u·p·t·o·d·a·t·e Newsletter

21.08.2015

Produktänderung
Zusätzlicher Produktionsstandort für EPCOS Übertrager

Für die im Anhang gelisteten EPCOS Übertrager wird bei einem Unterauftragnehmer in Mianyang, China (Sichuan) ein zusätzlicher Produktionsstandort eingeführt. Die Übertrager werden derzeit in Hongqi, China, gefertigt. Um die Herkunft der Produkte kenntlich zu machen, wird die Beschriftung der Übertrager um einen Code der Fertigungsstätte erweitert. Die Auslieferung der in Mianyang gefertigten Bauelemente beginnt am 1. Dezember 2015.

Die spezifizierten elektrischen und mechanischen Eigenschaften der Produkte werden nicht beeinflusst. Typenvertreter wurden gemäß IEC 62211 qualifiziert. Details können den beiliegenden Qualifikationsberichten entnommen werden.

Datum der Einführung: 1. Dezember 2015

Anlagen PCN (ID No. MAG-386310715)
Annex 1: Liste betroffener Produkte
Annex 2: Qualifikationsberichte gemäß IEC 62211

Kontakt Uwe Ernst, MAG TF T PMD, München

Kunden wenden sich bei Fragen bitte direkt an ihren Ansprechpartner im Vertrieb.

Product / Process Change Notification

1. ID No.: MAG-386310715		**2. Date of announcement:** Aug. 21, 2015	
3. Product / product group: Transformer / Übertrager	**Old ordering code:** See attached list / Siehe Anhang	**New ordering code:** No Change / Keine Änderung	**Customer part number:**

4. Description of change:

An additional production location at a subcontractor in Mianyang, China (Sichuan) is being introduced for the EPCOS transformers listed in the annex. These transformers are presently manufactured in Hongqi, China. In order to identify the source of the products, the marking of the listed transformers will be extended with a factory identification code. Shipments of the components manufactured in Mianyang are scheduled to begin December 1, 2015. /

Für die im Anhang gelisteten EPCOS Übertrager wird bei einem Unterauftragnehmer in Mianyang, China (Sichuan) ein zusätzlicher Produktionsstandort eingeführt. Die Übertrager werden derzeit in Hongqi, China, gefertigt. Um die Herkunft der Produkte kenntlich zu machen, wird die Beschriftung der Übertrager um einen Code der Fertigungsstätte erweitert. Die Auslieferung der in Mianyang gefertigten Bauelemente beginnt am 1. Dezember 2015.

5. Effect on the product or for the customer (benefit, quality, specification, lead time):

There is no effect on the specified electrical and mechanical parameters of the products. /

Die spezifizierten elektrischen und mechanischen Eigenschaften der Produkte werden nicht beeinflusst.

6. Quality assurance measures / risk assessment:

Type representatives were qualified according to IEC 62211. Details can be found in the enclosed qualification reports. /

Typenvertreter wurden gemäß IEC 62211 qualifiziert. Details können den beiliegenden Qualifikationsberichten entnommen werden.

7. Scheduled date of change: Dec. 1, 2015 / after customer approval

8. Estimated date of first delivery of changed product: Dec. 1, 2015

If EPCOS does not receive notification to the contrary within a period of 10 weeks, EPCOS assumes that the customer agrees to the change. For an interim period we cannot rule out that old as well as new products will be shipped.

9. Identification of changed product (first date code / marking):

Identification by factory code. /

Identifikation durch Fertigungsstättencode.

Quality Management	Signature
Name Wolfgang Woitsch, 2015-07-31	signed Woitsch
Product Marketing	
Name Uwe Ernst	Signature
Tel. +49 89 54020 2741	signed Uwe Ernst
Email uwe.ernst@epcos.com	

10. Customer feedback

Customer acknowledgement	Signature

Annex to UPtoDATE 150821IN1 of August 21, 2015 /
Additional production location for EPCOS transformers

