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NTE1630 Integrated Circuit VCR Cylinder Motor Driver

Description:

The NTE1630 is an integrated circuit designed for VCR cylinder DD motor drive.

Features:

- 3-Phase motor drive circuit
- 2 Phase-Hall element input circuit
- PG, FG, generator circuit
- Motor Lock Detector
- Supply Voltage either 9V or 12V

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Supply Voltage, V_{CC}	14.4V
Circuit Voltage, V_{n-12} ($n = 1,2,23$)	0/40V
Circuit Voltage, V_{21-12}	0/24V
Circuit Voltage, I_n ($n = 1,2,23$)	0mA/-1500mA
Power Dissipation, P_D	10W
Operating Ambient Temperature Range, T_{opr}	-20 to $+70^\circ\text{C}$
Storage Temperature Range, T_{stg}	-40 to $+150^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C} \pm 2^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total circuit current	I_{tot}	$V_{CC} = 9V$ disable	4.0	–	20	mA
ET-ATC transfer gain	$G_{(10)}$	$V_{CC} = 9V$	0.86	–	1.06	–
ATC limit voltage	$V_{(lim)}$	$V_{CC} = 9V$ when a full torque specified	0.44	–	0.50	V
Saturation detection gain	$G_{(S)}$	$V_{CC} = 9V$, $R_d = 0.47\Omega$	0.5	–	1.5	–
Saturation detection start voltage	$V_{(Det1)}$	$V_{CC} = 9V$, $R_d = 0.47\Omega$	1.0	–	1.8	V
Saturation detection end voltage	$V_{(Det2)}$	$V_{CC} = 9V$, $R_d = 0.47\Omega$	0.5	–	1.0	V
HV output voltage	V_{HV}	$V_{CC} = 9V$, $V_{SV} = 2.6V$, $R_{HV} = 270$	2.1	–	–	V
HV protective voltage	$V_{(Protect)}$	$V_{CC} = 9V$, $V_{SV} = V_{CC}$	3.5	–	4.3	V
DS level voltage	$\overline{V_{DS}}$	$V_{CC} = 9V$	–	–	1.2	V
ETR voltage	V_{ETR}	$V_{CC} = 9V$	4.3	–	4.7	V
HEM, $\overline{HEM}$, HES, $\overline{HES}$ bias current	I_{bias}	$V_{CC} = 9V$	-6	–	–	μA
Hes- $\overline{HES}$ comparator offset voltage	$V_{I(offset)S}$	$V_{CC} = 9V$	-6	–	6	mV

Electrical Characteristics (Cont'd): ($T_A = +25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
HEM-HEM comparator offset voltage	$V_{I(\text{offset})M}$	$V_{CC} = 9\text{V}$	-6	-	6	mV
PG minimum voltage	V_{OL19}	$V_{CC} = 9\text{V}$, 47k Ω to Pin 19-5V	-	-	0.5	V
FG minimum voltage	V_{OL20}	$V_{CC} = 9\text{V}$, 47k Ω to Pin 20-5V	-	-	0.5	V
BEG take-out voltage	V_{BFG}	$V_{CC} = V_M = 9\text{V}$	0.6	-	1.0	V

Note 1 Operating supply voltage $V_{CC(\text{opr})} = 8 \sim 13\text{V}$ (V_{7-12})

Pin Connection Diagram

