


THE NETHERLANDS
(N E D E R L A N D)**COMMUNICATION**Concerning⁽¹⁾:

- approval granted
- ~~approval extended~~
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~

of a type of ~~electrical~~/electronic sub-assembly⁽¹⁾ with regard to Regulation number 10.**Approval number: E4-10R-053269****Extension number: 00**

1. Make (trade name of manufacturer) : SAE CNSAE SAEC
2. Type and general commercial description(s) : SW12263
Driving beam
3. Means of identification of type, if marked on the ~~vehicle~~/component/
~~separate technical unit~~⁽¹⁾ : N/A
- 3.1. Location of that marking : N/A
4. Category of vehicle : N/A
5. Name and address of manufacturer : Foshan Sunway Auto Electrical Co., Ltd.
No.8 South Junye Road, Zone C,
Shishan Scientific & Technological Park,
Nanhai District, Foshan City, Guangdong
Province, 528225, P.R. China
6. In the case of components and separate technical units, location and method of affixing of the approval mark : Moulded on the lens



7. Address(es) of assembly plant(s) : No.8 South Junye Road, Zone C,
Shishan Scientific & Technological Park,
Nanhai District, Foshan City, Guangdong
Province, 528225, P.R. China
8. Additional information (where applicable) : See Appendix
9. Technical service responsible for carrying out the tests : TÜV SÜD Auto Service GmbH
Westendstraße 199
D-80686 München
10. Date of test report : 2015-05-25
11. Number of test report : 15-00287-CX-SHA-00
12. Remarks (if any) : See Appendix
13. Place : Zoetermeer
14. Date : 08-JUN-2015
15. Signature : 
16. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.
17. Reasons for extension : N/A

⁽¹⁾ Strike out what does not apply.

APPENDIX

to type-approval communication form number: E4-10R-053269, Extension number: 00

concerning the type-approval of an ~~electrical~~/electronic sub-assembly⁽¹⁾ under Regulation number 10.

1. Additional information
 - 1.1. Electrical system rated voltage : 12V DC pos./neg. ground⁽¹⁾
 - 1.2. This ESA can be used on any vehicle type with the following restrictions : No restrictions
 - 1.2.1. Installation conditions, if any : Attached the mounting base to Vehicle
 - 1.3. This ESA can be used only on the following vehicle types : N/A
 - 1.3.1. Installation conditions, if any : N/A
 - 1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were : Measured by bulk current injection (20 MHz - 400 MHz) and in the anechoic chamber (400 MHz – 2 GHz) as described in annex 9 of ECE-Regulation No. 10 respectively annex IX of Directive 2009/19/EC
 - 1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests : Shanghai Inspection and Testing Institute of Instruments and Automatic Systems
No. 103, Caobao Road, Shanghai, P.R. China
2. Remarks : N/A

⁽¹⁾ Strike out what does not apply.



Technical Report No.: 15-00287-CX-SHA-00
Manufacturer: Foshan Sunway Auto Electrical Co., Ltd.
Type: SW12263

TECHNICAL REPORT

No.: 15-00287-CX-SHA-00

Test of a type of a component

according to the Regulation of the Economic Commission for Europe relating to

Electromagnetic Compatibility

No.: ECE R10

Including all amendments up to

05 series of amendments

Approval status	
<input checked="" type="checkbox"/>	Granting of a type approval
<input type="checkbox"/>	Extension/correction to type approval no.: --



Technical Report No.: 15-00287-CX-SHA-00
Manufacturer: Foshan Sunway Auto Electrical Co., Ltd.
Type: SW12263

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1. General

- 1.1. Make : SAE CNSAE SAEC
- 1.2. Type : SW12263
- 1.3. Variants : N/A
- 1.4. Commercial description(s) : Driving beam
- 1.5. Category of vehicle : N/A
- 1.6. Name and address of manufacturer : Foshan Sunway Auto Electrical Co., Ltd.
No.8 South Junye Road, Zone C,
Shishan Scientific & Technological Park,
Nanhai District, Foshan City, Guangdong
Province, 528225, P.R. China
- 1.7. Name and address of representative : N/A
- 1.8. Information document
- No. : SW12263-00
- Date of issue : 2015-04-24 (YYYY-MM-DD)
- Last date of amendment : N/A
- 1.9. Technical description of the component : See manufacturer's information document
2. Test record : Refer to Annex 2



Technical Report No.: 15-00287-CX-SHA-00
 Manufacturer: Foshan Sunway Auto Electrical Co., Ltd.
 Type: SW12263

3. Enclosure(s)

- Annex 1 List of modification
- Annex 2 Test record
- Annex 2a Measurement diagrams of the radio interference 30 MHz - 1 GHz
- Annex 2b Conducted transients from ESAs to the vehicle power supply
- Annex 2c Immunity of ESA to conducted transient interferences
- Annex 2d Immunity of ESAs to electromagnetic radiation
- Annex 3 Information document

4. Statement of conformity

The information folder as mentioned under No. 1.8. and the type described therein are in compliance with the test specification mentioned above. The worst-case was selected in accordance with document "Preparation of Test Reports".

