Innovative Service Around the Globe YAGEO

DATA SHEET

METAL FILM RESISTORS

Professional

MF0 Series

±0.5%, ±1%, ±2%, ±5%

0.4W AND 0.6W

RoHS compliant & Halogen Free

YAGEO

Product specification – April 3, 2024 V.3

APPLICATIONS

- All general purpose applications
- Power applications

FEATURES

- AEC-Q200 qualified
- Wide resistance range
- Miniature & high power rating
- High stability
- RoHS compliant & halogen-free

ORDERING INFORMATION

Part number of the professional t metal film resistor are identified by the series, power rating, tolerance, packing, temperature coefficient, forming and resistance value.

PART NUMBER

MF0	204	F	T	F	52-	100R
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) SERIES

MF0 Series

(2) POWER RATING

204 = 0.4W
207 = 0.6W

(3) TOLERANCE

D = ±0.5%
F = ±1%
G = ±2%
J = ±5%
- = for 0R

(4) PACKAGING

R = Reel Pack
T = Box Pack
B = Bulk

(5) TEMPERATURE COEFFICIENT OF RESISTANCE

E=±50ppm/°C
F=±100ppm/°C
- = for 0R

(6) FORMING

26- = 26mm
52- = 52.4mm
52B = 52.4mm, Φd =0.45±0.02mm
52C = 52.4mm, Φd= 0.5±0.02mm
52H = 52.4mm, non-painting on soldering spots
PN = PANAsert
AV = AVIsert
M = M-Type Forming
MB = M-form W/flat
MT = MT Type Forming
FT = FT Type Forming

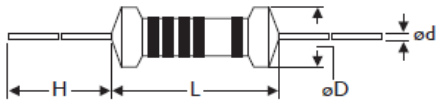
Note: 26mm and 52.4mm represent dimension A of the axial type, please refer to the category of AXIAL/REEL TAPE SPECIFICATION for the detail.

(7) RESISTANCE VALUE

E24 & E96 Series
Example:
100R = 100Ω, 10K = 10,000Ω, 1M = 1,000,000Ω

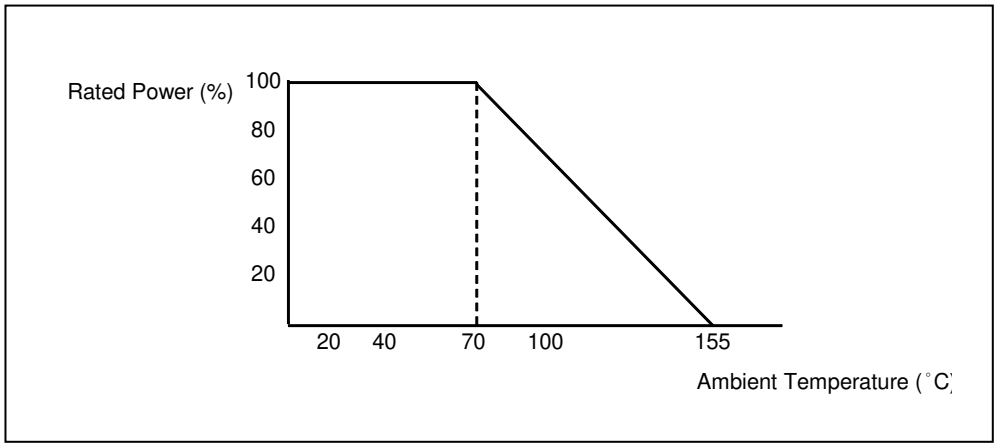
DIMENSIONS

Unit: mm



Miniature	L	ψD	H	ψd
MF0204	3.4 ± 0.3	1.9 ± 0.2	28 ± 2.0	0.45 ± 0.05
MF0207	6.3 ± 0.5	2.4 ± 0.2	28 ± 2.0	0.55 ± 0.05

DERATING CURVE



ELECTRICAL CHARACTERISTICS

CHARACTERISTICS	MF0204	MF0207
Power Rating at 70 °C	0.4W	0.6W
Maximum Working Voltage	250V	350V
Maximum Overload Voltage	500V	700V
Voltage Proof on Insulation	300V	500V
Resistance Range	1Ω ~4M7Ω for E24&E96 series value	
Operating Temp. Range	- 55°C to +155°C	
Temperature Coefficient	±50ppm/°C, ±100ppm/°C	

Note: For resistance value out of above range is by request.

