Data Sheet

Customer:

Product: Wire Wound Power Inductor (Shielded) – MCS Series

Size : 0420/0530/0612/0618/0624/0630

Issued Date: 17-Jan.-2023

Edition: Ver. 2

Record of change

Date	Ver.	Description	Page
10-Dec.-2018	1		
17-Jan.-2023	2	Revised Part No. & Size	

HITANO ENTERPRISE CORP.

7F-7, No. 3, Wu Chuan 1st Road, New Taipei Industrial Park,
New Taipei City, TAIWAN, R.O.C.
Tel: +886 2 2299 1331 (Rep.)
Fax: +886 2 2298 2466, 2298 2969

Prepared by	Checked by	Approved by	Accepted by (customer)
17-Jan.-2023	17-Jan.-2023	17-Jan.-2023	
Hwa Wu	Andy Hsu	Arthur Su	

Wire Wound Power Inductor (Shielded) – MCS Series

■ Features

* The MCS series are characterized by low profile, low DC resistance, and high current handling capacities.
* Because they are magnetically shielded, these parts can be used in high-density mounting configurations.
* Flat bottom surface ensures secure, reliable mounting.
* Provided in embossed carrier tape packaging for use with automatic mounting machines.

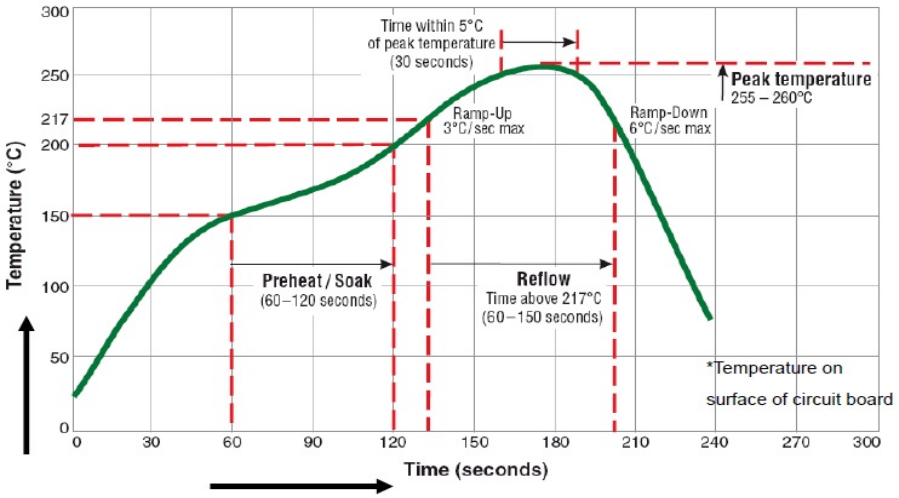
■ Application

* Power Supply Module.
* DC/DC Converters, etc.
* Other Various Electronic Appliance.

■ Part Numbering

MCS	0420	4R7	M	□□
SERIES	SIZE	INDUCTANCE	TOLERANCE	INTERNAL CODE
	0420	R47= 0.47uH	M= ±20%	
	0530	4R7= 4.7uH	N= ±30%	
	0612	100= 10uH		
	0618			
	0624			
	0630			

■ RoHS Reflow Soldering Profile

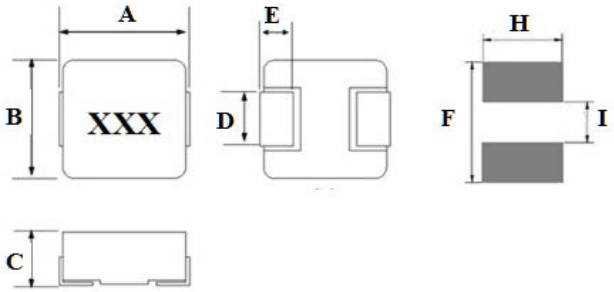


HITANO
ENTERPRISE CORP. ®

Wire Wound Power Inductor (Shielded) – MCS Series

MCS0420

■ SHAPE & DIMENSION : (Unit:mm)



A	4.45±0.25
B	4.0±0.30
C	1.8±0.20
D	1.5±0.3
E	0.8±0.3
F	5.2 Ref
H	2.5 Ref
I	2.2 Ref

