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NTE1717 Integrated Circuit VCR Dual Switching Regulator

Description:

The NTE1717 is a dual monolithic PWM (pulse-width modulated) switching regulator. Each regulator block contains a 5V reference voltage supply, a saw-tooth wave oscillator, an error amplifier, a comparator, and a driver. The 9V stop feature that shuts off the 9V regulator block, and the ripple regulation for use with car batteries make this device best suited as a 5V and 9V power supply for portable VCRs.

Features:

- The 9V stop feature of the 9V regulator can make only the 5V regulator enabled.
- Direct feedback can drastically reduce ripple
- V_{REG} output is available
- The driver's output duty ratio is variable from 0 to 100%, so that the driver output can be completely turned on or off.
- Accurate oscillation frequency, with stable start-up and temperature characteristics.
- Error amplifiers with internal phase compensation
- Reference square-wave OSC output available
- High conversion efficiency

Applications:

Power supply for VCRs
 Power supply for general-purpose equipment

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

Supply Voltage, V_{CC}	18V
Power Dissipation, P_D (Note 1)	340mW
Operating temperature Range, T_{opr}	-10 to +60°C
Storage temperature Range, T_{stg}	-55 to +125°C
V_{REG} drain current, $I_P(V_{REG})$	5mA
Sink current, pin 8, I_8	20mA
Sink current, pin 10, I_{10}	10mA

Note 1. Derating is done at 3.4mW/°C for operation above $T_A = 25^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 12\text{V}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply voltage range	V_{CC}	$4.2\text{V} < V_{REG} < 5.4\text{V}$	8	–	16	V
Quiescent current	I_O		–	5.5	8.0	mA
V_{REG} output voltage	V_{REG}		4.65	4.8	4.95	V
Input regulation 9V output	V_{O9-G}	$10\text{V} \leq V_{CC} \leq 16\text{V}$	–0.1	–	+0.1	V
5V output voltage	V_{O5}		4.7	5.0	5.3	V
Input regulation 5V output	V_{O5-G}	$10\text{V} \leq V_{CC} \leq 16\text{V}$	–0.1	–	+0.1	V
Simple efficiency	I_O	$I_{O9} = 400\text{mA}$, $I_{O5} = 50\text{mA}$	–	–	3.75	mA
Oscillation frequency	f	–	36	41	46	kHz
Oscillation frequency input regulation	$\Delta f-R$	$R_A = 36\text{k}\Omega$, $R_B = 12\text{k}\Omega$, $C_T = 1000\text{pF}$ $10\text{V} \leq V_{CC} \leq 16\text{V}$	–	–0.3	–	%
Reference oscillation output voltage–high	D		14	20	26	%
Reference oscillation voltage–high	\bar{H}		3.7	–	–	V
Reference oscillation output duty	D		74	80	86	%
Reference oscillation output voltage	H		3.7	–	–	V
9V stop input high voltage	V_H	$V_{O9} < 0.4\text{V}$	1.5	–	–	V
9V stop input low voltage	V_L	$8.3\text{V} < V_{O9} < 9.7\text{V}$	–	–	0.9	V

Pin Connection Diagram