ELECTRICAL CHARACTERISTICS FOR 0R

TYPE	MF0204	MF0207
Power Rating at 70 °C	0.4W	0.6W
Maximum Current Rating at 70 °C	1.5A	2.5A
Voltage Proof on Insulation	300V	500V
Resistance Range	0R	
Operating Temp. Range	- 55°C to +155°C	

TEST AND REQUIRMENTS

TEST	TEST METHOD	PROCEDURE	APPRAISE
Short Time Overload	IEC 60115-1 4.13	2.5 times RCWV for 5 sec.(Not more than maximum overload voltage)	±0.25%+0.05Ω for MF0207 type ±1.0 % +0.05Ω for MF0204 type
Voltage Proof on Insulation	IEC 60115-1 4.7	In V-Block for 60 sec. test voltage as above table	No Breakdown
Temperature Coefficient	IEC 60115-1 4.8	Between -55°C to +155°C	By Type
Insulation Resistance	IEC 60115-1 4.6	In V-Block for 60 sec.	>10,000MΩ
Solderability	IEC 60115-1 4.17	245±5°C for 3±0.5 Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5±0.5 Min. with ultrasonic	No deterioration of coatings and markings
Robustness of Terminations	IEC 60115-1 4.16	Direct load for 10 Sec. in the direction of the terminal leads	≥2.5Kg(24.5N)
Periodic-pulse Overload	IEC 60115-1 4.39	4 times RCWV(or Umax., whichever less) 10,000 cycles (1 Sec. on, 25 Sec.off)	±1.0%+0.05Ω
Damp Heat Steady State	IEC 60115-1 4.24	40±2°C,90-95% RH for 56 days, loaded with 0.1 times RCWV(or Umax., whichever less)	±1.5%+0.05Ω
Endurance at 70°C	IEC 60115-1 4.25	70±2°C at RCWV(or Umax., whichever less) for 1,000 Hr.(1.5 Hr.on,0.5 Hr. off)	±1.5%+0.05Ω
Temperature Cycling	IEC 60115-1 4.19	-55°C ➔ Room Temp. ➔ +155°C ➔ Room Temp.(5 cycles)	±0.75%+0.05Ω
Resistance to Soldering Heat	IEC 60115-1 4.18	260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body	±0.25%+0.05Ω

Note:.

RCWV (Rated Continuous Working Voltage):