■ ELECTRICAL SPECIFICATION :

Part No.	Inductance (uH) ±20%	DC Resistance (MΩ) Typical	DC Resistance (MΩ) Max.	Rated Current (A) Typical	Isat (A) Typical
MCS0420R10MN2	0.10	3.5	4.0	12.0	22.0
MCS0420R15MN2	0.15	6.0	6.6	9.0	13.0
MCS0420R22MN2	0.22	6.0	6.6	9.0	12.5
MCS0420R47MN2	0.47	12.5	14.0	7.0	9.5
MCS0420R56MN2	0.56	14.0	16.0	6.5	10.0
MCS0420R68MN2	0.68	16.0	18.0	6.0	9.0
MCS04201R0MN2	1.0	24.0	27.0	4.5	7.0
MCS04201R2MN2	1.2	24.0	27.0	4.5	7.0
MCS04201R5MN2	1.5	38.0	46.0	4.0	6.0
MCS04202R2MN2	2.2	52.0	58.0	3.0	5.0
MCS04203R3MN2	3.3	74.0	87.0	2.5	4.0
MCS04204R7MN2	4.7	98.0	110.0	2.2	3.5
MCS04205R6MN2	5.6	105.0	115.0	1.8	3.5
MCS04206R8MN2	6.8	160.0	175.0	1.5	2.5
MCS0420100MN1	10.0	256.0	282.0	1.2	2.2

Note :

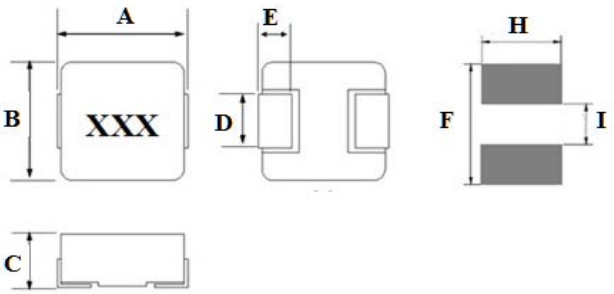
1. Test Instrument : CHROMA 16502 / Zentech1320+Zentech3305
2. Test Frequency : 100KHz/1V
3. All test data is referenced to 25°C ambient
4. Operating temperature range : -25°C~+125°C
5. Storage temperature range : -20°C~+40°C(<60% R.H.)
6. Rated current : DC current(A)that will cause an approximate ΔT of 40°C
7. Isat : DC current(A)that will cause Lo to drop approximately 30%
8. The part temperature(ambient+temp rise)should not exceed 125°C under worst case operating conditions. Circuit design,component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature , part temperature should be verified in the end application.

HITANO
ENTERPRISE CORP. ®

Wire Wound Power Inductor (Shielded) – MCS Series

MCS0530

■ SHAPE & DIMENSION : (Unit:mm)



A	5.4±0.30
B	5.2±0.30
C	3.0 Max.
D	2.2±0.3
E	1.2±0.2
F	6.0 Ref
H	2.5 Ref
I	2.2 Ref

■ ELECTRICAL SPECIFICATION :

Part No.	Inductance (uH) ±20%	DC Resistance (MΩ) Typical	DC Resistance (MΩ) Max.	Rated Current (A) Typical	Isat (A) Typical
MCS0530R20MN2	0.20	3.5	3.9	18.0	14.5
MCS0530R47MN2	0.47	7.4	8.5	13.5	12.0
MCS0530R68MN2	0.68	11.0	12.0	8.5	14.0
MCS05301R0MN2	1.0	13.0	14.0	7.0	11.0
MCS05301R2MN2	1.2	15.0	16.0	6.5	11.0
MCS05301R5MN2	1.5	20.0	25.0	6.0	8.5
MCS05302R2MN2	2.2	25.0	29.0	5.5	7.5
MCS05303R3MN2	3.3	32.0	38.0	5.0	6.0
MCS05304R7MN2	4.7	50.0	60.0	3.5	5.0
MCS05306R8MN2	6.8	75.0	90.0	3.0	4.0
MCS0530100MN2	10.0	110.0	125.0	2.5	3.5

