

AN3893NFHP

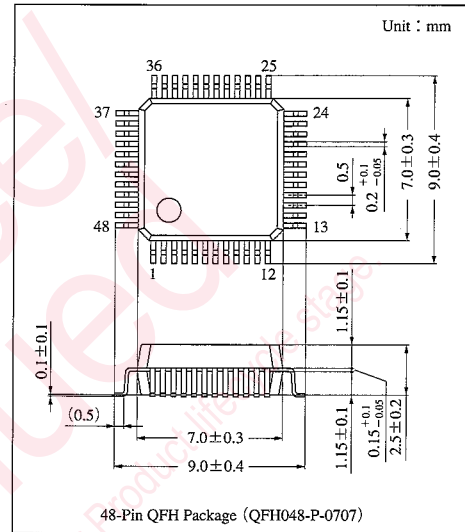
Cylinder Motor Driver IC for Video Camera

Overview

The AN3893NFHP is a cylinder sensorless-motor driver IC for Video Camera.

Features

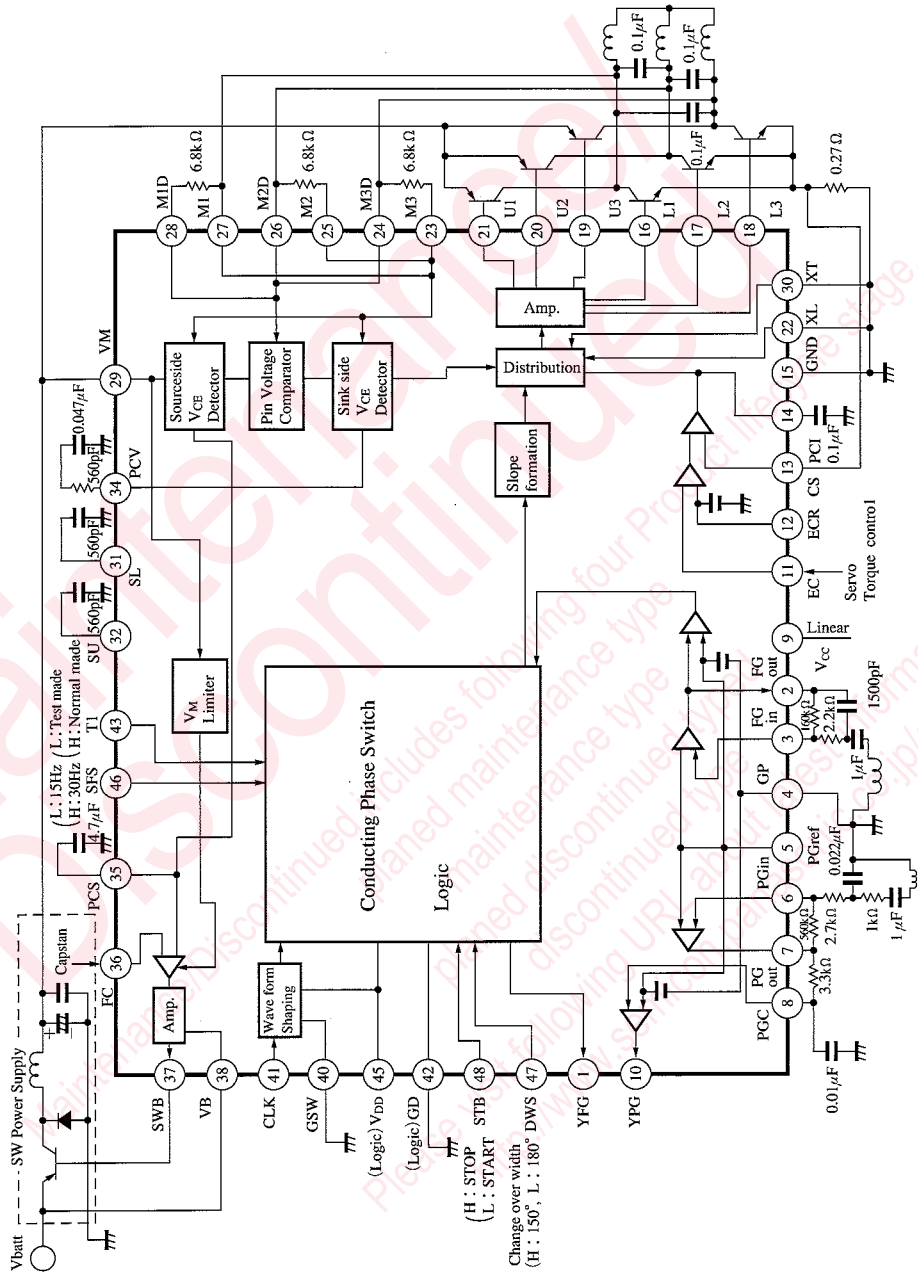
- Operating voltage range : $V_{CC}=3.2$ to $5.5V$
- Reduction of noise generated at current switching by 3-phase full-wave overlapping drive. Need external power transistors
- Standby mode for reducing power consumption
- Built-in PG and FG amplifiers and waveform shaping circuits
- Switching-regulator control-comparator-output and pre-drive outputs