The test report may be reproduced and published in full and by the client only. It can be reproduced partially with the written permission of the test laboratory only.

München, 2015-05-25
 (YYYY-MM-DD)



Gu, Qing
 Test Laboratory / DIN EN ISO 17025

Approval authority	Country	Registration-number	Actual scope list
Kraftfahrt-Bundesamt (KBA)	Germany	KBA-P 00100-10	http://www.kba.de
Vehicle Certification Agency (VCA)	United Kingdom	VCA-TS-006	http://ec.europa.eu/enterprise/sectors/automotive/approval-authorities-technical-services/technical-services/index_en.htm
Approval Authority of the Netherlands (RDW)	The Netherlands	RDWT-082-01	
National Standards Authority of Ireland (NSAI)	Ireland	Technical Service Number: 49	
Vehicle Safety Certification Center (VSCC)	Taiwan	DE04-06-2	http://www.vsc.org.tw/English/Default.aspx





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Manufacturer: Foshan Sunway Auto Electrical Co., Ltd.
Type: SW12263

Annex 1

List of modification

Correction of : N/A

Modification of : N/A

Addition of : N/A

Deletion of : N/A



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Annex 2

Test record

1. Technical data of the test component

Representative ESA : Driving beam

Tested variant (if any) : SW12263

2. Test conditions

2.1. Instrument : In accordance to the standard above

2.2. Ambient condition : In accordance to the standard above

2.3. Carrying out of the test

2.3.1. Broadband electromagnetic interference generated by ESA

2.3.1.1. Method of measurement : Measured by the method described in annex 7 of ECE-Regulation No. 10. respectively
Measured by the method described in annex VII of Directive 2009/19/EC.

2.3.1.2. Results : The measured values, expressed in dB μ V/m, are below the reference limits.

The test was passed.

2.3.2. Narrowband electromagnetic interference generated by ESA

2.3.2.1. Method of measurement : Measured by the method described in annex 8 of ECE-Regulation No. 10. respectively
Measured by the method described in annex VII of Directive 2009/19/EC.

2.3.2.2. Results : The measured values, expressed in dB μ V/m, are below the reference limits. The test was passed.



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2.3.3. Immunity of ESA to electromagnetic radiation

2.3.3.1. Method of measurement : Measured by bulk current injection (20 MHz - 400 MHz) and in the anechoic chamber (400 MHz – 2 GHz) as described in annex 9 of ECE-Regulation No. 10 respectively annex IX of Directive 2009/19/EC

2.3.3.2. Performance criteria : No degradation of function by testing with 60 mA (bulk current injection) and 30 V/m (anechoic chamber).

2.3.3.3. Results : The ESA has not exhibited any malfunction. The claimed functional state was fulfilled during the test. The test was passed.

2.3.4. Immunity of ESA to conducted transient interferences

2.3.4.1. Method of measurement : Measured as described in annex 10 of ECE-Regulation No. 10. respectively
Measured as described in annex X of Directive 2009/19/EC.

2.3.4.2. Results : The ESA has not exhibited any unacceptable malfunction. The claimed functional state was fulfilled during the test. The test was passed.

2.3.5. Conducted transient interferences generated by ESA

2.3.5.1. Method of measurement : Measured as described in annex 10 of ECE-Regulation No. 10. respectively
Measured as described in annex X of Directive 2009/19/EC.

2.3.5.2. Results : The measured values are below the reference limits. The test was passed.

3. Test result

The results of the tests are attached in the diagrams of the enclosure.