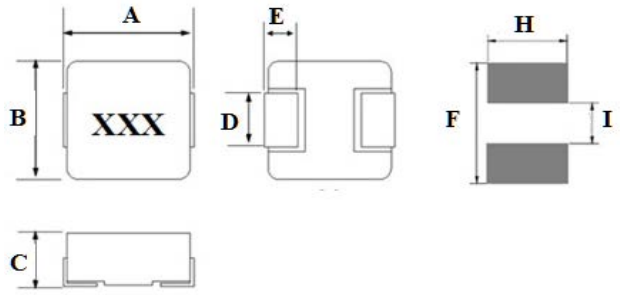
Note :

1. Test Instrument : CHROMA 16502 / Zentech1320+Zentech3305
2. Test Frequency : 100KHz/1V
3. All test data is referenced to 25°C ambient
4. Operating temperature range : -25°C~+125°C
5. Storage temperature range : -20°C~+40°C(<60% R.H.)
6. Rated current : DC current(A)that will cause an approximate ΔT of 40°C
7. Isat : DC current(A)that will cause Lo to drop approximately 30%
8. The part temperature(ambient+temp rise)should not exceed 125°C under worst case operating conditions. Circuit design,component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature,part temperature should be verified in the end application.

Wire Wound Power Inductor (Shielded) – MCS Series

MCS0612

■ SHAPE & DIMENSION : (Unit:mm)



A	7.0±0.3
B	6.6±0.3
C	1.0±0.2
D	2.5±0.3
E	1.8±0.3
F	7.7 Ref
H	3.0 Ref
I	2.5 Ref

■ ELECTRICAL SPECIFICATION :

Part No.	Inductance (uH)	DC Resistance (MΩ) Typical	DC Resistance (MΩ) Max.	Irms (A) Typical	Isat (A) Typical
MCS0612R15NT1	0.15	4.9	5.7	14.0	24.0
MCS0612R22NT1	0.22	6.5	7.5	11.0	19.0
MCS0612R33MT1	0.33	9.0	10.0	9.5	16.0
MCS0612R47MT1	0.47	13.0	17.0	8.5	12.0
MCS0612R68MT1	0.68	17.0	19.0	7.0	9.0
MCS06121R0MT1	1.0	27.0	30.0	6.0	7.0
MCS06121R2MT1	1.2	31.0	36.0	5.0	6.8
MCS06121R5MT1	1.5	35.0	40.0	4.5	6.5
MCS06122R2MT1	2.2	53.0	61.0	4.0	5.0
MCS06123R3MT1	3.3	90.0	103.0	3.2	4.0
MCS06124R7MT1	4.7	130.0	150.0	2.5	3.8
MCS06126R8MT1	6.8	172.0	198.0	2.1	3.0
MCS0612100MT1	10.0	280.0	290.0	1.8	2.5
MCS0612220MT1	22.0	540.0	600.0	1.2	1.7

Note :

1.Test Instrument : Inductance : HP4284A,CH11025,CH3302,CH1320,CH1320S LCR Meter
DCR : CH16502,Agilent33420A Micro ohm meter

2.Tolerance : M:±20% , N: ±30%

3. Test Frequency : 100KHz/1V

4. All test data is referenced to 25℃ ambient

5. Operating temperature range : -40℃~+125℃ (Including self-temperature rise)

6. Storage temperature : -10℃~+40℃ , 50~60% RH(Product with taping) / -40℃~+125℃ (on board)

7. Heat Rated current(Irms) will cause the coil temperature rise approximate ΔT of 40℃

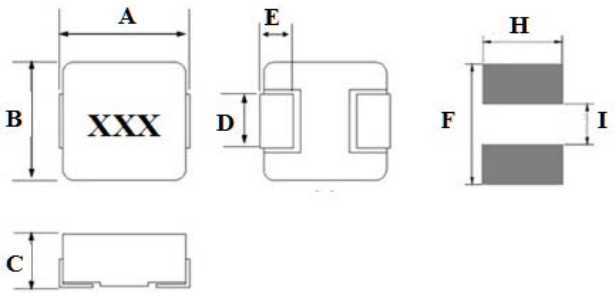
8. Saturation Current(Isat) will cause Lo to drop approximately 30%

9. The part temperature(ambient+temp rise)should not exceed 125℃ under worst case operating conditions. Circuit design,component, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature.Part temperature should be verified in the end application.

