


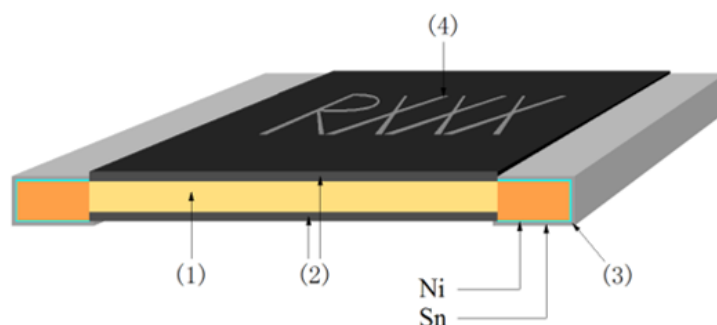
Product Family: 2-Terminal, Current Sensing Power Resistor

Part Number Series: D1MPA*2512 Series Auto


	Construction: <ul style="list-style-type: none"> • Metal strip construction • Epoxy-resin overcoat • 100% matte tin over Ni terminations • Halogen Free • RoHS compliant and Pb Free • Inherently Anti-Sulfur 	Features: <ul style="list-style-type: none"> • 2512 English case size • Power up to 3W • Resistance from 0.5mΩ~10mΩ • Tolerance of ±1.0% • TCR down to ±50ppm/°C • Low profile of 0.20in max. • AEC-Q200 qualified • Moisture Sensitivity Level (MSL) = 1
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Description:

These low resistance, metal strip, current sensing chip resistors exhibit excellent performance with a very low height profile. They are useful in many current sensing applications. High volume production suitable for commercial and special applications.

Product Construction:


Number	Description
1	Complex alloy (MnCu, Cu)
2	Protective coating (UL-94-V0, flame retardant epoxy)
3	Plating layer (Ni, Sn)
4	Marking

Part Numbering: Ex: D1MPAB2512RR001FAA-T4

Series Name	Power Rating	English Size (Metric Size)	Temperature Coefficient of Resistance (TCR)	Resistance Value	Resistance Tolerance	Internal Code	Automotive Grade	T&R Packaging Quantity
D1MPA	B = 2W C = 3W	2512 (6432)	Q = ±50ppm/°C R = ±100ppm/°C (Refer to tables)	For all sizes, use 4 digit code for all values. "R" denotes decimal position as necessary. Ex. R001 = 0.001Ω (4 digits)	F = ±1.0%	A = Wrapped Electrodes	A = AEC-Q200	-T4 = 4,000 pcs/reel

Product Dimensions:

The image displays three views of a resistor component. The **Top** view shows a rectangular resistor with a central black area labeled 'RXXX', flanked by hatched areas. Dimensions W (width) and L (length) are indicated. The **Bottom** view shows the same resistor from the opposite side, with dimensions W , L , and A (thickness) indicated. The **Side** view shows the resistor's profile, with dimensions T (thickness) and A (width) indicated.

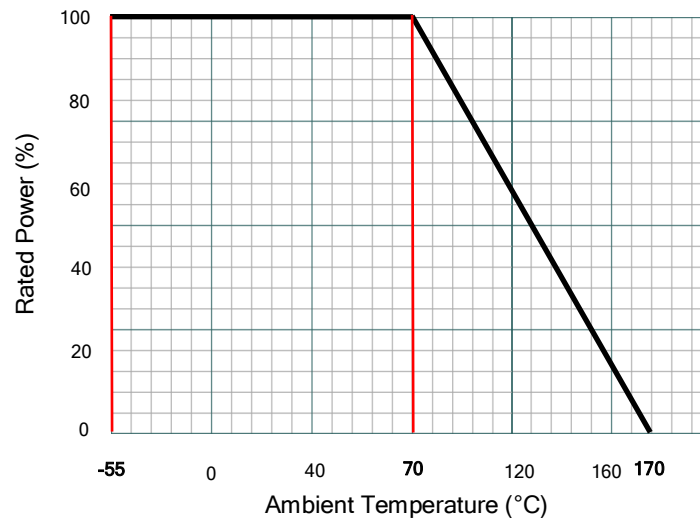
All dimensions shown in inches, mm in parentheses.

