



## PRODUCT SPECIFICATION

**PRODUCT SERIES NAME: C2531 SERIES-WIRE TO WIRE TYPE**

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### 1.SCOPE:

This specification covers the requirements for product performance of 2.50mm pitch wire to wire connector series.

### 2.CONSTRUCTION、DIMENSIONS、MATERIAL & PLATING:

See the attached drawings

### 3.RATINGS & APPLICABLE WIRES:

Item	Standard	
Rated Voltage (max.)	250V AC, DC	
Rated Current (max.) and Applicable Wires	AWG #22	3.0A AC, DC
	AWG #24	2.5A AC, DC
	AWG #26	2.0A AC, DC
	AWG #28	1.5A AC, DC
Ambient Temperature Range	-25°C ~ +85°C*	

\*: Including terminal temperature rise

### 4.PERFORMANCE:

#### 4-1.ELECTRICAL PERFORMANCE

Test Description		Procedure	Requirement
4-1-1	Contact Resistance	Mate connectors, measure by dry circuit, 20mV max. 10mA. (Based upon JIS C5402 5.4)	20mΩ max.
4-1-2	Insulation Resistance	Mate connectors, apply 500V DC between adjacent terminal or ground. (Based upon JIS C5402 5.2/ MIL-STD-202 Method 302 Cond. B)	1000MΩ min.
4-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 1000V AC (rms) for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL-STD-202 Method 301)	No Breakdown
4-1-4	Contact Resistance on Crimped Portion	Crimp the applicable wire on to the terminal, measure by dry circuit, 20mV max., 10mA.	5mΩ max.

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			BY	BY	BY
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### 4-2.MECHANICAL PERFORMANCE

Test Description		Procedure		Requirement
4-2-1	Insertion & Withdrawal Force	Insert and withdraw connectors at the speed rate of $25 \pm 3$ mm/minute.		Refer to paragraph 5
4-2-2	Crimping Pull Out Force	Fix the crimped terminal, apply axial pull out force on the wire at the speed rate of $25 \pm 3$ mm/minute. (Based upon JIS C5402 6.8)	AWG #22	4.0kgf min.
			AWG #24	3.0kgf min.
			AWG #26	2.0kgf min.
			AWG #28	1.0kgf min.
4-2-3	Terminal Insertion Force	Insert the crimped terminal into the housing.		1.5kgf max.
4-2-4	Terminal/Housing Retention Force	Apply axial pull out force at the speed rate of $25 \pm 3$ mm/minute on the terminal assembled in the housing.		1.5kgf min.
4-2-5	Durability	When mated up to 50 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	40mΩ max.
4-2-6	Vibration	Amplitude: 1.5mm P-P Sweep time: 10-55-10 Hz in 1 minute Duration: 2 hours in each X.Y.Z. axes (Based upon MIL-STD-202 Method 201A)	Appearance	No Damage
			Contact Resistance	40mΩ max.
			Discontinuity	1μsec. max.
4-2-7	Physical Shock	490m/s <sup>2</sup> {50G}, 3 strokes in each X.Y.Z. axes. (Based upon JIS C0041/MIL-STD-202 Method 213B Cond. A)	Appearance	No Damage
			Contact Resistance	40mΩ max.
			Discontinuity	1μsec. max.



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### 4-3.ENVIRONMENTAL PERFORMANCE AND OTHERS

Test Description		Procedure	Requirement	
4-3-1	Temperature Rise	Carrying rated current load. (Based upon UL 498)	Temperature Rise	30°C max.
4-3-2	Heat Resistance	85 ± 2°C, 96 hours (Based upon JIS C0021/MIL-STD-202 Method 108A Cond. A)	Appearance	No Damage
			Contact Resistance	40mΩ max.
4-3-3	Cold Resistance	-25 ± 3°C, 96 hours (Based upon JIS C0020)	Appearance	No Damage
			Contact Resistance	40mΩ max.
4-3-4	Humidity	Temperature: 40 ± 2°C Relative Humidity: 90 ~ 95% Duration: 96 hours (Based upon JIS C0022/MIL-STD-202 Method 103B Cond. B)	Appearance	No Damage
			Contact Resistance	40mΩ max.
			Insulation Resistance	100MΩ min.
			Dielectric Withstanding Voltage	Must meet 4-1-3
4-3-5	Temperature Cycling	5 cycles of: a) - 55°C 30 minutes b) +85°C 30 minutes (Based upon JIS C0025)	Appearance	No Damage
			Contact Resistance	40mΩ max.
4-3-6	Salt Spray	24 ± 4 hours exposure to a salt spray from the 5 ± 1% solution at 35 ± 2°C. (Based upon JIS C0023/MIL-STD-202 Method 101D Cond. B)	Appearance	No Damage
			Contact Resistance	40mΩ max.
4-3-7	SO <sub>2</sub> Gas	24 hours exposure to 50 ± 5ppm. SO <sub>2</sub> gas at 40 ± 2°C.	Appearance	No Damage
			Contact Resistance	40mΩ max.
4-3-8	NH <sub>3</sub> Gas	40 minutes exposure to NH <sub>3</sub> gas evaporating from 28% Ammonia solution.	Appearance	No Damage
			Contact Resistance	40mΩ max.



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### 5.INSERTION/WITHDRAWAL FORCE:

No. of circuits	Insertion (kgf max.)	Withdrawal (kgf min.)	No. of circuits	Insertion (kgf max.)	Withdrawal (kgf min.)
Single	1.2	0.15	15	12.0	2.30
2	3.6	0.65	16	12.6	2.45
3	4.4	0.70	17	13.2	2.60
4	5.2	0.75	18	13.8	2.75
5	6.0	0.80	19	14.4	2.90
6	6.6	0.90	20	15.0	3.05
7	7.2	1.00			
8	7.8	1.15			
9	8.4	1.30			
10	9.0	1.45			
11	9.6	1.60			
12	10.2	1.85			
13	10.8	2.00			
14	11.4	2.15			