Wire Wound Power Inductor (Shielded) – MCS Series

MCS0618

■ SHAPE & DIMENSION : (Unit:mm)



A	7.0±0.3
B	6.6±0.2
C	1.6±0.2
D	3.0±0.3
E	1.6±0.3
F	8.4 Ref
H	3.5 Ref
I	3.7 Ref

■ ELECTRICAL SPECIFICATION :

Part No.	Inductance (uH) ±20%	DC Resistance (MΩ) Typical	DC Resistance (MΩ) Max.	Idc (A) Typical	Isat (A) Typical
MCS0618R10ME1	0.1	2.0	2.3	25.0	38.0
MCS0618R22ME1	0.22	3.0	3.5	22.0	24.0
MCS0618R47ME1	0.47	8.0	8.4	11.5	18.0
MCS0618R68ME1	0.68	10.0	12.0	9.5	17.0
MCS06181R0ME1	1.0	13.0	16.0	8.5	14.0
MCS06181R5ME1	1.5	20.0	26.0	8.0	9.2
MCS06182R2ME1	2.2	28.0	35.0	7.0	8.0
MCS06183R3ME1	3.3	43.0	50.0	4.5	6.5
MCS06184R7ME1	4.7	56.0	62.0	4.0	5.0
MCS06186R8ME1	6.8	101.0	110.0	3.0	4.5
MCS0618100ME1	10.0	140.0	155.0	2.3	2.5
MCS0618220ME1	22.0	310.0	350.0	1.8	2.3

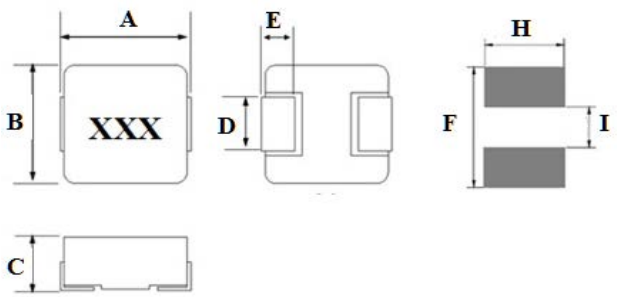
Note :

1. Test Instrument : Wayne kerr 3260B/G LCR Meter / Wayne kerr 3265B Bias Current Source
2. Test Frequency : 100KHz/1V
3. All test data is referenced to 25°C ambient
4. Operating temperature range : -55°C~+125°C
5. Storage temperature range : -55°C~+125°C
6. Idc(A) : DC current(A) that will cause an approximate ΔT of 40°C (reference ambient temperature is 25°C)
7. Isat(A) : DC current(A) that will cause Lo to drop approximately 30%
8. The part temperature(ambient+temp rise)should not exceed 125°C under worst case operating conditions. Circuit design,component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature . Part temperature should be verified in the end application.

Wire Wound Power Inductor (Shielded) – MCS Series

MCS0624

■ SHAPE & DIMENSION : (Unit:mm)



A	7.0±0.3
B	6.6±0.2
C	2.2±0.2
D	3.0±0.3
E	1.6±0.3
F	8.4 Ref
H	3.5 Ref
I	3.7 Ref

■ ELECTRICAL SPECIFICATION :

Part No.	Inductance (uH) ±20%	DC Resistance (MΩ) Typical	DC Resistance (MΩ) Max.	Idc (A) Typical	Isat (A) Typical
MCS0624R22ME1	0.22	2.5	3.0	21.0	34.0
MCS0624R33ME1	0.33	3.5	4.1	18.0	24.5
MCS0624R47ME1	0.47	4.5	5.1	15.0	22.0
MCS0624R56ME1	0.56	5.5	6.5	13.0	17.0
MCS0624R68ME1	0.68	6.2	7.0	12.0	16.0
MCS06241R0ME1	1.0	11.0	13.5	9.0	16.0
MCS06241R5ME1	1.5	17.0	20.0	9.0	13.5
MCS06242R2ME1	2.2	23.0	28.0	7.0	11.0
MCS06243R3ME1	3.3	31.0	39.0	5.5	8.5
MCS06244R7ME1	4.7	45.0	54.0	5.0	7.5
MCS06246R8ME1	6.8	57.0	70.0	4.0	6.0
MCS0624100ME1	10.0	92.0	101.0	3.1	4.0
MCS0624150ME1	15.0	145.0	160.0	2.5	3.3
MCS0624220ME1	22.0	220.0	230.0	2.0	2.5