Dimension (Metric)	Resistance Range	W	L	T	A
D1MPAB2512 (6432)	1mΩ~4mΩ	0.126 ±0.012 (3.20 ±0.30)	0.252 ±0.012 (6.40 ±0.30)	0.035 ±0.008 (0.90 ±0.20)	0.075 ±0.010 (1.90 ±0.25)
	5mΩ~10mΩ				0.031 ±0.010 (0.80 ±0.25)
D1MPAC2512 (6432)	1mΩ				0.031 ±0.010 (0.80 ±0.25)
	2mΩ~4mΩ				0.075 ±0.010 (1.90 ±0.25)
	5mΩ~9mΩ, 10mΩ				0.031 ±0.010 (0.80 ±0.25)

Electrical Specifications:

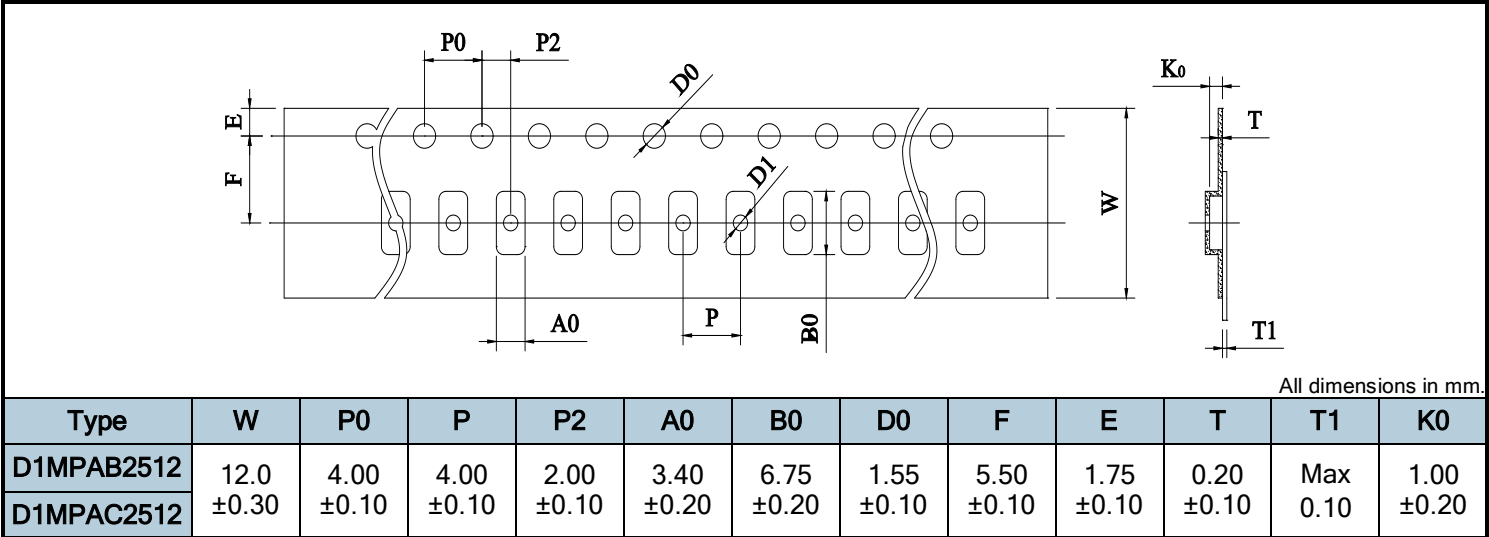
Type	D1MPAB2512	
Metric Size	6432	
Power Rating	2W	
Resistance Range	1mΩ	2mΩ~10mΩ
Resistance Tolerance (code)	±1.0%(F)	
TCR ppm/°C (code)	±100(R)	±50(Q)
Rated Voltage	$\sqrt{(\text{Power} \times \text{Resistance})}$	
Operating Temp. Range	-55°C~+170°C	
Packaging (code)	4,000 pcs/reel (-T4)	

