

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

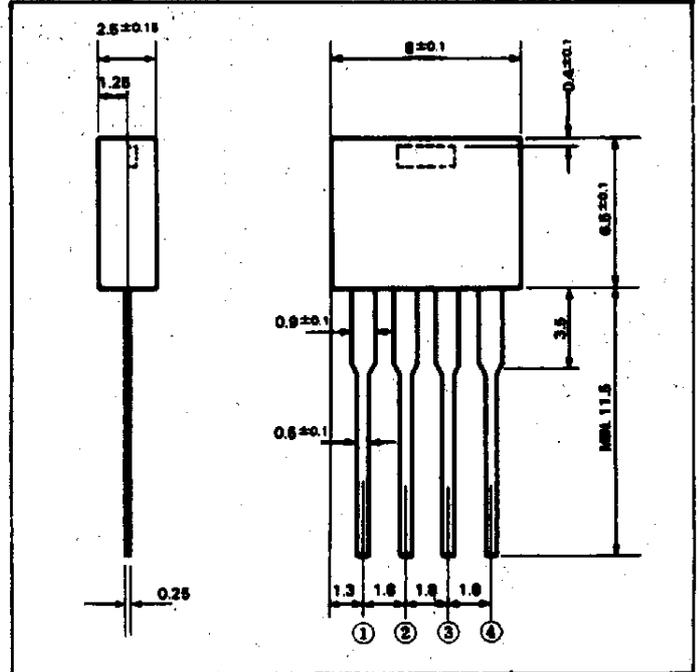
Electrical Characteristics

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

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 209)		0.03		%

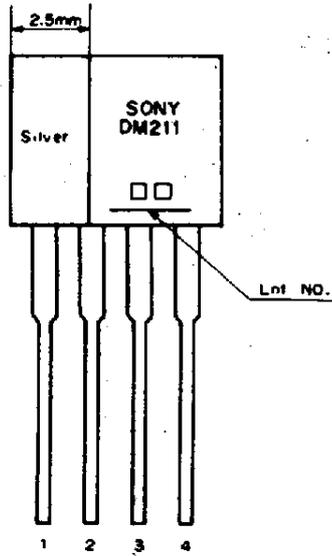
Package Outline

Unit: mm



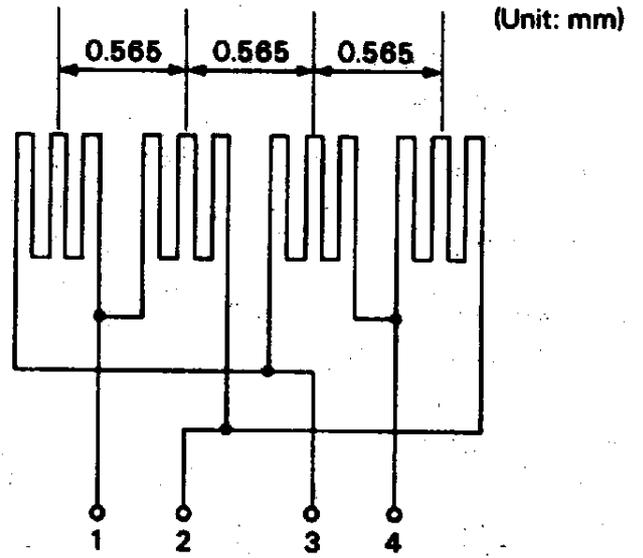
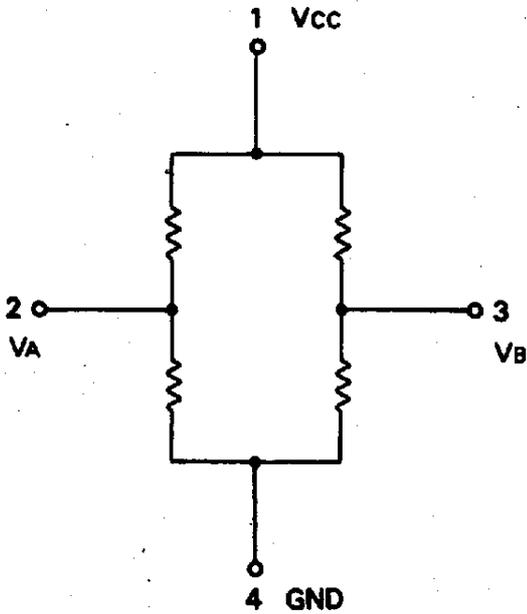
Mark