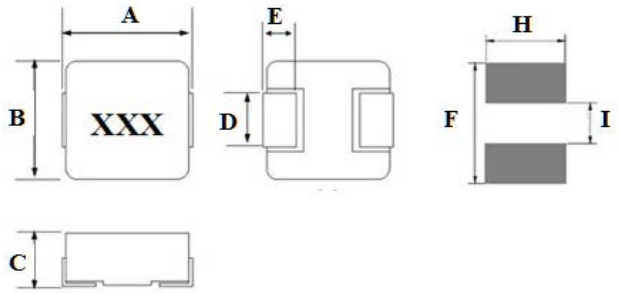
Note :

1. Test Instrument : Wayne kerr 3260B/G LCR Meter / Wayne kerr 3265B Bias Current Source
2. Test Frequency : 100KHz/1V
3. All test data is referenced to 25°C ambient
4. Operating temperature range : -55°C~+125°C
5. Storage temperature range : -55°C~+125°C
6. Idc(A) : DC current(A) that will cause an approximate ΔT of 40°C (reference ambient temperature is 25°C)
7. Isat(A) : DC current(A) that will cause Lo to drop approximately 30%
8. The part temperature(ambient+temp rise)should not exceed 125°C under worst case operating conditions. Circuit design,component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature . Part temperature should be verified in the end application.

Wire Wound Power Inductor (Shielded) – MCS Series

MCS0630

■ SHAPE & DIMENSION : (Unit:mm)



A	7.3 Max.
B	6.6±0.2
C	3.0 Max.
D	3.0±0.3
E	1.6±0.3
F	7.4 Ref
H	3.5 Ref
I	3.7 Ref

■ ELECTRICAL SPECIFICATION :

Part No.	Inductance (uH) ±20%	DC Resistance (MΩ) Typical	DC Resistance (MΩ) Max.	Rated Current (A) Typical	Isat (A) Typical
MCS0630R15MN2	0.15	2.0	2.5	27.0	45.0
MCS0630R22MN2	0.22	2.5	2.8	23.0	40.0
MCS0630R33MN2	0.33	3.5	3.9	20.0	30.0
MCS0630R47MN2	0.47	4.0	4.2	17.5	26.0
MCS0630R56MN2	0.56	4.7	5.0	16.5	25.5
MCS0630R68MN2	0.68	5.0	5.5	15.5	25.0
MCS0630R82MN2	0.82	6.7	8.0	13.0	20.0
MCS06301R0MN2	1.0	9.0	10.0	11.0	20.0
MCS06301R5MN2	1.5	14.0	15.0	9.0	16.0
MCS06302R2MN2	2.2	17.0	20.0	8.0	12.0
MCS06303R3MN2	3.3	28.0	30.0	6.0	10.0
MCS06304R7MN2	4.7	37.0	40.0	5.5	7.0
MCS06305R6MN2	5.6	40.0	44.0	5.5	6.0
MCS06306R8MN2	6.8	54.0	60.0	4.5	6.5
MCS06308R2MN1	8.2	54.0	60.0	4.5	6.0
MCS0630100MN1	10.0	62.0	68.0	4.0	5.5

Note :

1. Test Instrument : CHROMA 16502 / Zentech1320+Zentech3305
2. Test Frequency : 100KHz/1V
3. All test data is referenced to 25°C ambient
4. Operating temperature range : -25°C~+125°C
5. Storage temperature range : -20°C~+40°C(<60% R.H.)
6. Rated current : DC current(A)that will cause an approximate ΔT of 40°C
7. Isat : DC current(A)that will cause Lo to drop approximately 30%
8. The part temperature(ambient+temp rise)should not exceed 125°C under worst case operating conditions. Circuit design,component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature,part temperature should be verified in the end application.

