

SONY**DM-211****Magnetoresistance Element**

T-65-05

Description

The DM-211 is a highly sensitive magnetoresistance element, composed of an evaporated ferromagnetic alloy on a silicon substrate.

This element can be used for the detection of rotational speed and direction of rotation.

Features

- Low magnetic field and high sensitivity
75mVp-p (Typ.) at $V_{CC} = 5V$
and $H = 100 \text{ Oe}$

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

- Supply voltage V_{CC} 10 V
- Operating temperature T_{opr} -20 to $+120$ $^\circ\text{C}$
- Storage temperature T_{stg} -50 to $+150$ $^\circ\text{C}$

Recommended Operating Condition

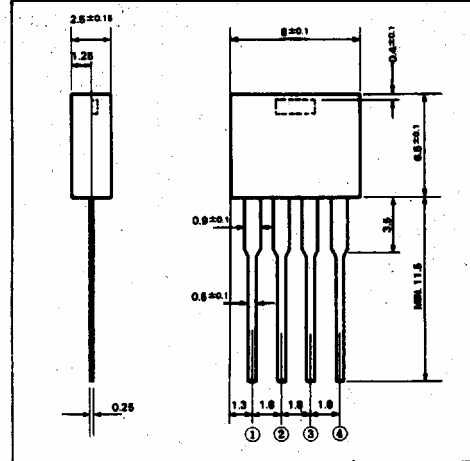
- Supply voltage V_{CC} 5 V

Electrical Characteristics $T_a = 25^\circ\text{C}$

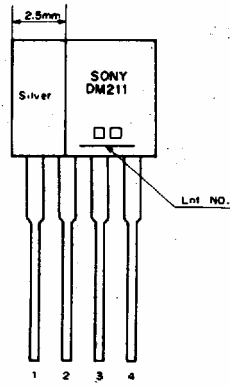
| Item | Symbol | Condition | Min. | Typ. | Max. | Unit |
|-------------------------------|---------------|---|-------|------|-------|-----------|
| Total resistance | R_T | $H = 100 \text{ Oe}$ $\theta = 45^\circ$ $V_{CC} = 5V$ | 1.6 | | 3.0 | $k\Omega$ |
| Midpoint potential | V_A, V_B | Revolving magnetic field $H = 100 \text{ Oe}$ $V_{CC} = 5V$ | 2.475 | | 2.525 | V |
| Midpoint potential difference | $ V_A - V_B $ | Revolving magnetic field $H = 100 \text{ Oe}$ $V_{CC} = 5V$ | -25 | | 25 | mV |
| Output voltage | V_{OUT} | Revolving magnetic field $H = 100 \text{ Oe}$ $V_{CC} = 5V$ | 50 | 75 | | mVp-p |
| FG irregular of rotation | | See the Electrical Characteristic Test Circuit (Page 208) | | 0.03 | | % |

