PRODUCT SPECIFICATION

Part Number	MGC005		**Rev**	A		**Date**	15/10/25
Product Description	Modular Jack, With Shell, With LED, With Magnetics, R/A, Through Hole, 2.5G					**Page**	1
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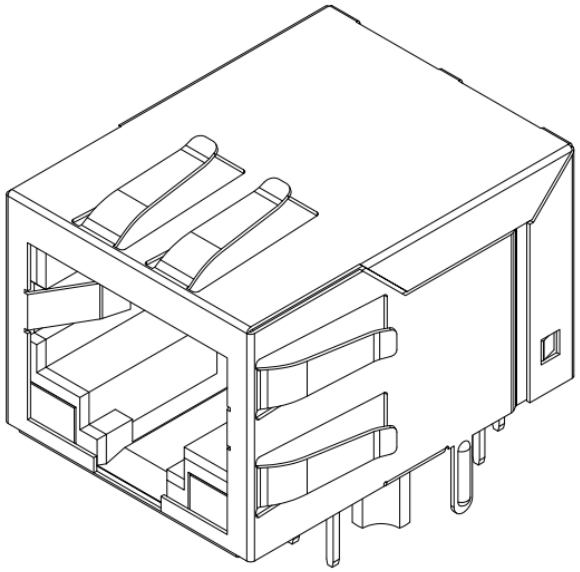

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1.0 SCOPE

This specification covers performance, tests and quality requirements for the Modular Jack, With Shell, With LED, With Magnetics, MGC005.

2.0 PRODUCT NAME AND PART NUMBER

Magnetic Modular Jack Connector – MGC005

3.0 PRODUCT SHAPE, DIMENSIONS AND MATERIAL

Please refer to drawing.

4.0 RATINGS

Storage Temperature .....……. -40°C to +85°C

Operating Temperature Range …… -40°C to +85°C

5.0 TEST AND MEASUREMENT CONDITIONS

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Paragraph 6.0. All tests are performed under the following conditions unless otherwise specified.

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6.0 PERFORMANCE

Item	Test Condition	Requirement
Examination of Product	Visual, dimensional and functional inspection as per quality plan.	Product shall meet requirements of product drawing and specification.

6.1 Electrical Performance

Item	Test Condition	Requirement
Insulation Resistance	Apply 500VDC between adjacent terminals and in accordance with EIA-364-21	500MΩ Min.
Hi-Pot	Apply 2250VDC for 60s between all contacts on the PHY side to the contacts on the cable side and the contacts of the PHY side to the shell, 500VDC between LED to shell in accordance with EIA-364-20	No breakdown
LED Function test	Energise LEDs at rated current and voltage.	All LEDs illuminate and meet visual requirements.

6.2 Mechanical Performance

Item	Test Condition	Requirement
Durability	750 Cycles in accordance with EIA-364-09	Appearance: No Damage. Mating force: 23N Max. Un-mating force: 10N Min.
Solderability Test	Soldering Time: 4-5 seconds at a solder temperature of 245 ±5°C and in accordance with EIA-364-52	95% minimum Solder Area
Resistance to Soldering Heat Test	Solder tails shall be dipped 2mm in the solder bath of 260 ±5°C for 5 ±1 seconds. In accordance with EIA-364-52	No damage
Mating/Un-mating Force	Insertion speed at 25 ±3mm per minute and in accordance with EIA-364-13	Mating force: 23N Max. Un-mating force: 10N Min.
Vibration	Insert plug into connector and expose to 10 to 55 to 10 Hz frequency span over 1 minute at a 1.52mm amplitude for a total of 2 hours. Test to be conducted on 3 mutually perpendicular planes. In accordance with EIA-364-28.	Appearance: No Damage. Discontinuity: 1.0 µ second Max.

6.3 Environmental Performance

Item	Test Condition	Requirement
High Temperature life	+85 ±2°C, 500 hours In accordance with EIA-364-17	No damage
Low Temperature	Mated with plug and exposed to the condition of -40±3 for 96 hours. Recovery time 1~2 hours and in accordance with EIA-364-59	No damage
Humidity	+40 ±2°C, 90~95% RH, 96 hours In accordance with EIA-364-31	No damage
Salt Spray	+35 ±2°C, salinity 5 ±1%, LED solder tails: 8 hours Terminal and shell: 24 hours In accordance with EIA-364-26	No corrosion

6.4 Magnetics Electrical Performance

Item	Test Condition	Requirement
Turn Ratio	Mated Connectors	(1-2):(J1-J2) = 1CT:1CT(±2%) (3-4):(J3-J6) = 1CT:1CT (±2%) (5-6):(J4-J5) = 1CT:1CT (±2%) (7-8):(J7-J8) = 1CT:1CT (±2%)
OCL (Inductance)	PHY and Cable side, Measured at 100KHz, 100mV, 8mA DC	180uH min.
Insertion Loss	Mated Connectors IEC 60512-28-100	1-125MHz, -1.0dB max.
Return Loss	Mated Connectors IEC 60512-28-100	1-40MHz, -20dB min. 40-200MHz, $-20+15LOG_{10}(f/40MHz)$ min.
Cross Talk	Mated Connectors IEC 60512-28-100	1-125MHz, -30dB min.
CMR	Mated Connectors IEC 60512-28-100	30-200MHz, -30dB min.

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7.0 TEST GROUP AND SEQUENCE

Item	Description	Test Group									
		A	B	C	D	E	F	G	H	I	J
		Test Sequence									
1	Examination or product	1, 5	1, 7	1, 3	1, 3	1, 3	1, 3	1, 3	1, 3	1,3	1,8
2	Insulation resistance		2, 5								
3	Hi-Pot		3, 6								
4	Solderability			2							
5	Resistance to soldering Heat Test				2						
6	LED Function test					2					
7	Durability	3									
8	Mating force	2, 4									
9	Vibration						2				
10	High Temperature life							2			
11	Low Temperature								2		
12	Humidity		4								
13	Salt spray									2	
14	Turn Ratio										2
15	Insertion Loss										3
16	Return Loss										4
17	Cross Talk										5
18	CMR										6
19	OCL										7
Sample Size (pcs)		3	3	3	3	3	3	3	3	3	3

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Revision details:

Revision	Information	Page	Release Date
0.1	First draft	-	25/08/2025
0.2	Updated after review	-	11/09/2025
A	First release	-	15/10/2025