Type	D1MPAC2512	
Metric Size	6432	
Power Rating	3W	
Resistance Range	1mΩ	2mΩ~10mΩ
Resistance Tolerance (code)	±1.0%(F)	
TCR ppm/°C (code)	±100(R)	±50(Q)
Rated Voltage	$\sqrt{(\text{Power} \times \text{Resistance})}$	
Operating Temp. Range	-55°C~+170°C	
Packaging (code)	4,000 pcs/reel (-T4)	

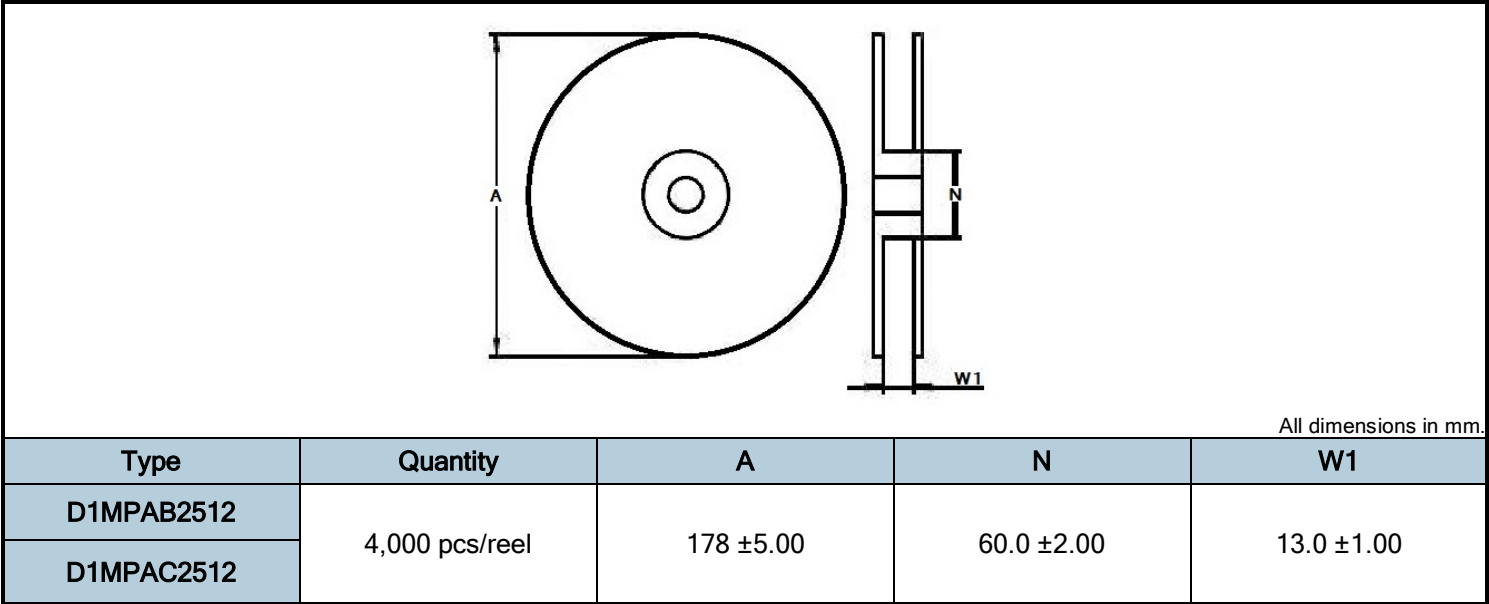
Power Derating Curve:**AEC-Q200 Test Requirements (Table 7):**

