Reliability Test Report

Product: 100G QSFP28 AOC, 850 nm



1. Product Overview

Features

- Reliability test report for 100G QSFP28 optical cables.
- Mechanical shock and vibration test records.
- Storage, temperature cycling, damp heat and accelerated-aging test records.
- Recorded summary: 11 samples per listed test, zero failures.

Applications

2. Absolute Maximum Ratings

Test Set	Item	Failure Definitions
Characteristic	Physics Size	Over the dimensions tolerances
Characteristic	Appearance Inspection	GR-468-CORE ISSUE 1
Mechanical Test	Mechanical Shock Vibration	ΔP and ΔS are both larger than ±1dB.(ΔP: The difference of optical power; ΔS: The difference of receiver sensitivity.
Endurance Test	Accelerated-Aging High Temperature Storage Low Temperature Storage Temperature Cycling Damp Heat	ΔP and ΔS are both larger than ±1dB.(ΔP: The difference of optical power; ΔS: The difference of receiver sensitivity.
Special Test	NA	NA

3. Optical Parameters

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTE
TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS	TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS	TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS	TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS	TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS	TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS	TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS
Optical Output Power	Po	-8.4	-	+2.4	dBm	
Center Wavelength	λ	840	850	860	nm	
RECEIVER ELECTRO-OPTICAL CHARACTERISTICS	RECEIVER ELECTRO-OPTICAL CHARACTERISTICS	RECEIVER ELECTRO-OPTICAL CHARACTERISTICS	RECEIVER ELECTRO-OPTICAL CHARACTERISTICS	RECEIVER ELECTRO-OPTICAL CHARACTERISTICS	RECEIVER ELECTRO-OPTICAL CHARACTERISTICS	RECEIVER ELECTRO-OPTICAL CHARACTERISTICS
Bit Error Ratio				1E-12		1
Center Wavelength	λC	830	850	860	nm	

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTE
RECOMMENDED OPERATING CONDITIONS	RECOMMENDED OPERATING CONDITIONS	RECOMMENDED OPERATING CONDITIONS	RECOMMENDED OPERATING CONDITIONS	RECOMMENDED OPERATING CONDITIONS	RECOMMENDED OPERATING CONDITIONS	RECOMMENDED OPERATING CONDITIONS
Case Operating Temperature	TAMB	-40	25	85	°C	
DC Supply Voltage	Vcc	3.135	3.30	3.465	V	
Module Supply Current	IIN	-		1200	mA	

4. Additional Specifications

Testing Items	Equipment
Mechanical Shock	Shock Test System
Vibration	Vibration Testing
High Temperature Storage	High-temperature chamber
Low Temperature Storage	Temperature / humidity chamber
Temperature Cycling	Temperature / humidity chamber
Damp Heat	Temperature / humidity chamber
Accelerated-Aging	High-temperature chamber

5. Additional Specifications

Experiment Category	Test Items	Reference	Conditions	Sample Amount	Allowed Failures
Mechanical Test	Mechanical Shock	MIL-STD-883E	Cond. B 5 times/ axis, 1,500 G,0.5ms	11	0
Mechanical Test	Vibration	MIL-STD-883E	20g, 20~2000Hz,4min/cy, 4cy/axis	11	0
Endurance Test	High Temperature Storage	GR-468-CORE	85℃, 2000h	11	0
Endurance Test	Low Temperature Storage	GR-468-CORE	-40℃, 72h	11	0
Endurance Test	Temperature Cycling	GR-468-CORE	-40~+85℃, 200Cycles	11	0
Endurance Test	Damp Heat	MIL-STD-202 method 103 or IEC68-2-3	85°C 85% RH, 500h	11	0
Endurance Test	Accelerated-Aging	GR-468-CORE	85℃, 2000h, VCC=3.3V	11	0
Special Test	--	--	--	--	--

6. Test Data

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213001	WT230213002	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213001	WT230213002	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213001	WT230213002	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213001	WT230213002	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213003	WT230213004	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213003	WT230213004	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213003	WT230213004	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213003	WT230213004	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213005	WT230213006	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213005	WT230213006	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213005	WT230213006	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213005	WT230213006	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213007	WT230213008	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213007	WT230213008	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213007	WT230213008	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213007	WT230213008	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213009	WT230213010	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213009	WT230213010	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213009	WT230213010	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213009	WT230213010	CH4	1.00E-12	1.00E-12	0	PASS	PASS

7. Test Data

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213001	WT230213002	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213001	WT230213002	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213001	WT230213002	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213001	WT230213002	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213003	WT230213004	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213003	WT230213004	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213003	WT230213004	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213003	WT230213004	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213005	WT230213006	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213005	WT230213006	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213005	WT230213006	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213005	WT230213006	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213007	WT230213008	CH1	1.00E-12	1.00E-12	0	PASS	PASS