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

$V=\sqrt{(P \times R)}$
or max. working voltage whichever is less

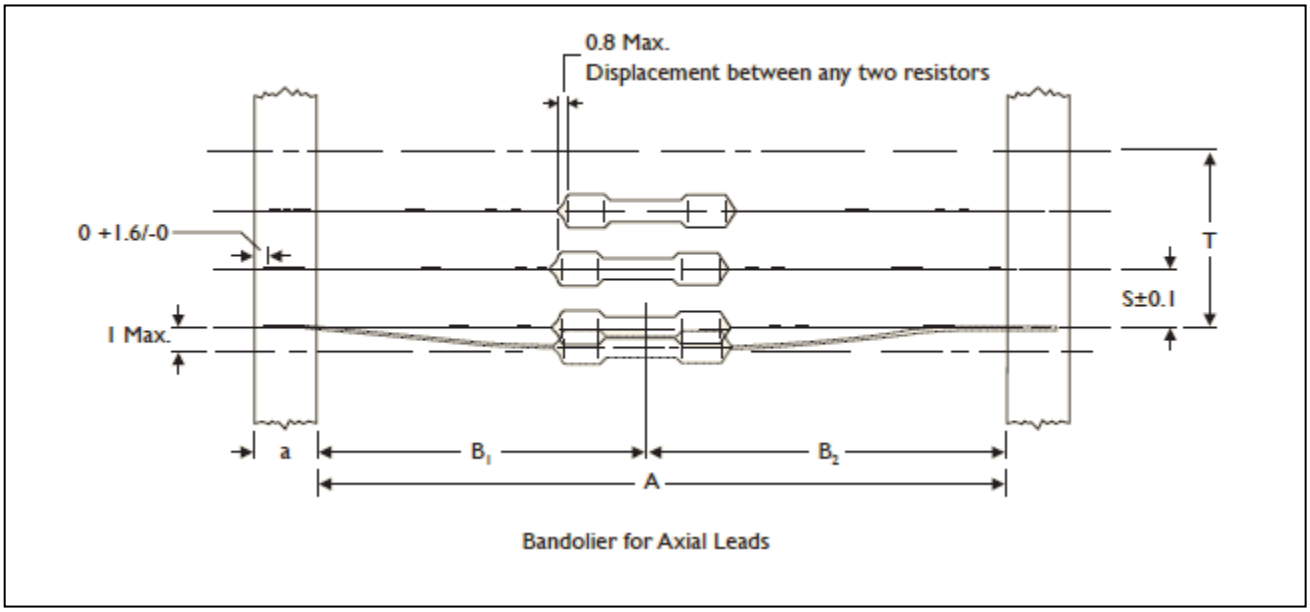
Where

V=Continuous rated DC or
AC (rms) working voltage (V)

P=Rated power (W)

R=Resistance value (Ω)

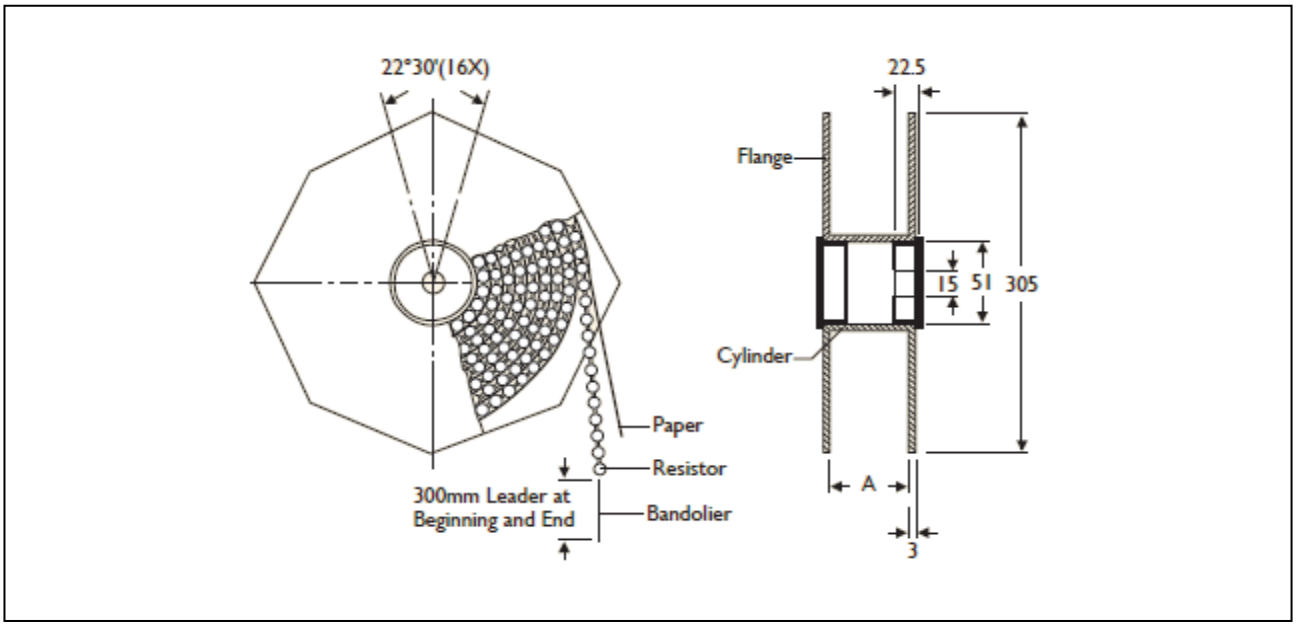
AXIAL / REEL TAPE SPECIFICATION



Unit: mm

Miniature	a	A	B1-B2 (Max.)	S (spacing)	T (max. deviation of spacing)
MF0204	6 ± 0.5	52.4 ± 1.5	1.2	5	0.5 mm per 5 spacing
		26.0 ± 1.5	1		
MF0207	6 ± 0.5	52.4 ± 1.5	1.2	5	
		26.0 ± 1.5	1		