4. Place and date of test

Place : Shanghai Inspection and Testing Institute of Instruments and Automatic Systems
No. 103, Caobao Road, Shanghai, P.R. China
Date : 2015-04-16 (YYYY-MM-DD)



Technical Report No.: 15-00287-CX-SHA-00
Manufacturer: Foshan Sunway Auto Electrical Co., Ltd.
Type: SW12263

Annex 2a Measurement diagrams of the radio interference 30 MHz - 1 GHz ESA Broadband and Narrowband Radiation Measurement

Model(s): SW12263

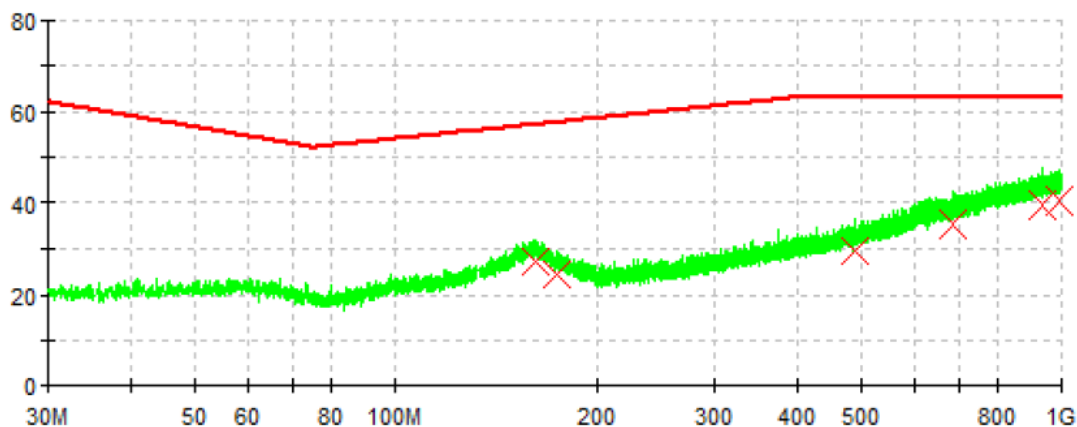
Date of test: 2015-04-16

Test Mode: 12V DC input

Test Result: Pass

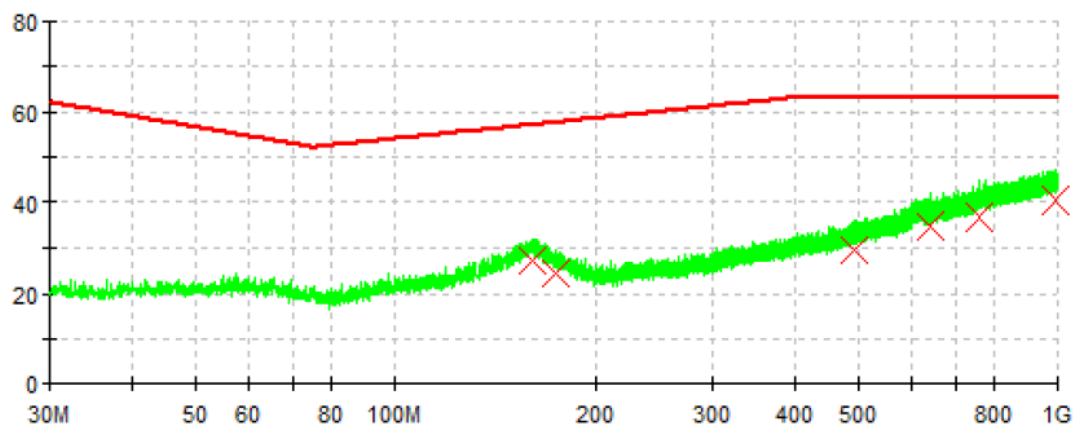
Horizontal Polarity Test Result Diagram (Broadband)

30 — 1000M Broadband Auto



Vertical Polarity Test Result Diagram (Broadband)

30 — 1000M Broadband Auto

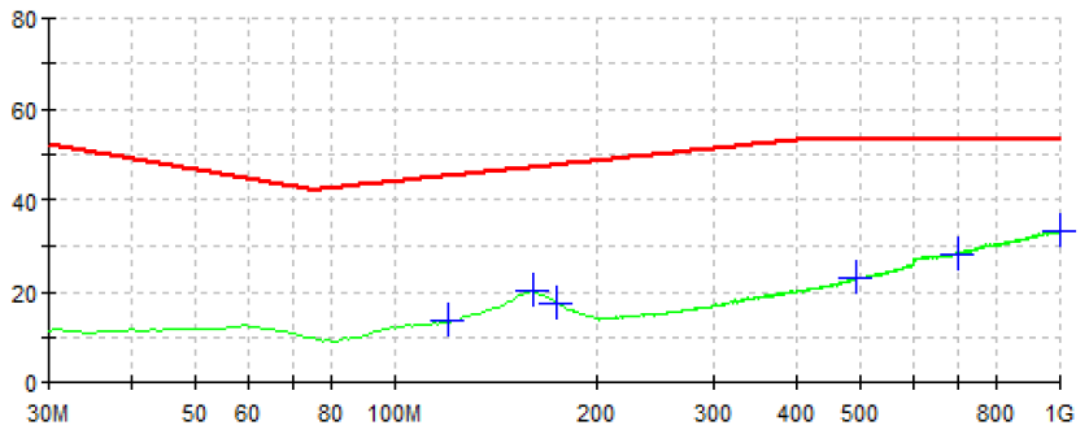


Maximum broadband PK value (table 1):