T-65-05

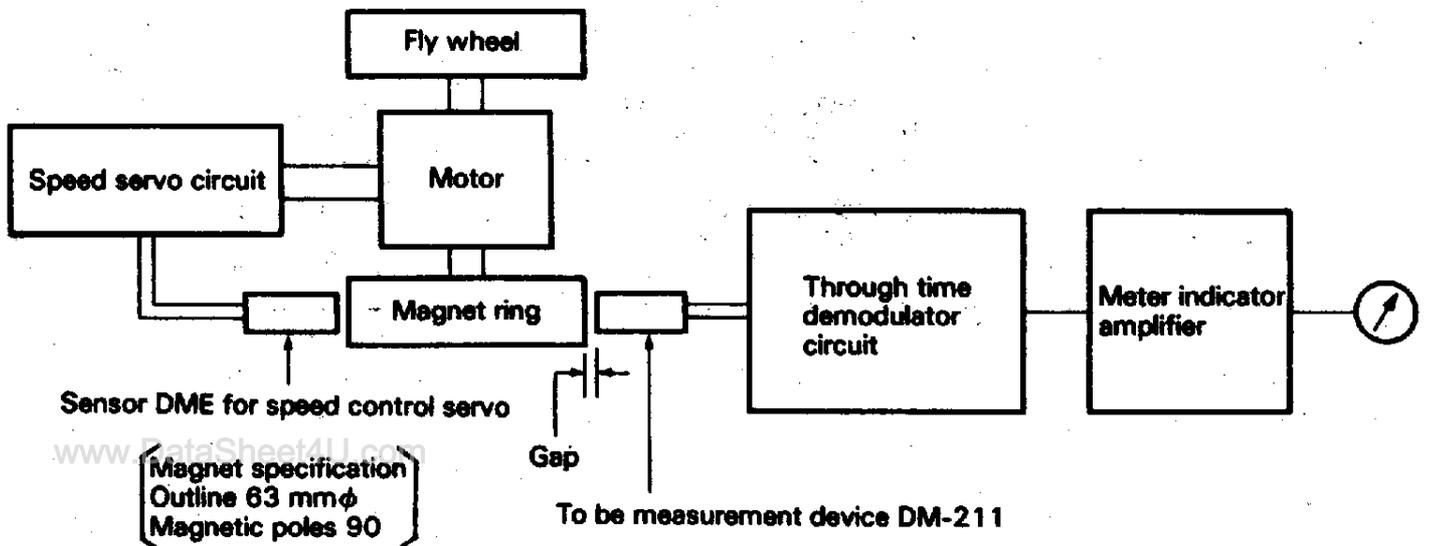


Equivalent Circuit

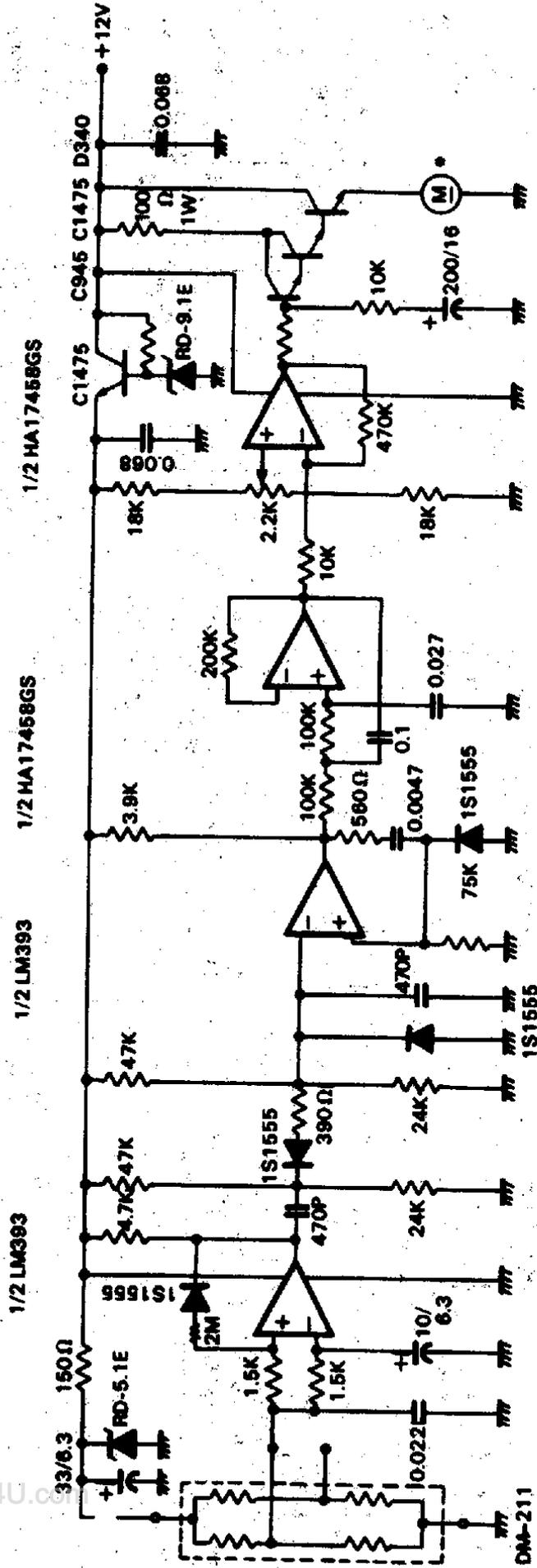
Pattern Layout



FG Irregular of Rotation Test Circuit

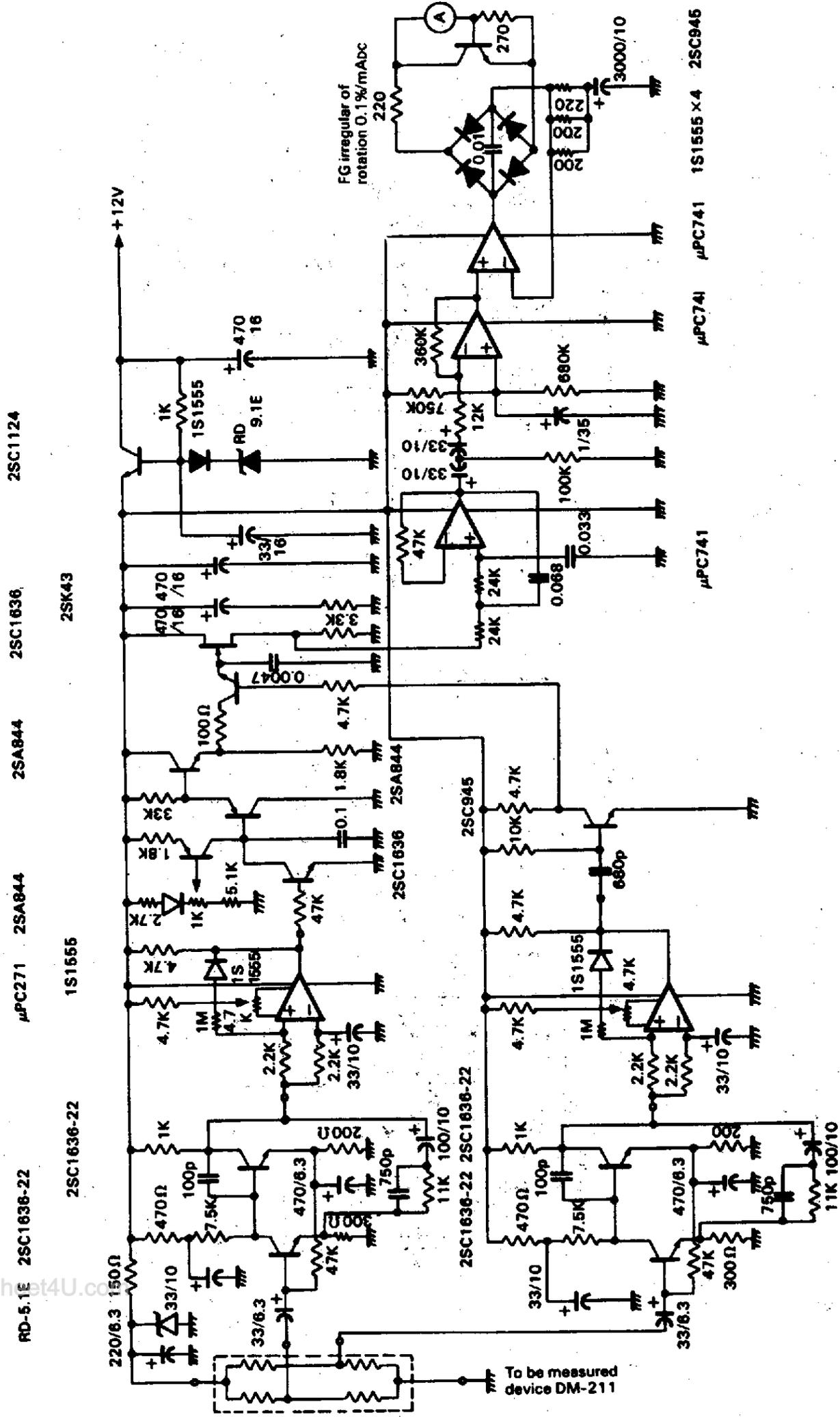