Package Outline

Unit: mm

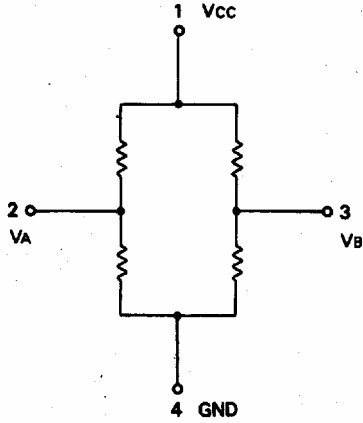


Mark

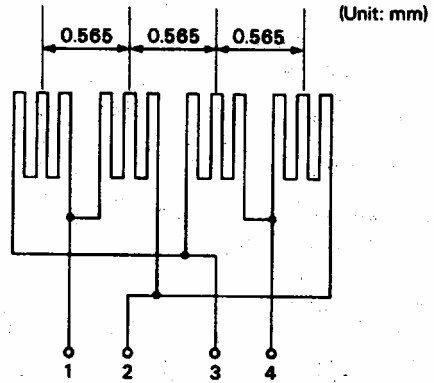


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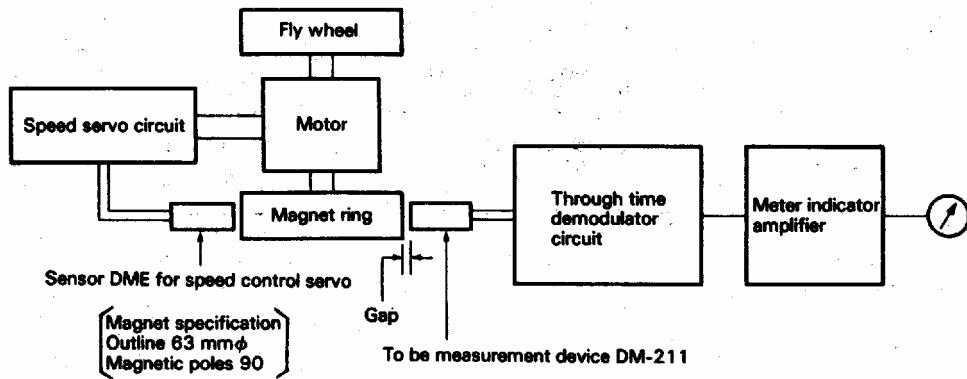
Equivalent Circuit



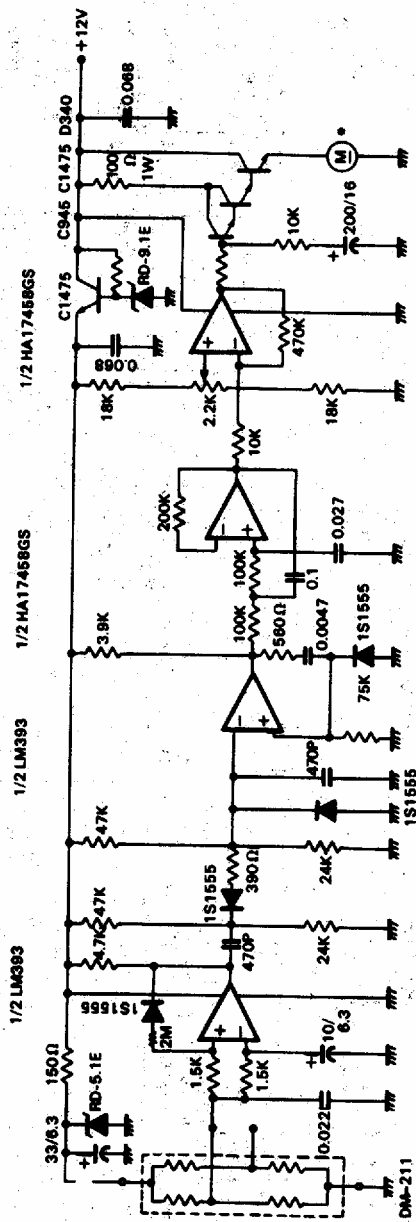
Pattern Layout



FG Irregular of Rotation Test Circuit

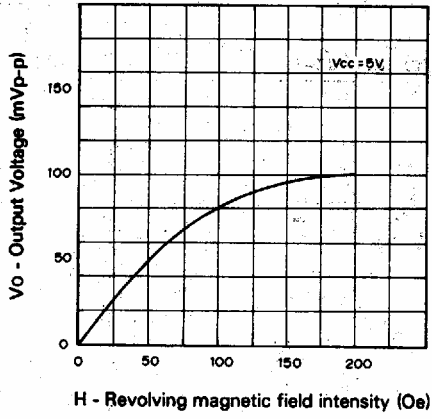


Electrical Characteristic Test Circuit (Speed servo circuit)

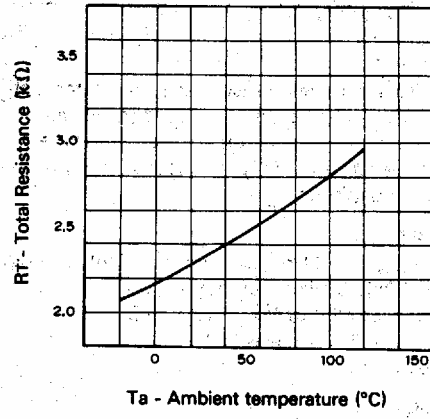


* Motor must be used with fly wheel (I = 12g Cm S9)

Output voltage vs. Magnetic field intensity



Total resistance vs. Ambient temperature



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