Frequency (MHz)	Test results (dBµV/m)		Reference QP Limit (dBµV/m)	Margin to reference QP value (dBµV/m)
	hor.	vert.		
992.52	40.4	---	63.0	22.6
989.88	---	40.4	63.0	22.6

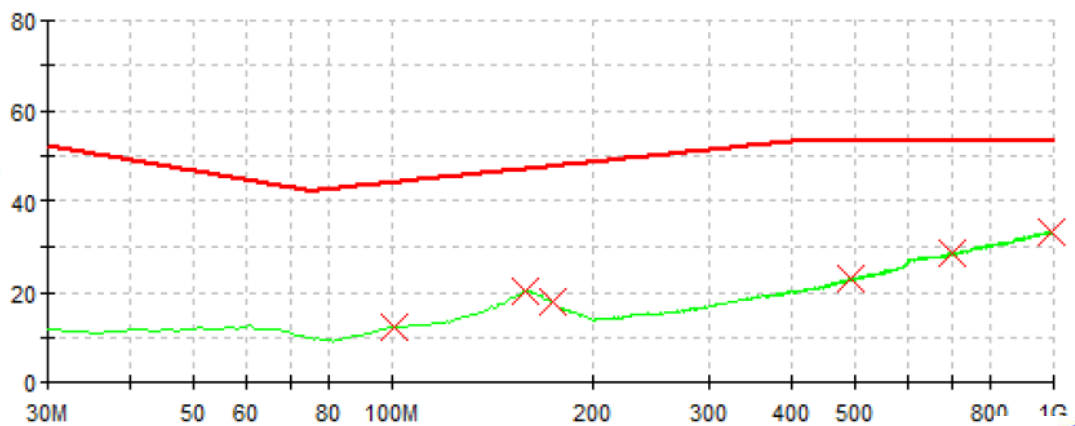
Horizontal Polarity Test Result Diagram (Narrow band)

30 — 1000M Narrowband Auto



Vertical Polarity Test Result Diagram (Narrow band)

30 — 1000M Narrowband Auto



Technical Report No.: 15-00287-CX-SHA-00
 Manufacturer: Foshan Sunway Auto Electrical Co., Ltd.
 Type: SW12263

Maximum narrowband AV value (table 2):

Frequency (MHz)	Test results (dB μ V/m)		Reference QP Limit (dB μ V/m)	Margin to reference QP value (dB μ V/m)
	hor.	vert.		
998.00	33.6	---	53.0	19.4
996.00	---	33.3	53.0	19.7

Annex 2b Conducted transients from ESAs to the vehicle power supply

Model(s): SW12263
 Date of test: 2015-04-16
 Test Mode: 12V DC input
 Test Result: Pass

Measurement result:

Polarity of pulse amplitude	Maximum allowed value for vehicles with 24V systems	Measured Pulse amplitude True value
Positive	+75V	+19.2V
Negative	-100V	-18.4V



Technical Report No.: 15-00287-CX-SHA-00
 Manufacturer: Foshan Sunway Auto Electrical Co., Ltd.
 Type: SW12263

Annex 2c Immunity of ESA to conducted transient interferences

Model(s): SW12263

Date of test: 2015-04-16

Test Mode: 12V DC input

Test Result: Pass

Measurement result:

Test pulse	Test level	Number of pulse / test time	Burst cycle / pulse repetition time	Required minimum functional status (clause 2.5)	Status of function true value
1	-75V	5000 pulses	0.5 s	C	B
2a	+37V	5000 pulses	0.2 s	B	A
2b	+10V	10 pulses	0.5 s	C	B
3a	-112V	1 h	90 ms	A	A
3b	+75V	1 h	90 ms	A	A
4	-6V	1 pulses	2s	B	B

Remark:

Class A: all functions of a device/system perform as designed during and after exposure to disturbance.

Class B: all functions of a device/system perform as designed during exposure. However, one or more of them can go beyond specified tolerance. All functions return automatically to within normal limits after exposure is removed. Memory functions shall remain class A.

Class C: one or more functions of a device/system do not perform as designed during exposure but return automatically to normal operation after exposure is removed.





