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NTE1531
Integrated Circuit
Voltage Regulator for Electronic Tuning System

Description:

The NTE1531 is a voltage regulator for use with a varactor tuner or electronic tuning control.

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Maximum Input Voltage (+B_1, +B_2, CLK), V_{B1}, V_{B2}, V_{CLK}max 21V
Allowable Power Dissipation, $P_D$max 1W
Operating Temperature Range, T_{opg} . . . . . –20° to +70°C
Storage Temperature Range, T_{stg} . . . . . –40° to +125°C

Recommended Operation Conditions: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit
V_{ref} Output Current	I_{ref}	–10	–	0	mA
V_{DD} Output Current	I_{DD}	–30	–	0	mA
$\overline{INHI}$ Output Current	$I_{\overline{INHI}}$	–0.5	–	0	mA
$\overline{BUC}$ Output Current	$I_{\overline{BUC}}$	–0.8	–	0	mA
+B_1, +B_2 Input Voltage	V_{B1}, V_{B2}	9	–	16	V

Operational Characteristics: (T_A = +25°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
V_{DD} Voltage	$V_{DD(1)}$	+B1 = +B2 = 9V, I_{DD} = 30mA, I_{ref} = 10mA, V_{ref} = 8V, T_A = –20° to +70°C	V_{ref}–0.3	–	8.5	V
	$V_{DD(2)}$	+B_1 = +B_2 = 16V, I_{DD} = 30mA, I_{ref} = 10mA, V_{ref} = 8V, T_A = –20° to +70°C	V_{ref}–0.3	–	10	V
V_{DD} Voltage (At Back–Up Time)	$V_{DD(3)}$	+B_2 = 9 to 16V, I_{DD} = 4mA, +B_1 opened.	4.5	–	5.5	V
V_{DD} Voltage	$V_{DD(4)}$	V_{CLK} = +B_2 = 9V, I_{DD} = 18mA, I_{ref} = 10mA, V_{ref} = 8V, T_A = –20° to +70°C, +B_1 opened.	V_{ref}–0.3	–	8.5	V

Operational Characteristics (Cont'd): (T_A = +25°C, unless otherwise specified)

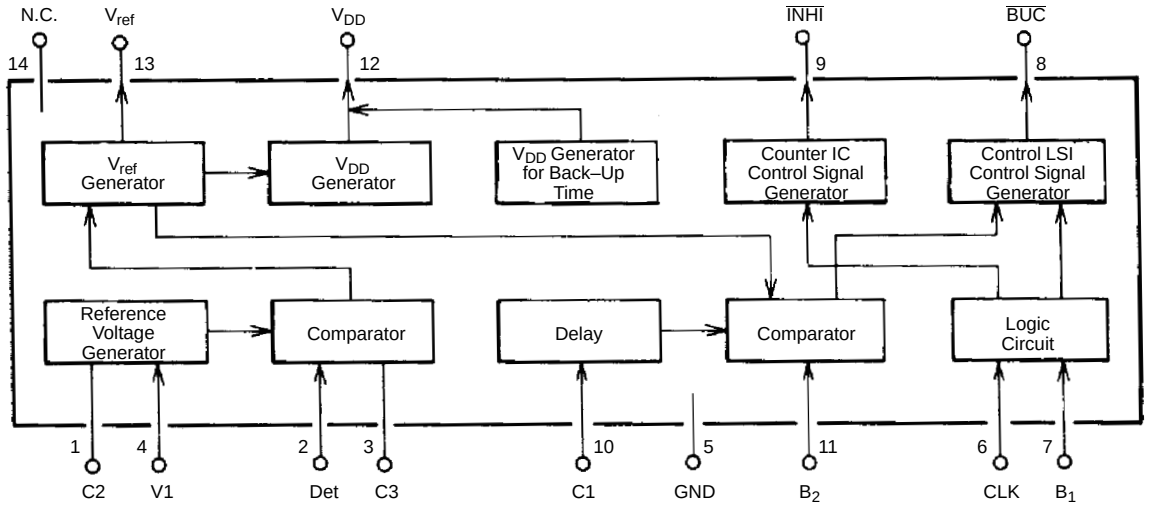
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
V_{DD} Voltage	$V_{DD(5)}$	V_{CLK} = +B_2 = 16V, I_{DD} = 18mA, I_{ref} = 10mA, V_{ref} = 8V, T_A = –20° to +70°C, +B_1 opened.	V_{ref}–0.3	–	10	V
Radio Back–Up Signal Voltage	$V_{\overline{BUC}}$	+B_1 = +B_2 = 9.15 to 16V, V_{ref} = 8V	0.78V_{DD}	–	V_{DD}	V
Clock Back–Up Signal Voltage	$V_{\overline{INHI}}$	+B_1 = +B_2 = 9.15 to 16V, V_{ref} = 8V	0.78V_{DD}	–	V_{DD}	V
Radio Back–Up Signal Rise Voltage	$V_{TH\ \overline{BUC}\ UP}$	+B_1 = +B_2, V_{ref} = 8V, I_{ref} = 10mA	8.9	–	9.3	V
Radio Back–Up Signal Hysteresis	$V_{TH\ \overline{BUC}\ DN}$	+B_1 = +B_2, V_{ref} = 8V, I_{ref} = 10mA	50	–	200	mV
BUC Delay Time at +B Step Input	t_D	+B_1 = +B_2 = 13.2V, C = 22µF, R = 22k ohm	85	–	400	ms
Current Dissipation	$I_{CC(1)}$	+B_1 = +B_2 = 13.2V, I_{DD} = 30mA, I_{ref} = 10mA	–	70	–	mA
	$I_{CC(2)}$	+B_2 = 13.2V, no load, +B_1 opened.	–	0.63	1.4	mA
V_{ref} Thermal Drift	$\lvert\Delta V_{ref}\rvert$	T_A = –10 to +60°C, V_{ref} = 8V (25°C)	–60	0	60	mV

Logic Table:

B1	B2	CLK	V_{DD}	V_{ref}	$\overline{BUC}$	$\overline{INHI}$	Condition
L	H	L	5V	0V	L	L	When back–up of time
H	H	L	9V	8V	H	H	radio on
L	H	H	9V	8V	L	H	read out time when radio off
H	H	H	9V	8V	H	H	read out time when radio on

NOTE: This device is for *REPLACEMENT ONLY!* No application notes are available.

Block Diagram



Pin Connection Diagram