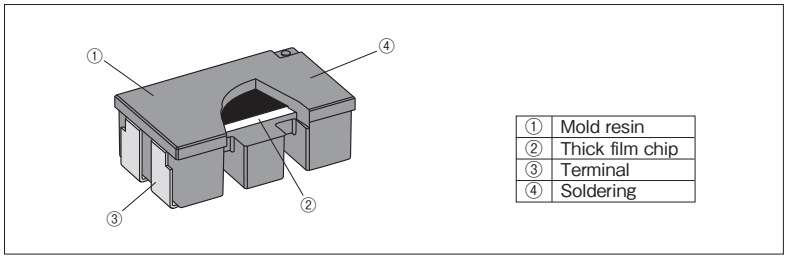
MHVD Thick film High Voltage Divider molded type



Coating color : Black

■Construction



①	Mold resin
②	Thick film chip
③	Terminal
④	Soldering

■Features

- Network resistors for High voltage divider.
- Max. resistance value 51MΩ, Max. working voltage 1500V, Max. resistance ratio 500:1.
- Relative precision of pair resistors are guaranteed.
- Creepage is 12.5mm, which is suitable for 1250V on IEC-60664-1 pollution degree 2.
- Higher integration saves board space and overall assembly costs.
- Suitable for reflow soldering.
- Products meet EU-RoHS requirements.
- AEC-Q200 Qualified.

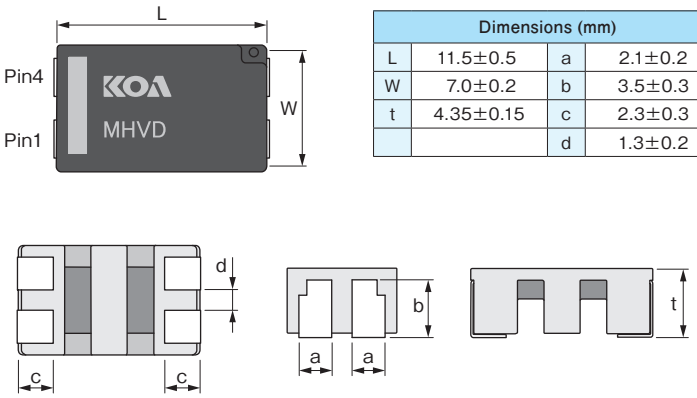
■Applications

- High voltage divider for HEV/EV.
- High magnification of the operational amplifier circuit.

■Reference Standards

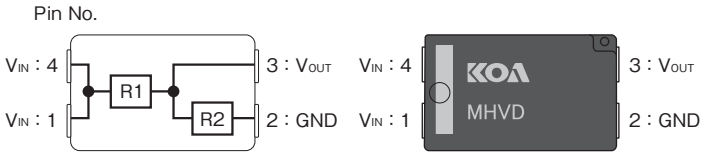
IEC 60115-6
JIS C 5201-6
IEC 60664-1
JIS C 60664-1

■Dimensions



Dimensions (mm)			
L	11.5±0.5	a	2.1±0.2
W	7.0±0.2	b	3.5±0.3
t	4.35±0.15	c	2.3±0.3
		d	1.3±0.2

■Circuit Construction



■Type Designation

Example

MHVD	A04	T	TEB	XXXXXX
Circuit Code	Package Symbol	Terminal Surface Material	Taping Number	Product Identification Number
MHVD : Thick film High Voltage Divider molded type	Package type symbol +Number of pins	T : Sn	TEB:12mm pitch plastic embossed	

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.

■Ratings

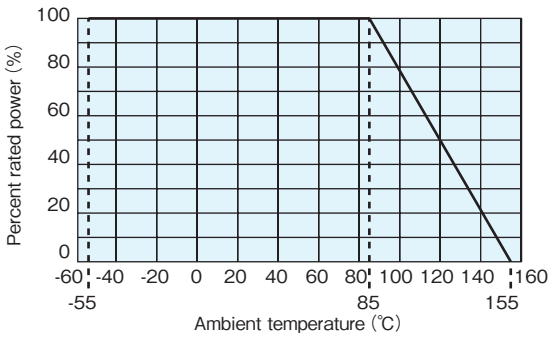
Power Rating (Vin-GND)	Rated Ambient Temperature	Rated Terminal part temp.	Max Working Voltage (Vin-GND)	Max Overload Voltage (Vin-GND)	Resistance Range Resistance ratio 100:1～500:1 (R1+R2)/R2		Absolute Resistance Tolerance (R1)	Relative Resistance Tolerance	T.C.R. (×10⁻⁶/K)	T.C.R. Tracking (×10⁻⁶/K)	Taping & Q'ty/ Reel (pcs)	Weight (g) 1000 pcs
					R1(E24/E96)	R2					TEB	
1W	85℃	90℃	1500V	3000V	0.5MΩ～51MΩ	1kΩ～510kΩ	±0.25% ±0.5%	0.25% 0.5%	±50	25 50	1,000	570