Technical Report No.: 15-00287-CX-SHA-00
Manufacturer: Foshan Sunway Auto Electrical Co., Ltd.
Type: SW12263

Annex 2d Immunity of ESAs to electromagnetic radiation

Model(s): SW12263
Date of test: 2015-04-16
Test Mode: 12V DC input
Test Result: Pass

Measurement result:

Frequency range (MHz)	Test level	Type of modulation	Test distance	Antenna position	Result
>20 to ≤ 400	60mA	/	150mm	/	Pass*
>400 to ≤ 800	30V/m	AM,80%	1m	Vertical	Pass*
>800 to ≤ 2000	30V/m	PM,577us	1m	Vertical	Pass*

Remark:

* no degradation of performance of immunity-related functions.



Content – ECE R10

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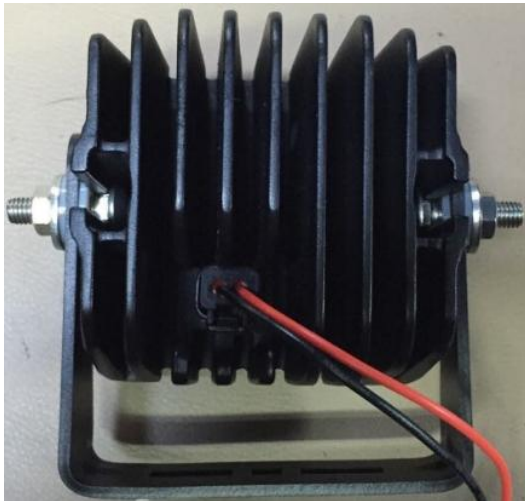
INFORMATION DOCUMENT FOR TYPE-APPROVAL OF AN ELECTRIC/ELECTRONIC
SUB-ASSEMBLY WITH RESPECT TO ELECTROMAGNETIC COMPATIBILITY
ACCORDING ANNEX IIB OF ECE-R10.05

- 1 Make (trade name of the manufacturer) : SAE CNSAE SAEC
- 2 Type and general commercial description(s) : SW12263
- commercial description(s) : Driving beam
- version(s) : N/A
- 3 Means of identification of type, if marked on the component/~~separate technical unit~~ : N/A
- 3.1 Location of that marking : N/A
- 4 Name and address of the manufacturer : Foshan Sunway Auto Electrical Co., Ltd.
No.8 South Junye Road, Zone C, Shishan Scientific & Technological Park, Nanhai District, Foshan City, Guangdong Province, 528225, P.R. China
- 4.1 Name and address of authorized representative, if any : N/A
- 5 In the case of components and separate technical units, location and method of affixing of the approval mark : Moulded on the lens
- 6 Address(es) of assembly plant(s) : No.8 South Junye Road, Zone C, Shishan Scientific & Technological Park, Nanhai District, Foshan City, Guangdong Province, 528225, P.R. China
- 7 This ESA shall be approved as a : Component/~~STU~~
- 8 Any restrictions of use and conditions for fitting : No restrictions