Affected products

Ordering code		
B78307P8910A005	B78310P9197A005	B78313P9414A005
B78307P8958A005	B78310P9456A005	B78313P9524A005
B78308P2257A005	B78310P9462A005	B78315P9347A005
B78308P2258A005	B78310P9544A005	B78328P9586A005
B78308P2269A005	B78310P9603A005	B78337P8959A005
B78308P7787A005	B78311P7758A005	B78381P9606A005
B78308P8692A005	B78311P7789A005	B78384P7961A005
B78308P8842A005	B78311P8416A005	B78384P9607A005
B78308P9325A005	B78311P8544A007	B78386P1735A002
B78308P9622A005	B78311P8641A005	B78386P1738A002
B78308P9657A007	B78311P8667A007	B78386P1789A002
B78310P2178A005	B78311P8887A005	B78387P7346A005
B78310P2209A005	B78311P8919A005	B78432P8122A005
B78310P2259A005	B78311P8967A007	B78438P8191A005
B78310P2270A004	B78311P8971A007	B78450P2194A005
B78310P2278A005	B78311P9076A005	B78450P2195A005
B78310P7732A002	B78311P9155A005	B78452P9636A005
B78310P7962A005	B78311P9190A007	B78510P6679A002
B78310P8078A002	B78311P9210A007	B78512P7018A005
B78310P8589A005	B78313P1466A005	B78512P9234A005
B78310P8821A002	B78313P1467A005	B78513P2260A005
B78310P8824A005	B78313P8175A005	B82891S1100A001
B78310P8838A005	B78313P9075A005	B82891S1400A002
B78310P9005A005	B78313P9138A005	B82891S5160A001
B78310P9187A005	B78313P9211A005	

Product Qualification Report of RM6 PTH Transformer (125°C Celsius)

Project Number:Y330;OrderingCode:B78386P1738A002

Tests performed by EPCOS HO

Test	Test condition	No.of parts	Test criteria (acceptance criteria is zero failure)	Evaluation after test[1] (Quantity of failes parts)	
				electrical	mechanical
preconditioning[2]	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s)	148 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(W1 to W2 ,W3) 500Vac HV:(W2 to W3) 500Vac	0	0
Storage at High Temparature (According to IEC 60068-2-2 Part 1 test Ba)	2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s) duration:1000h;unloaded;ambient temperature:Tmax=125°C additional treatment: 1-2h at ambient temperature Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(W1 to W2 ,W3) 500Vac HV:(W2 to W3) 500Vac	0	0
Temperature Shock (According to IEC 60068-2-14 Part 1 test Na)	2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s) -40°C/Tmax=125°C,100 cycles transition time:<10s dwell time:30min Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(W1 to W2 ,W3) 500Vac HV:(W2 to W3) 500Vac	0	0
Terminal strength, (SMT=n.a.) EN 60068-2-21, Test Ua1	Test Leaded device lead integrity only. Condtion A(910g), duration 10s ± 1s(min 20 pins)	10 pcs	Pin pull force and continuity	0	0
	Test Leaded device lead integrity only. Condtion C(1,13kg).	10 pcs		0	0
Optical Inspection[3] (Accroding to MIL-STD-883, Method 2009)	Legible marking, good workmanship, no visual damage Microscope 10x	148 pcs	Visual inspection (acc. Data sheet) no visible damages	NA	0
Resistance to Soldering Heat(PTH) (Accroding to IEC 60068-2-58)	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s)	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(W1 to W2 ,W3) 500Vac HV:(W2 to W3) 500Vac	0	0
Solderability (According to IEC60068-2-20 /68-2-58)	dip & look test after aging: 4h / +155°C dry heat; (+245 ±3)°C, (3 ±0.3) sec, solder: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)%	16 pcs	Acc.Standard (Wetability>95%); criteria in IEC68-2-58/68-2-20	0	0
Dwetting test (According to IEC60068-2-20 /68-2-58)	dip & look test (+260±5)°C, (5 ±0.5) sec, Dipping 2 cycles,procedure and requirments according IEC68-2-20/68-2-58	16 pcs	Acc.Standard (de-wetted are in max.5%); criter for area in IEC68-2-58/68-2-20	0	0

Remarks:

[1] according test criteria

[2] preconditioning:2x dip soldering for all group test excepted parts for solderability &Dwetting test.