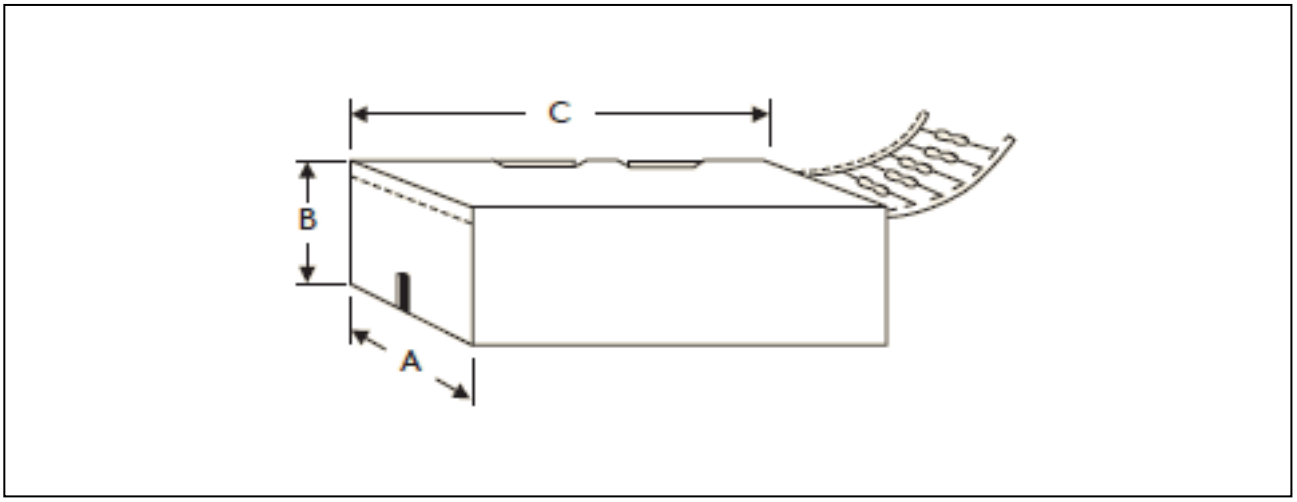
TAPE ON REEL PACKING



TYPE Unit: mm/piece

Miniature	Across Flange(A)	B	Quantity Per Reel
MF0204	66.5	75.5	5,000
MF0207	66.5	75.5	5,000

TAPE ON BOX PACKING



TYPE DIMENSIONS Unit: mm/piece

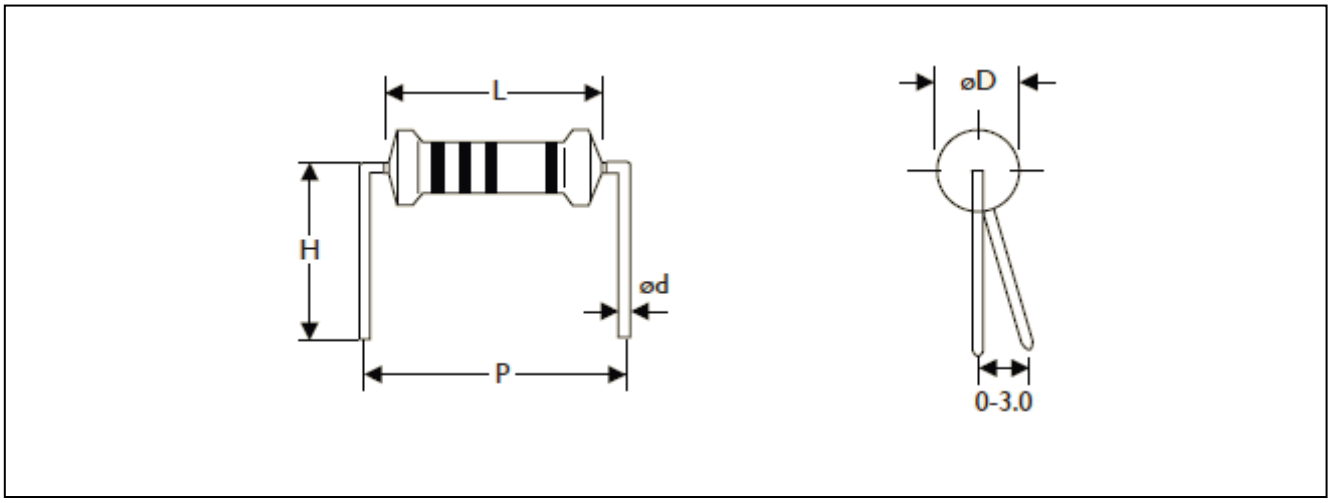
Miniature	A	B	C	Quantity Per Box
MF0204	48	102	255	5,000
MF0204	81	70	260	5,000
MF0207	48	102	255	5,000
MF0207	81	104	260	5,000