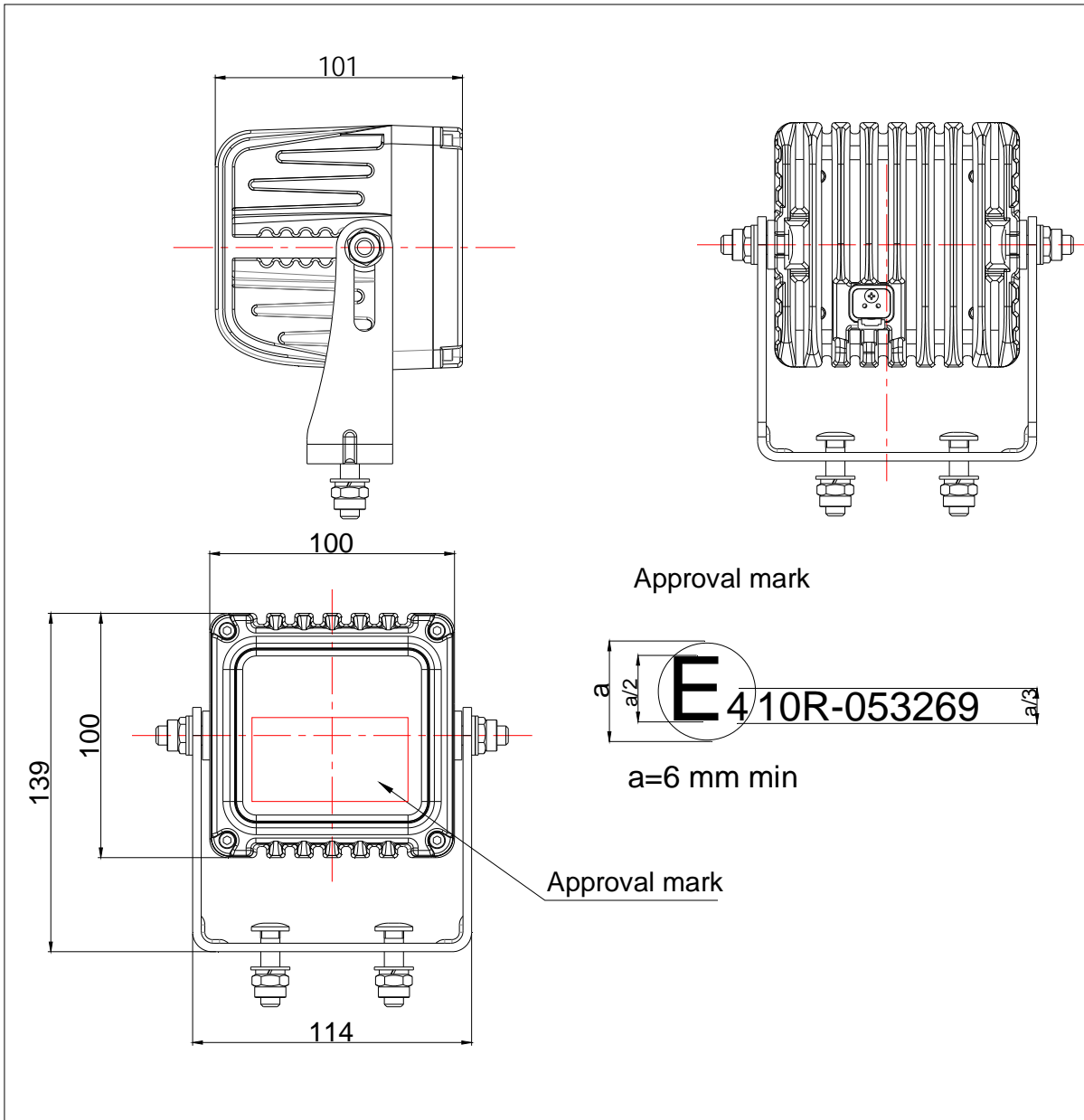
Type	SW12263
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Appearance Drawing



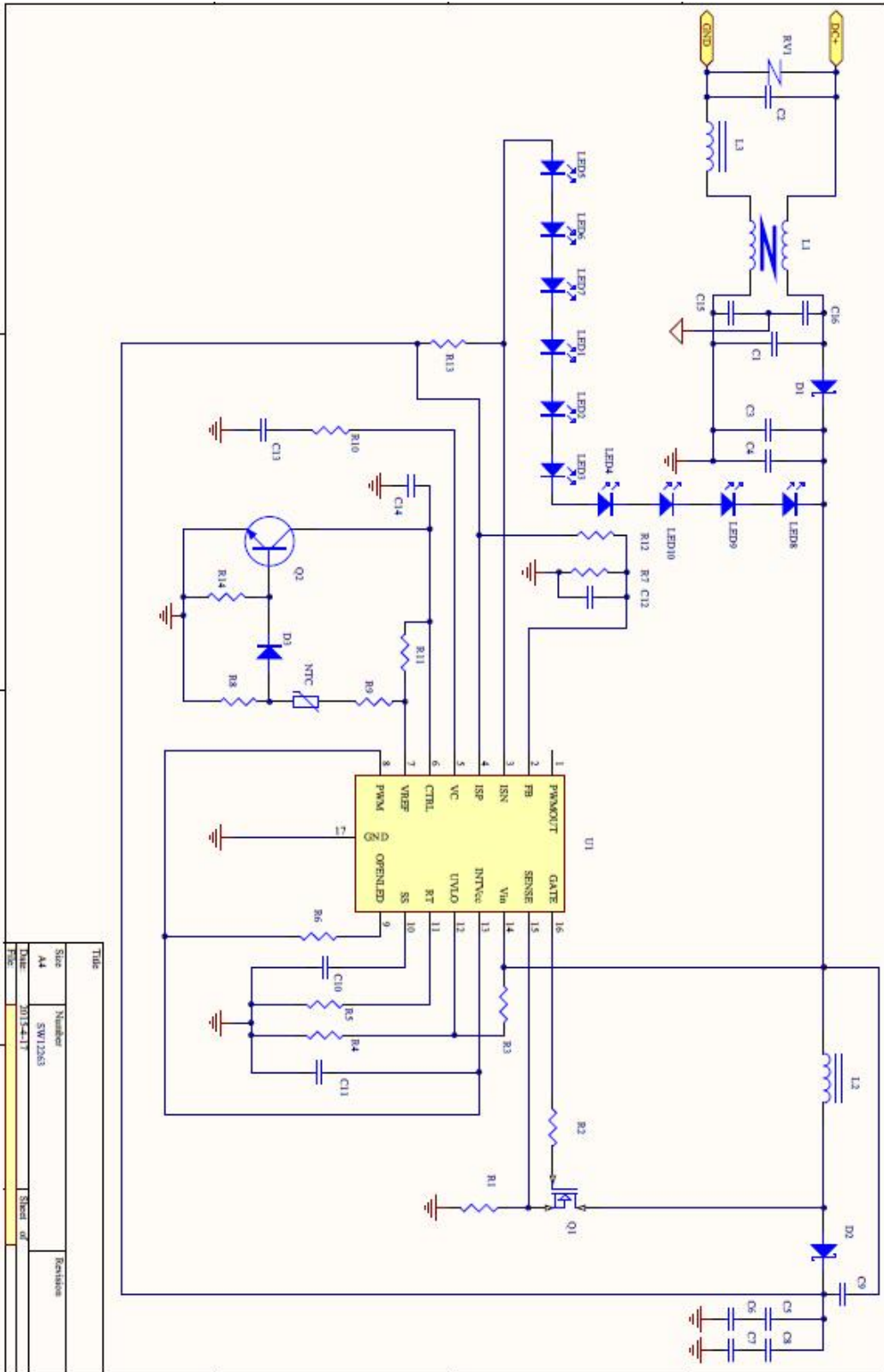
Type	SW12263
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Assembly Drawing