Wire Wound Power Inductor (Shielded) – MCS Series

MECHANICAL RELIABILITY

Test	Specification & Requirement	Test Method
Solderability	The surface of terminal/pin tested shall be covered with new solder at least 90%	Terminal shall be immersed for 5~10 sec. in flux at room temperature. Dip sample unto solder bath containing solder at 245±3℃ for 3±0.5 seconds
Shock	Inductance changed within ±5% without mechanical damage.	Drop down with 981m/s2(100G) shock Attitude upon a rubber block method shock testing machine, 3 tests
Vibration	Inductance changed within ±5% without mechanical damage.	Vibration frequency: 10 Hz to 55 Hz to 10 Hz 60 sec. cycle Vibration time: 2 hours

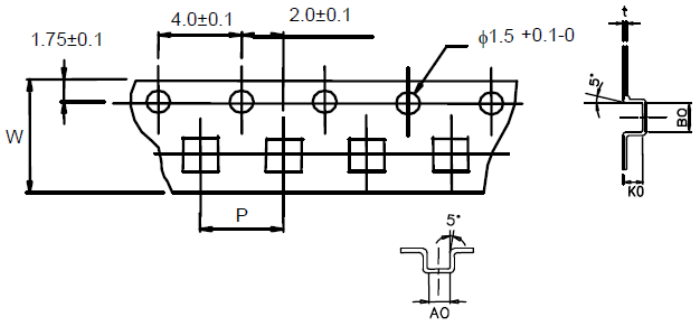
ENDURANCE RELIABILITY

Test	Specification & Requirement	Test Method
Thermal shock	Inductance changed within ±5% without mechanical damage.	-55℃, (30mins) -> room temp. (5mins) ->125℃, (30mins) ->room temp.(5mins) 100 cycles
Heat resistance	Inductance changed within ±5% without mechanical damage.	Apply IDC current @85℃ ambient Duration: 1000 hours
Humidity Resistance	Inductance changed within ±5% without mechanical damage.	Apply IDC current @60℃ ambient Humidity: 90% ~ 95% Duration: 1000 hours
Low Temp. Storage	Inductance changed within ±5% without mechanical damage.	Stroage Temp. -25℃±2℃for total 1000 hours then measured at room temp.
High Temp Storage	Inductance changed within ±5% without mechanical damage.	Stroage Temp. +1225℃±2℃for total 1000 hours then measured at room temp.

Wire Wound Power Inductor (Shielded) – MCS Series

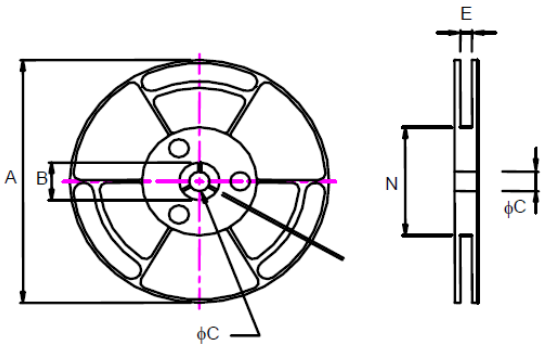
Tape & Reel Packaging Dimension

Tape Dimension :



Size	P	W	t	A0	B0	K0
0420	8.0±0.1	12±0.3	0.3±0.05	4.7±0.1	4.4±0.1	2.5±0.1
0530	8.0±0.1	12±0.3	0.4±0.05	5.7±0.1	5.9±0.1	3.6±0.1
0612	12±0.1	16±0.3	0.35±0.05	7.0±0.1	7.7±0.1	1.5±0.1
0618	12.0±0.1	16±0.3	0.31±0.05	7.2±0.1	7.5±0.1	2.3±0.15
0624	12.0±0.1	16±0.3	0.31±0.05	7.2±0.1	7.5±0.1	3.6±0.15
0630	12.0±0.1	16±0.3	0.4±0.05	6.9±0.1	7.6±0.1	3.4±0.1

Reel Dimension :



Size	A	B	C	E	N
0420	330±0.2	25±0.5	13.5±0.5	13±0.5	100 Min.
0530	330±0.2	25±0.5	13±0.5	12.5±0.5	100 Min.
0612	330±0.2	25±0.5	13+0.5/-0.2	16.4+2/-0	100±2.0
0618	330±0.2	25±0.5	13±1.0	16.5±0.2	100±1.0
0624	330±0.2	25±0.5	13±1.0	16.5±0.2	100±1.0
0630	330±0.2	25±0.5	13±0.5	16.6±0.5	100 Min.