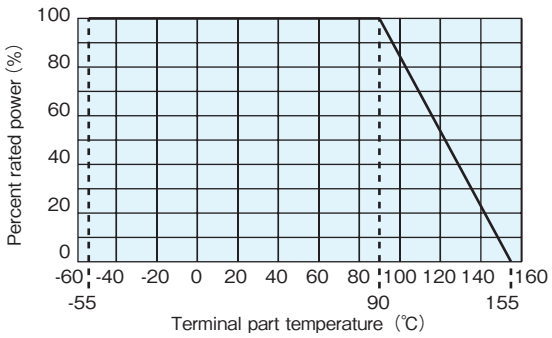
Operating Temperature Range : −55℃～+155℃

Rated voltage = $\sqrt{\text{Power Rating} \times \text{Resistance value}}$ or Max. working voltage, whichever is lower.
Guaranteed value differs depending on Power usage. Please see Performance table on next page.
Relative Tolerance is calculated by | Dev.R1 − Dev.R2 | , TCR tracking is | T.C.R. R1 − T.C.R. R2 | .

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.
Contact our sales representatives before you use our products for applications including automotives, medical equipment and aerospace equipment.
Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

■Derating Curve





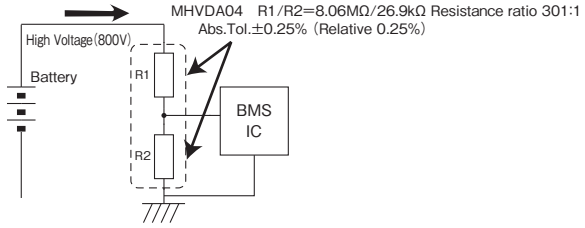
For resistors operated at an ambient temperature of 85℃ or higher, the power shall be derated in accordance with the above derating curve.

■Performance

Test Items	Performance Requirements (Ratio) ΔR%		Test Methods
	Limit	Typical	
Resistance	Within specified tolerance	—	25℃
T.C.R.	Within specified T.C.R.	—	+25℃/−55℃、+25℃/+125℃
Overload (Short time)	0.5	0.1	Rated Voltage×2 for 5s
Resistance to soldering heat	0.25	0.1	260℃±5℃、10s±1s
Rapid change of temperature	0.4	0.2	−55℃(15min.) /+155℃(15min.) 1000cycles
Moisture resistance	0.4	0.2	85℃±2℃、85%±3%RH、1,000h Rating power 10% within 500V
Endurance at 85℃	0.4	0.2	85℃±2℃、1,000h 1.5h ON/0.5h OFF cycles
High temperature exposure	0.2	0.1	+155℃、1,000h

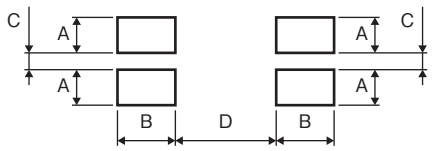
■Example of Application

Battery Management System (Voltage Monitoring)



■Recommended Pad Dimensions

The optimum dimension of soldering pad at the time of soldering differs according to conditions, however, the following pad dimensions are recommended as standard.



Dimensions (mm)	
A	2.3
B	3.1
C	1.1
D	6.5

- This pad dimensions are only for standard pattern and the characteristics are not guaranteed, which you are suggested to confirm before use.
- If pad size on both side are different, force to one side might occur when cooling solder because of different amount of solder paste. Please design uniform pad size.

■Precautions for Use

- Hand soldering by iron soldering or repairment are not recommended because MHVD is a multi-pin product.

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Malfunction or failure of the products in such applications may cause loss of human life or serious damage.