Type	SW12263
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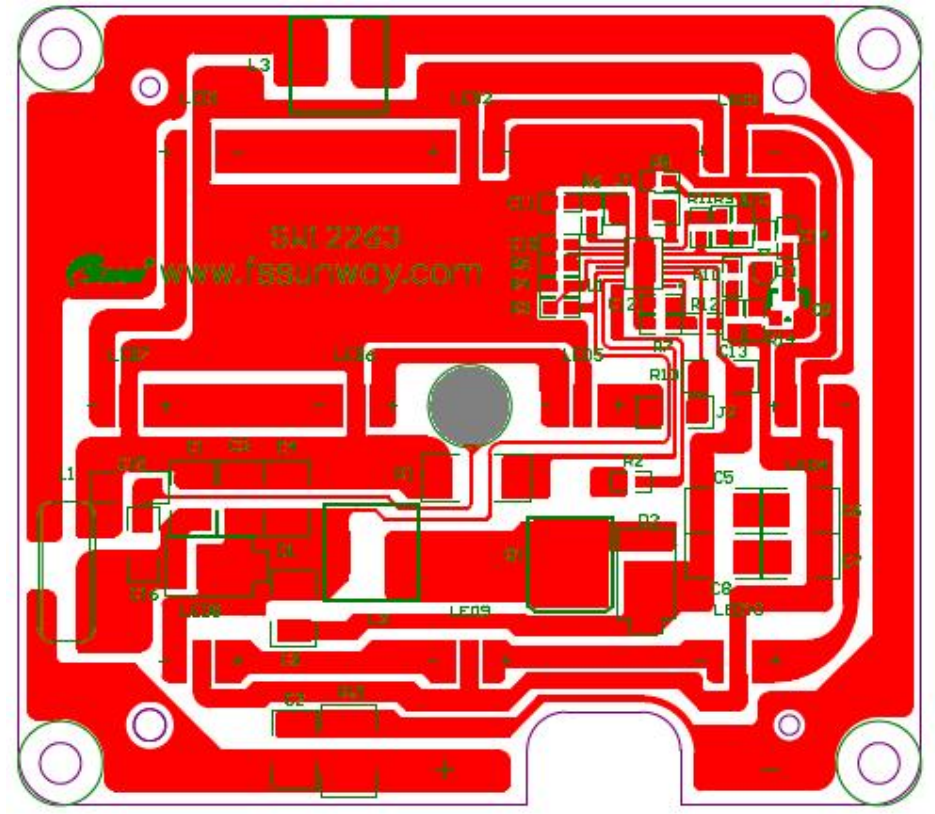
Circuit Diagram