Pin Descriptions

Pin No.	Pin name and Symbol	Pin No.	Pin name and Symbol
1	FG wave-shaped output YFG	25	Motor coil (2) M2
2	FG amplifier output FGout	26	Motor back-EMF input (2) M2D
3	FG input FGin	27	Motor coil (1) M1
4	Ground for FG/PG GP	28	Motor back-EMF input (1) M1D
5	Reference voltage for FG/PG PGref	29	Motor power supply, V _M
6	PG input PGin	30	Conducting-phase adjustment (2) XT
7	PG amplifier output PGout	31	Upper slope voltage SU
8	PG comparator input PGC	32	Lower slope voltage SL
9	Power supply V _{CC}	33	No connection
10	PG wave-shaped output YPG	34	Voltage feedback phase correction PCV
11	Torque command EC	35	Switching regulator control output PCS
12	Torque reference ECR	36	Switching regulator triangle-wave input PC
13	Current sensor CS	37	Switching predrive output SWB
14	Current feedback phase correction PCI	38	Unregulated voltage supply V _B
15	Ground GND	39	No connection
16	Lower predrive output (1) L1	40	Switching regulator ground SWB
17	Lower predrive output (2) L2	41	Clock input CLK
18	Lower predrive output (3) L3	42	Logic ground GD
19	Upper predrive output (3) U3	43	Test mode switching input T1
20	Upper predrive output (2) U2	44	No connection
21	Upper predrive output (1) U1	45	Logic power supply V _{DD}
22	Conducting-phase adjustment (1) XL	46	Starting frequency switching input SFS
23	Motor coil (3) M3	47	Conducting-phase switching input DWS
24	Motor back-EMF input M3D	48	Standby switching input STB

■ Block Diagram



ICs for VCR

■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	6.0	V
Motor supply voltage	V_{29}	14.0	V
Output terminal voltage (n=23, 24, 25, 26, 27, 28, 19, 20, 21)	V_n	14.0	V
Unregulated input voltage	V_{38}	14.0	V
Switching regulator drive output terminal voltage	V_{37}	14.0	V
Terminal voltage (n=3, 5, 6, 10, 11, 12, 13, 22, 30, 33, 36, 41, 43, 46, 47, 48)	V_n	-0.3 to $V_{CC}+0.3$	V
Power dissipation	P_D	300	mW
Operating ambient temperature ^{Note 1)}	T_{opr}	-20 to +70	°C
Storage temperature ^{Note 1)}	T_{stg}	-55 to +125	°C

Note 1) $T_a=25^\circ\text{C}$ except operating ambient temperature and storage temperature.

■ Recommended Operating Range ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Range
Operating supply voltage range	V_{CC}	3.2V to 5.5V
Motor supply operating voltage range	V_M	3.0V to 12V

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