[3] optical inspection will be done after each single test in its own group

HO MAG T PD
Taojun Li
Aug.29.2014

Product Qualification Report of EF20 PTH 0.58mH transformer (125°C Celsius)

Project Number:T5671LF;OrderingCode:B78311P9210A007

Tests performed by EPCOS HO

Test	Test condition	No.of parts	Test criteria (acceptance criteria is zero failure)	Evaluation after test[1] (Quantity of failes parts)	
				electrical	mechanical
preconditioning[2]	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2 x dip soldering (+270°C+/-3; t=10s +/-1s;dip time 25+/-6 mm/s)	148 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:W1(W1a &W1b),W2 to W3 3000Vac HV:(Windings to Core) 1000Vac	0	0
Storage at High Temparature (According to IEC 60068-2-2 Part 1 test Ba)	2 x dip soldering (+270°C+/-3; t=10s +/-1s;dip time 25+/-6 mm/s) duration:1000h;unloaded;ambient temperature:Tmax=125°C additional treatment: 1-2h at ambient temperature Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:W1(W1a & W1b),W2 to W3 3000Vac HV:(Windings to Core) 1000Vac	0	0
Temperature Shock (According to IEC 60068-2-14 Part 1 test Na)	2 x dip soldering (+270°C+/-3; t=10s +/-1s;dip time 25+/-6 mm/s) -40°C/Tmax=125°C,100 cycles transition time:<10s dwell time:30min Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:W1(W1a & W1b),W2 to W3 3000Vac HV:(Windings to Core) 1000Vac	0	0
Terminal strength, (SMT=n.a.) (Accroding to EN 60068-2-21, Test Ua1)	Test Leaded device lead integrity only. Condtion A(910g), duration 10s ± 1s(min 20 pins)	10 pcs	Pin pull force and continuity	0	0
	Test Leaded device lead integrity only. Condtion C(1,13kg).	10 pcs		0	0
Optical Inspection[3] (Accroding to MIL-STD-883, Method 2009)	Legible marking, good workmanship, no visual damage Microscope 10x	148 pcs	Visual inspection (acc. Data sheet) no visible damages	NA	0
Resistance to Soldering Heat (PTH) (Accroding to IEC 60068-2-58)	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2 x dip soldering (+270°C+/-3; t=10s +/-1s;dip time 25+/-6 mm/s)	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:W1(W1a & W1b),W2 to W3 3000Vac HV:(Windings to Core) 1000Vac	0	0
Solderability (According to DIN IEC 60068-2-20 /68-2-58) test Ta method 1 (ageing method 3)	dip & look test after aging: 4h / +155°C dry heat; (+245 ±3)°C, (3 ±0.3) sec, solder: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)%	16 pcs	Acc.Standard (Wetability>95%); criteria in IEC68-2-58/68-2-20	0	0
Dwetting test (According to IEC60068-2-20 /68-2-58) dip and look test.	dip & look test (+260±5)°C, (5 ±0.5) sec, Dipping 2 cycles,procedure and requirments according IEC68-2-20/68-2-58	16 pcs	Acc.Standard (de-wetted are in max.5%); criter for area in IEC68-2-58/68-2-20	0	0

Remarks:

[1] according test criteria

[2] preconditioning:2x dip soldering for all group test excepted parts for solderability &Dwetting test.

[3] optical inspection will be done after each single test in its own group

Product Qualification Report of EF20 PTH 1.2mH Transformer Choke(125°C Celsius)

Project Number:T5838 ;OrderingCode:B78311P8919A005

Tests performed by EPCOS HO

Test	Test condition	No.of parts	Test criteria (acceptance criteria is zero failure)	Evaluation after test[1] (Quantity of failes parts)	
				electrical	mechanical
Preconditioning[2]	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 1x Wave profile (+270°C+/-3; t=10s +/-1s)	148 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(Pin7 to Pin2;6;12) 3000Vac HV:(Pin2 to Pin;6;12) 500Vac HV:(Pin6 to Pin;12) 500Vac	0	0
Storage at High Temparature (According to IEC 60068-2-2 Test Bb/Bd)	1x Wave profile (+270°C+/-3; t=10s +/-1s) duration:1000h;unloaded;ambient temperature:Tmax=125°C additional treatment: 1-2h at ambient temperature Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(Pin7 to Pin2;6;12) 3000Vac HV:(Pin2 to Pin;6;12) 500Vac HV:(Pin6 to Pin;12) 500Vac	0	0
Temperature Cycling (According to IEC 60068-2-14 Test Na)	1x Wave profile (+270°C+/-3; t=10s +/-1s) -40°C/Tmax=125°C,100 cycles transition time:<10s dwell time:30min Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(Pin7 to Pin2;6;12) 3000Vac HV:(Pin2 to Pin;6;12) 500Vac HV:(Pin6 to Pin;12) 500Vac	0	0
Terminal strength (Accrding to EN 60068-2-21 Test Ua 1 Table 2)	Test Leaded device lead integrity only. Condtion A(910g),	10 pcs	Pin pull force and continuity	0	0
	Test Leaded device lead integrity only. Condtion C(1,13kg).	10 pcs		0	0
Optical Inspection[3] (Accroding to MIL-STD-883, Method 2009)	Legible marking, good workmanship, no visual damage Microscope 10x	148 pcs	Visual inspection (acc. Data sheet) no visible damages	NA	0
Resistance to Soldering Heat (According to IEC 60068-2-58)	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 1x Wave profile (+270°C+/-3; t=10s +/-1s)	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(Pin7 to Pin2;6;12) 3000Vac HV:(Pin2 to Pin;6;12) 500Vac HV:(Pin6 to Pin;12) 500Vac	0	0
Solderability (Accrding to EN68-2-58/68-2-20 dip and look test)	dip & look test after aging: 4h / +155°C dry heat; (+245 ±3)°C, (3 ±0.3) sec, solder: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)%	16 pcs	Acc.Standard (Wetability>95%); criteria in IEC68-2-58/68-2-20	0	0
Dewetting (Accrding to EN68-2-58/68-2-20 dip and look test)	dip & look test (+260±5)°C, (5 ±0.5) sec, Dipping 1 cycles,procedure and requirments according IEC68-2-20/68-2-58	16 pcs	Acc.Standard (de-wetted are in max.5%); criter for area in IEC68-2-58/68-2-20	0	0