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213007	WT230213008	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213007	WT230213008	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213007	WT230213008	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213009	WT230213010	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213009	WT230213010	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213009	WT230213010	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213009	WT230213010	CH4	1.00E-12	1.00E-12	0	PASS	PASS

8. Test Data

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213011	WT230213012	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213011	WT230213012	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213011	WT230213012	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213011	WT230213012	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213013	WT230213014	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213013	WT230213014	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213013	WT230213014	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213013	WT230213014	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213015	WT230213016	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213015	WT230213016	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213015	WT230213016	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213015	WT230213016	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213017	WT230213018	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213017	WT230213018	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213017	WT230213018	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213017	WT230213018	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213019	WT230213020	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213019	WT230213020	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213019	WT230213020	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213019	WT230213020	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213021	WT230213022	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213021	WT230213022	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213021	WT230213022	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213021	WT230213022	CH4	1.00E-12	1.00E-12	0	PASS	PASS

9. Test Data

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213011	WT230213012	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213011	WT230213012	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213011	WT230213012	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213011	WT230213012	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213013	WT230213014	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213013	WT230213014	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213013	WT230213014	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213013	WT230213014	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213015	WT230213016	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213015	WT230213016	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213015	WT230213016	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213015	WT230213016	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213017	WT230213018	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213017	WT230213018	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213017	WT230213018	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213017	WT230213018	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213019	WT230213020	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213019	WT230213020	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213019	WT230213020	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213019	WT230213020	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213021	WT230213022	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213021	WT230213022	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213021	WT230213022	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213021	WT230213022	CH4	1.00E-12	1.00E-12	0	PASS	PASS

10. Test Data

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213023	WT230213024	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213023	WT230213024	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213023	WT230213024	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213023	WT230213024	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213025	WT230213026	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213025	WT230213026	CH2	1.00E-12	1.00E-12	0	PASS	PASS

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213025	WT230213026	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213025	WT230213026	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213027	WT230213028	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213027	WT230213028	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213027	WT230213028	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213027	WT230213028	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213029	WT230213030	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213029	WT230213030	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213029	WT230213030	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213029	WT230213030	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213031	WT230213032	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213031	WT230213032	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213031	WT230213032	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213031	WT230213032	CH4	1.00E-12	1.00E-12	0	PASS	PASS

11. Test Data

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213033	WT230213034	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213033	WT230213034	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213033	WT230213034	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213033	WT230213034	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213035	WT230213036	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213035	WT230213036	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213035	WT230213036	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213035	WT230213036	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213037	WT230213038	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213037	WT230213038	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213037	WT230213038	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213037	WT230213038	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213039	WT230213040	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213039	WT230213040	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213039	WT230213040	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213039	WT230213040	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213041	WT230213042	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213041	WT230213042	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213041	WT230213042	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213041	WT230213042	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213043	WT230213044	CH1	1.00E-12	1.00E-12	0	PASS	PASS

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213043	WT230213044	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213043	WT230213044	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213043	WT230213044	CH4	1.00E-12	1.00E-12	0	PASS	PASS

12. Test Data

SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
SN	SN	Channel	BER(before)	BER(after)	change	Δ(Tx-Rx) within ±1 dB	(No/Pass)
WT230213045	WT230213046	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213045	WT230213046	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213045	WT230213046	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213045	WT230213046	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213047	WT230213048	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213047	WT230213048	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213047	WT230213048	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213047	WT230213048	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213049	WT230213050	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213049	WT230213050	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213049	WT230213050	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213049	WT230213050	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213051	WT230213052	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213051	WT230213052	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213051	WT230213052	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213051	WT230213052	CH4	1.00E-12	1.00E-12	0	PASS	PASS
WT230213053	WT230213054	CH1	1.00E-12	1.00E-12	0	PASS	PASS
WT230213053	WT230213054	CH2	1.00E-12	1.00E-12	0	PASS	PASS
WT230213053	WT230213054	CH3	1.00E-12	1.00E-12	0	PASS	PASS
WT230213053	WT230213054	CH4	1.00E-12	1.00E-12	0	PASS	PASS

13. Additional Specifications

Experiment Category	Test Items	Status	Failure/Number of Test Sample Units	Decisions
Mechanical Test	Mechanical Shock	Completed	0/11	PASS
Mechanical Test	Vibration	Completed	0/11	PASS
Endurance Test	High Temperature Storage	Completed	0/11	PASS
Endurance Test	Low Temperature Storage	Completed	0/11	PASS

Experiment Category	Test Items	Status	Failure/Number of Test Sample Units	Decisions
Endurance Test	Temperature Cycling	Completed	0/11	PASS
Endurance Test	Damp Heat	Completed	0/11	PASS
Endurance Test	Accelerated-Aging	Completed	0/11	PASS
Special Test	--	--	--	--

14. Revision History

Version	Date	Description	Prepared by
V6	2025	Unified WincoTek datasheet format	WincoTek
V6.1	2026-10-23	Engineering and format review	WincoTek