AEC Test #	Test	Procedure	Specification
3	High Temp. Exposure (Storage) MIL-STD-202, Method 108	Test Temp 125°C +/-3°C Test Period: 1,000 hours, no Electrical Load	±1.0%
4	Temp. Cycling (Thermal Shock) JESD22 Method JA-104	Repeat 1,000 cycles as follows: -55°C +/-3°C for 30 minutes +125°C +/-3°C for 30 minutes Transition time of 1 minute max	±1.0%
7	Biased Humidity MIL-STD-202, Method 103	Test conditions: 85°C and 85% RH 10% of rated power Test Period 1,000 hours	±1.0%
8	Load Life (Operational Life) MIL-STD-202, Method 108	Test Temperature: 125°C +/-3°C Applied voltage: rated power (derated Power will be required if temp exceeds the derating point of part) Test Period: 1,000 hours (condition D)	±1.0%
12	Resistance to Solvents MIL-STD-202, Method 215	3 minute soak, 3 repetition 2-3 ounce force 10 strokes/repetition	No damage
13	Mechanical Shock MIL-STD-202, Method 213	Force: 100G peak Test duration: 6 ms Half-sine waveform Velocity: 12.3ft/sec	±1.0%
14	Vibration MIL-STD-202, Method 204	Frequency: 10-2,000 Hz Acceleration: 5G Test duration: 20 minutes, 12 cycles	±1.0%
15	Resistance to soldering heat MIL-STD-202, Method 210	Condition B (Solder dip, no pre-heat) 260°C +/-5°C	±1.0%
17	ESD AEC-Q200-002	HBM, 100pF, 1.5k ohms Repetition: 5 times	±1.0%
18	Solderability J-STD-002	Non-activated flux dip: 5-10 seconds SAC solder dip: 2 +/-0.5 seconds at 245°C +/-5°C	95% coverage
20	Flammability UL-94	V-0 or V-1 are acceptable Electrical test not required	Provide certificate
21	Board Flex AEC-Q200-005	90 mm span between fulcrums 2 mm bend 60 seconds minimum holding time	±1.0%
22	Terminal Strength (SMD) AEC-Q200-006	Force of 17.7 N 60 seconds	±1.0%
24	Flame Retardance AEC-Q200-001	Mounted parts subjected to voltages from 9.0 to 32 VDC (current clamped up to 500A) in 1.0 VDC increments. Voltage applied for 1 hour minimum or until failure occurs	Must meet AEC-Q200 requirements

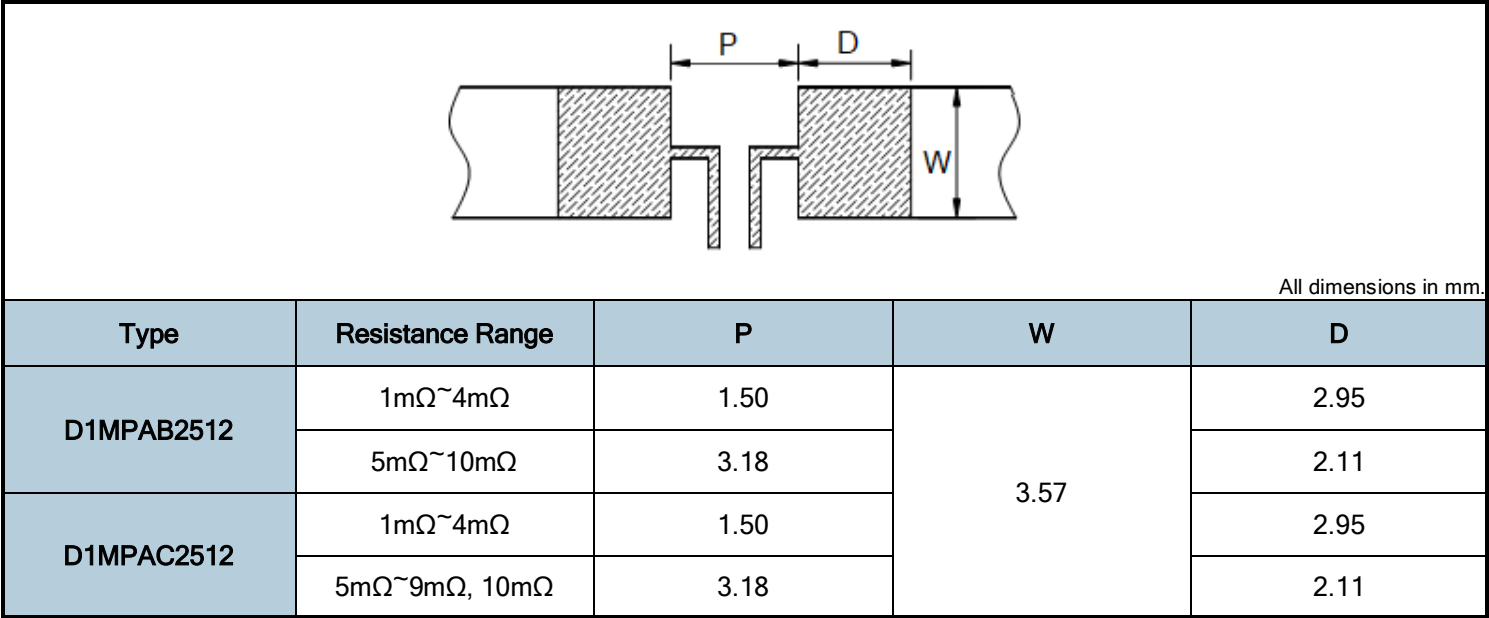
Plastic Tape Dimensions:

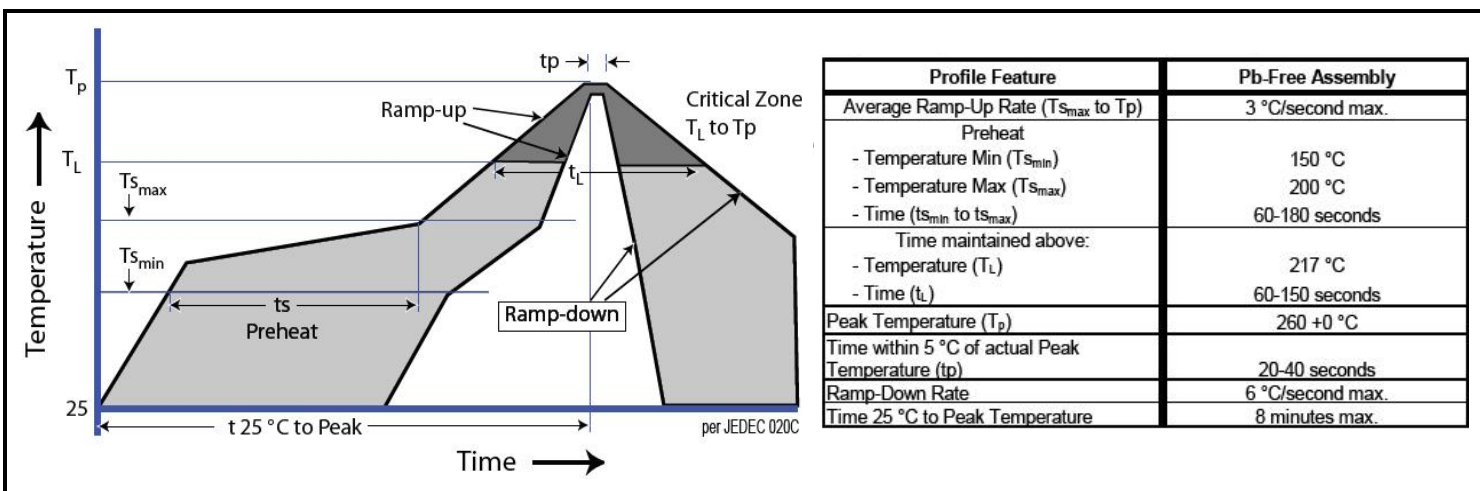
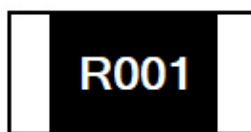


Reel Dimensions:



Recommended Land Pattern:



Soldering Profile:**Marking Information:****2512: 4 digit code****Examples of 4 Digit Resistance Codes for 2512**

R-Value	1mΩ	2mΩ	5mΩ	10mΩ
Code	R001	R002	R005	R010

Storage Conditions:**Environmental Conditions:**

Products should be stored under the following environmental conditions:

- Temperature: +5 to +35°C
- Humidity: 45 to 85% relative humidity
- Do not keep products in environments where they may be subject to particulate contamination or harmful gases such as sulfuric acid or hydrogen chloride as it may cause oxidization on electrodes, resulting in poor solderability.
- Products should be stored in a space that does not expose it to high temperatures, vibration, or direct sunlight.
- Products should be stored in the original airtight packaging until use.