Remarks:
[1] according test criteria
[2] preconditioning:1xWaveprofiles for all group test excepted parts for solderability &Dwetting test.
[3] optical inspection will be done after each single test in its own group

HO MAG T PD
Taojun Li
July.29.2015

Product Qualification Report of ETD29 3.0mH PTH Transformer (125°C Celsius)

Project Number:T1734;OrderingCode:B78432P8122A005

Tests performed by EPCOS HO

Test	Test condition	No.of parts	Test criteria (acceptance criteria is zero failure)	Evaluation after test[1] (Quantity of failes parts)	
				electrical	mechanical
preconditioning[2]	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s)	148 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(Pin1 to pin5); (pin9 to pin14) 2900Vdc HV:(Pin1,5 to pin9,14); (windings to core) 6000Vac	0	0
Storage at High Temparature (According to IEC 60068-2-2 Part 1 test Ba)	2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s) duration:1000h;unloaded;ambient temperature:Tmax=125°C additional treatment: 1-2h at ambient temperature Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(Pin1 to pin5); (pin9 to pin14) 2900Vdc HV:(Pin1,5 to pin9,14); (windings to core) 6000Vac	0	0
Temperature Shock (According to IEC 60068-2-14 Part 1 test Na)	2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s) -40°C/Tmax=125°C,100 cycles transition time:<10s dwell time:30min Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(Pin1 to pin5); (pin9 to pin14) 2900Vdc HV:(Pin1,5 to pin9,14); (windings to core) 6000Vac	0	0
Terminal strength, (SMT=n.a.) EN 60068-2-21, Test Ua1	Test Leaded device lead integrity only. Condtion A(910g), duration 10s ± 1s(min 20 pins)	10 pcs	Pin pull force and continuity	0	0
	Test Leaded device lead integrity only. Condtion C(1,13kg).	10 pcs		0	0
Optical Inspection[3] (Accroding to MIL-STD-883, Method 2009)	Legible marking, good workmanship, no visual damage Microscope 10x	148 pcs	Visual inspection (acc. Data sheet) no visible damages	NA	0
Resistance to Soldering Heat(PTH) (Accroding to IEC 60068-2-58)	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s)	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(Pin1 to pin5); (pin9 to pin14) 2900Vdc HV:(Pin1,5 to pin9,14); (windings to core) 6000Vac	0	0
Solderability (According to IEC60068-2-20 /68-2-58)	dip & look test after aging: 4h / +155°C dry heat; (+245 ±3)°C, (3 ±0.3) sec, solder: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)%	16 pcs	Acc.Standard (Wetability>95%); criteria in IEC68-2-58/68-2-20	0	0
Dwetting test (According to IEC60068-2-20 /68-2-58)	dip & look test (+260±5)°C, (5 ±0.5) sec, Dipping 2 cycles,procedure and requirments according IEC68-2-20/68-2-58	16 pcs	Acc.Standard (de-wetted are in max.5%); criter for area in IEC68-2-58/68-2-20	0	0

Remarks:

[1] according test criteria

[2] preconditioning:2x dip soldering for all group test excepted parts for solderability &Dwetting test.

