 1N961BRR1	, 1N961CRL	, 1N962B
1N962BRL	, 1N962BTA	, 1N963B	, 1N963BRL
1N963BRR1	, 1N963BTA	, 1N964B	, 1N964BRL
1N964BTA	, 1N965B	, 1N965BRL	, 1N965BTA
1N966B	, 1N966BRL	, 1N966BTA	, 1N967B
1N967BRL	, 1N967BTA	, 1N968B	, 1N968BRL
1N969BRL	, 1N970BRL	, 1N971BRL	, 1N971BTA
1N972BRL	, 1N972BTA	, 1N973BRL	, 1N974BRL
1N974BTA	, 1N975BRL	, 1N978B	, 1N979BRL
1N982BRL	, 1N986BRL	, 1N989B	, 1N990BRL
1N991BRL	, BZX55B15RL	, BZX55B33RL	, BZX55B5V1RL
BZX55B5V6RL	, BZX55B9V1RL	, BZX55C10RL	, BZX55C12RL
BZX55C15RL	, BZX55C2V7RL	, BZX55C3V0RL	, BZX55C3V3RL
BZX55C3V6RL	, BZX55C3V9RL	, BZX55C4V3RL	, BZX55C4V7RL
BZX55C5V1RL	, BZX55C5V6RL	, BZX55C6V2RL	, BZX55C6V8RL
BZX55C7V5RL	, BZX55C8V2RL	, BZX55C9V1RL	, BZX79B6V2RL
BZX79B6V8RL	, BZX79C10RL	, BZX79C12RL	, BZX79C15RL
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BZX79C33RL	, BZX79C3V0RL	, BZX79C3V3RL	, BZX79C3V6RL
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MZ4614	, MZ4614RL	, MZ4615	, MZ4615RL
MZ4616	, MZ4617RL	, MZ4618	, MZ4619
MZ4619RL	, MZ4620	, MZ4620RL	, MZ4622RL
MZ4623	, MZ4623RL	, MZ4624	, MZ4625
MZ4625RL	, MZ4626	, MZ4626RL	, MZ4627
MZ4627RL	, SZ2367-1RR2	, SZG30675-16RL	, SZG40175RL