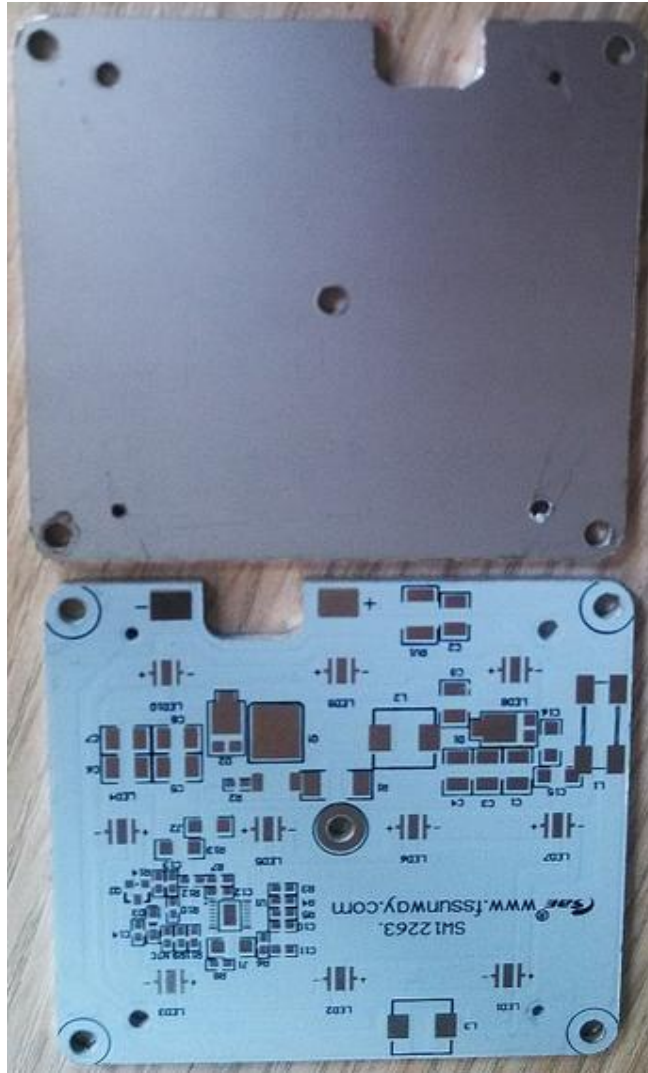
Title		Revision	
Size	Number		
A4	SW12263		
DATE	2013-4-17	Sheet	of
FILE			



PCB Circuit Diagram



PCB Layout



Type	SW12263
Page	7 of 9

Bill of Materials (1)

Comment	Designator	Footprint	Quantity
Schottky diode	D1-D2	S5100H TO-277A	2
Switching diode	D3	1N4148 SOD-123	1
audion	Q2	8050 SOT-23	1
Thermistor NTC	NTC	680K Ω 5%	1
integrated circuit	U1	LT3756-2 MSOP-16	1
field-effect tube	Q1	AOD482 TO-252	1
Power SMT inductance	L2	BWSL0605-4R7M 7mm×7mm×5mm	1
Power SMT inductance	L3	BWSL0605-6R8M 7mm×7mm×5mm	1
chip resistor	R1	0.007 Ω 1% 2512	1
chip resistor	R13	0.091 Ω 1% 1206	1
chip resistor	R2	10 Ω 1% 0603	1
chip resistor	R7	10K Ω 1% 0603	1
chip resistor	R5	35.7K Ω 1% 0603	1
chip resistor	R10	3.4K Ω 1% 0603	1
chip resistor	R12	680K Ω 1% 0603	1
chip resistor	R3	1M Ω 5% 0603	1
chip resistor	R4	220K Ω 5% 0603	1
chip resistor	R8	200K Ω 1% 0603	1
chip resistor	R9	47K Ω 1% 0603	1
chip resistor	R11	40.2K Ω 1% 0603	1



Bill of Materials (2)

Comment	Designator	Footprint	Quantity
chip resistor	R6,R14	100KΩ 5% 0603	2
chip resistor	J1-J2	0Ω 1% 1206	2
SMD ceramic capacitor	C13	104/16V 10% (-40℃~125℃) 0603	1
SMD ceramic capacitor	C10,C12,C14	103/16V 10% (-40℃~125℃) 0603	3
SMD ceramic capacitor	C11	6.8uF/16V 10% (-40℃~125℃) 0603	1
chip capacitor	C1-C9	10uF/50V 1210	9
Circuit board	SW12263	SW12263 aluminum substrate,70.5mm× 62.5mm×2.0mm	1
LED	LED1- LED10	CREE 5W XPGBWT-L1-1A0-R3-0-01	10
piezoresistor	RV1	560K 1812	1
Patch ceramics capacitor	C15,C16	103/200V 1206	2
Common-mode inductor	L1	T9×5×3 vertical type, 150uH 20% wire diameter:0.7mm	1