[3] optical inspection will be done after each single test in its own group

HO MAG T PD
Taojun Li
Aug.29.2014

Product Qualification Report of EP17 PTH Transformer (125°C Celsius)

Project Number:T6356;OrderingCode:B78423P9104A005

Tests performed by EPCOS HO

Test	Test condition	No.of parts	Test criteria (acceptance criteria is zero failure)	Evaluation after test[1] (Quantity of failes parts)	
				electrical	mechanical
preconditioning[2]	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s)	148 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(pin1,3 to pin7,8) 3000Vac HV:(pin1,3 to pin4,5) 500Vac HV:(Windings to core) 1500Vac	0	0
Storage at High Temparature (According to IEC 60068-2-2 Part 1 test Ba)	2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s) duration:1000h;unloaded;ambient temperature:Tmax=125°C additional treatment: 1-2h at ambient temperature Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(pin1,3 to pin7,8) 3000Vac HV:(pin1,3 to pin4,5) 500Vac HV:(Windings to core) 1500Vac	0	0
Temperature Shock (According to IEC 60068-2-14 Part 1 test Na)	2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s) -40°C/Tmax=125°C,100 cycles transition time:<10s dwell time:30min Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(pin1,3 to pin7,8) 3000Vac HV:(pin1,3 to pin4,5) 500Vac HV:(Windings to core) 1500Vac	0	0
Terminal strength, (SMT=n.a.) EN 60068-2-21, Test Ua1	Test Leaded device lead integrity only. Condtion A(910g), duration 10s ± 1s(min 20 pins)	10 pcs	Pin pull force and continuity	0	0
	Test Leaded device lead integrity only. Condtion C(1,13kg).	10 pcs		0	0
Optical Inspection[3] (Accroding to MIL-STD-883, Method 2009)	Legible marking, good workmanship, no visual damage Microscope 10x	148 pcs	Visual inspection (acc. Data sheet) no visible damages	NA	0
Resistance to Soldering Heat(PTH) (Accroding to IEC 60068-2-58)	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s)	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(pin1,3 to pin7,8) 3000Vac HV:(pin1,3 to pin4,5) 500Vac HV:(Windings to core) 1500Vac	0	0
Solderability (According to IEC60068-2-20 /68-2-58)	dip & look test after aging: 4h / +155°C dry heat; (+245 ±3)°C, (3 ±0.3) sec, solder: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)%	16 pcs	Acc.Standard (Wetability>95%); criteria in IEC68-2-58/68-2-20	0	0
Dwetting test (According to IEC60068-2-20 /68-2-58)	dip & look test (+260±5)°C, (5 ±0.5) sec, Dipping 2 cycles,procedure and requirments according IEC68-2-20/68-2-58	16 pcs	Acc.Standard (de-wetted are in max.5%); criter for area in IEC68-2-58/68-2-20	0	0

Remarks:

[1] according test criteria

[2] preconditioning:2x dip soldering for all group test excepted parts for solderability &Dwetting test.

[3] optical inspection will be done after each single test in its own group

HO MAG T PD
Taojun Li
Aug.29.2014

Product Qualification Report of EVD 25 PTH Transformer (125°C Celsius)