BULK PACKING

Miniature	Piece/Per Inner Box	Bag/Per Inner Box	Piece Per Bag
MF0204	10,000	10	1,000
MF0207	10,000	10	1,000

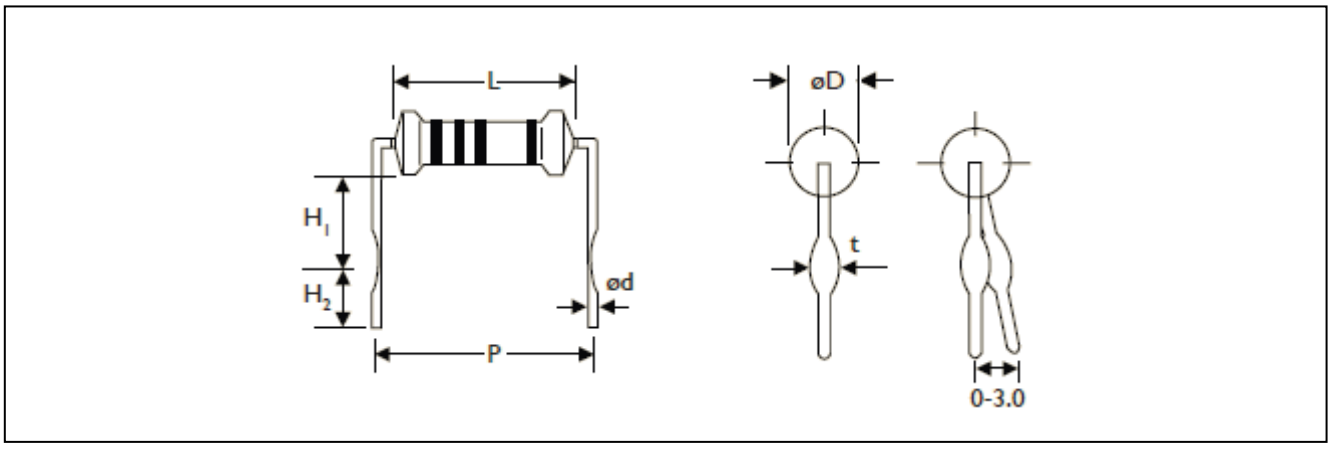
FORMING

M TYPE



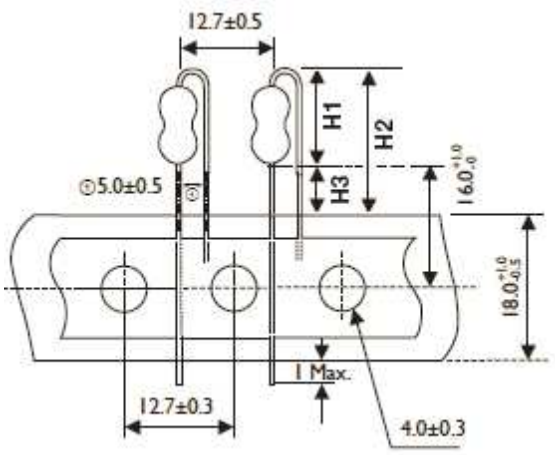
TYPE	DIMENSIONS				Unit: mm
Miniature	**L**	**ψD**	**ψd**	**P**	**H**
MF0204	3.4± 0.3	1.9 ± 0.2	0.45 ± 0.05	6.0 ± 1	10.0 ±1
MF0207	6.3 ± 0.5	2.4 ± 0.2	0.55 ± 0.05	10.0 ± 1	10.0 ± 1

MB TYPE



TYPE	DIMENSIONS						Unit: mm
Miniature	**L**	**ψD**	**ψd**	**P**	**H1**	**H2**	**t**
MF0207	6.3 ± 0.5	2.4 ± 0.2	0.55 ± 0.05	10.0 ± 1	6.0 ± 1	5.0 ± 1	1.2 ± 0.2