Electrical Characteristic Test Circuit
(Speed servo circuit)



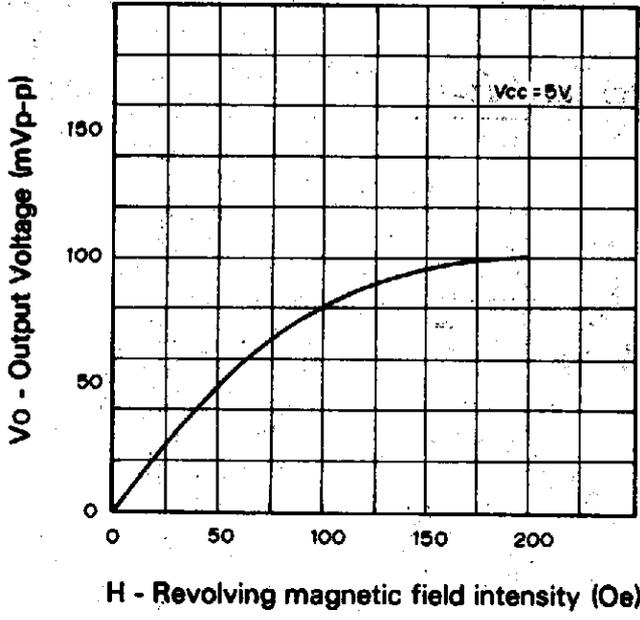
* Motor must be used with fly wheel (I = 12g · Cm · S²)

(Through the Time Demodulator Circuit and Meter Indicator Amplifier Circuit)



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Output voltage vs. Magnetic field intensity



Total resistance vs. Ambient temperature