Project Number:T6506;OrderingCode:B78450P9436A005

Tests performed by EPCOS HO

Test	Test condition	No.of parts	Test criteria (acceptance criteria is zero failure)	Evaluation after test[1] (Quantity of failes parts)	
				electrical	mechanical
preconditioning[2]	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s)	148 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(W1,W2 ,W6 to W3,W4,W5) 3000Vac	0	0
Storage at High Temparature (According to IEC 60068-2-2 Part 1 test Ba)	2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s) duration:1000h;unloaded;ambient temperature:Tmax=125°C additional treatment: 1-2h at ambient temperature Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(W1,W2 ,W6 to W3,W4,W5) 3000Vac	0	0
Temperature Shock (According to IEC 60068-2-14 Part 1 test Na)	2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s) -40°C/Tmax=125°C,100 cycles transition time:<10s dwell time:30min Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(W1,W2 ,W6 to W3,W4,W5) 3000Vac	0	0
Terminal strength, (SMT=n.a.) EN 60068-2-21, Test Ua1	Test Leaded device lead integrity only. Condtion A(910g), duration 10s ± 1s(min 20 pins)	10 pcs	Pin pull force and continuity	0	0
	Test Leaded device lead integrity only. Condtion C(1,13kg).	10 pcs		0	0
Optical Inspection[3] (Accroding to MIL-STD-883, Method 2009)	Microscope 10x	148 pcs	Legible marking, good workmanship, no visual damage	NA	0
Resistance to Soldering Heat(PTH) (Accroding to IEC 60068-2-58)	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 2x dip soldering (+270°C+/-3; t=10s +/-1s; dip time 25±6 mm/s)	32 pcs	ΔL%≤±10%, ΔDCR%≤±10% HV:(W1,W2 ,W6 to W3,W4,W5) 3000Vac	0	0
Solderability (According to IEC60068-2-20 /68-2-58)	dip & look test after aging: 4h / +155°C dry heat; (+245 ±3)°C, (3 ±0.3) sec, solder: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)%	16 pcs	Acc.Standard (Wetability>95%); criteria in IEC68-2-58/68-2-20	0	0
Dwetting test (According to IEC60068-2-20 /68-2-58)	dip & look test (+260±5)°C, (5 ±0.5) sec, Dipping 2 cycles,procedure and requirments according IEC68-2-20/68-2-58	16 pcs	Acc.Standard (de-wetted are in max.5%); criter for area in IEC68-2-58/68-2-20	0	0

Remarks:

[1] according test criteria

[2] preconditioning:2x dip soldering for all group test excepted parts for solderability &Dwetting test.

[3] optical inspection will be done after each single test in its own group

HO MAG T PD
Taojun Li
Dec.02.2014

Product Qualification Report of R12.5 PTH Transformer (125°C Celsius)

Project Number:T0973;OrderingCode:B78512P7018A005
Tests performed by EPCOS HO

Test	Test condition	No.of parts	Test criteria (acceptance criteria is zero failure)	Evaluation after test[1] (Quantity of failes parts)	
				electrical	mechanical
preconditioning[2]	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 1x Wave profile (+270°C+/-3; t=10s +/-1s)	148 pcs	ΔL%≤±10%, ΔDCR%≤±10%	0	0
Storage at High Temparature (According to IEC 60068-2-2 Part 1 test Ba)	1x Wave profile (+270°C+/-3; t=10s +/-1s) duration:1000h;unloaded;ambient temperature:Tmax=125°C additional treatment: 1-2h at ambient temperature Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10%	0	0
Temperature Shock (According to IEC 60068-2-14 Part 1 test Na)	1x Wave profile (+270°C+/-3; t=10s +/-1s) -40°C/Tmax=125°C,100 cycles transition time:<10s dwell time:30min Measurement at 24+/-2 hours after test conclusion.	32 pcs	ΔL%≤±10%, ΔDCR%≤±10%	0	0
Terminal strength, (SMT=n.a.) EN 60068-2-21, Test Ua1	Test Leaded device lead integrity only. Condtion A(910g), duration 10s ± 1s(min 20 pins)	10 pcs	Pin pull force and continuity	0	0
	Test Leaded device lead integrity only. Condtion C(1,13kg).	10 pcs		0	0
Optical Inspection[3] (Accroding to MIL-STD-883, Method 2009)	Legible marking, good workmanship, no visual damage Microscope 10x	148 pcs	Visual inspection (acc. Data sheet) no visible damages	NA	0
Resistance to Soldering Heat(PTH) (Accroding to IEC 60068-2-58)	PTH: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)% 1x Wave profile (+270°C+/-3; t=10s +/-1s)	32 pcs	ΔL%≤±10%, ΔDCR%≤±10%	0	0
Solderability (According to IEC60068-2-20 /68-2-58)	dip & look test after aging: 4h / +155°C dry heat; (+245 ±3)°C, (3 ±0.3) sec, solder: SnAg (3.0 - 4.0)% Cu (0.5 - 0.9)%	16 pcs	Acc.Standard (Wetability>95%); criteria in IEC68-2-58/68-2-20	0	0
Dwetting test (According to IEC60068-2-20 /68-2-58)	dip & look test (+260±5)°C, (5 ±0.5) sec, Dipping 1 cycles,procedure and requirments according IEC68-2-20/68-2-58	16 pcs	Acc.Standard (de-wetted are in max.5%); criter for area in IEC68-2-58/68-2-20	0	0

Remarks:
[1] according test criteria
[2] preconditioning:1x Wave profile for all group test excepted parts for solderability &Dwetting test.
[3] optical inspection will be done after each single test in its own group

HO MAG T PD
Taojun Li
July.09.2015