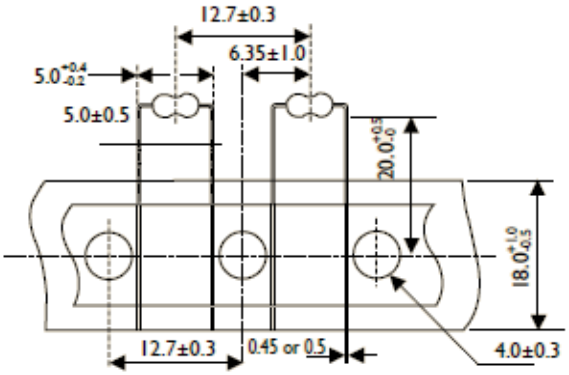
FT TYPE (Taping Pack)



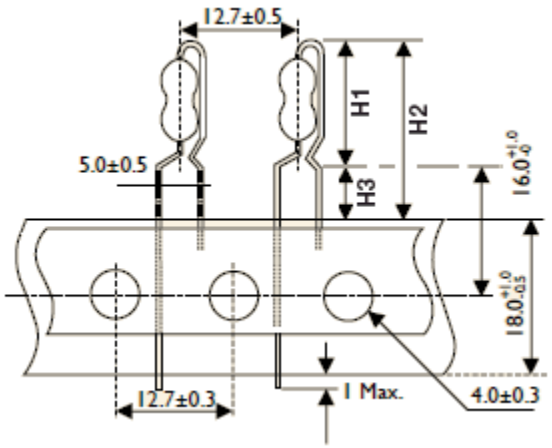
TYPE	DIMENSIONS		Unit: mm
Miniature	**H1 Max.**	**H2 Max.**	**H3 Max.**
MF0207	10	18.5	8.5

MT TYPE (Taping Pack)

Rated Watts : 0.4W

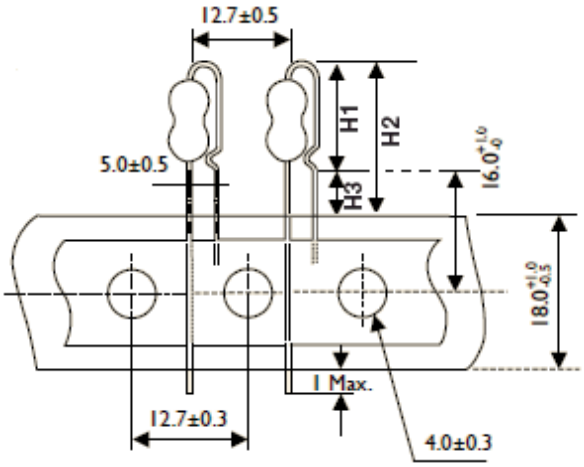


PN TYPE (Taping Pack)



TYPE	DIMENSIONS		Unit: mm
Miniature	**H1 Max.**	**H2 Max.**	**H3 Max.**
MF0207	13	21.5	8.5

AV TYPE (Taping Pack)



TYPE	DIMENSIONS		Unit: mm
Miniature	**H1 Max.**	**H2 Max.**	**H3 Max.**
MF0207	11.5	20	8.5

MARKING

COLOR	1st BAND	2nd BAND	3rd BAND	MULTIPLIER	TOLERANCE
BLACK	0	0	0	1Ω	
BROWN	1	1	1	10Ω	± 1% (F)
RED	2	2	2	100Ω	± 2% (G)
ORANGE	3	3	3	1KΩ	
YELLOW	4	4	4	10KΩ	
GREEN	5	5	5	100K	± 0.5 % (D)
BLUE	6	6	6	1MΩ	
VIOLET	7	7	7	10MΩ	
GREY	8	8	8	0.001Ω	
WHITE	9	9	9	0.0001Ω	
GOLD				0.1Ω	± 5 % (J)
SILVER				0.01Ω	

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 3	Apr.2, 2024	-	- Added forming code description for part number
Version 2	Sep.5, 2023	-	- Update legal disclaimer and footer version numbers
Version 1	Mar.1, 2022		-1. Updated power rating on second page -2. Independent electrical characteristics of 0R
Version 0	Aug.2, 2021	-	- First issue of this specification

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