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NTE7044
Integrated Circuit
Switching Regulator Control Circuit

Description:

The NTE7044 is an integrated circuit in a 9–Lead SIP type package which contains a PWM switching regulator control circuit and protect circuit on a single chip.

Features:

- Soft Start Circuit
- 0 to 0.7 Duty
- Protection Circuit for Overvoltage and Current
- External Trigger Available
- High Supply Voltage Protection
- Low Supply Voltage Protection
- Reference Voltage Provided by an External Zener Diode

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

Supply Voltage, V_{CC} 14V
Circuit Voltage
- $V_{6–5}$ . . . . . 0V to 14.4V
- V_1, V_2, $V_{4–5}$ . . . . . 0 to $V_{6–5}$
- $V_{3–5}$ . . . . . 3V to 10V
- $V_{7–5}$ . . . . . 0V to 8V
- V_8, $V_{9–5}$ . . . . . –3V to +4V

Supply Current, I_6 . . . . . 18mA
Circuit Current, I_4 . . . . . –1mA to +50mA$_{peak}$
Power Dissipation, P_D 260mW
Local Power Dissipation (Q_1), P_D 60mW
Operating Ambient Temperature Range, T_{opr} . . . . . –20° to +75°C
Storage Temperatuere Range, T_{stg} . . . . . –55° to +150°C

Note 1. + is flow–in current to the circuit, while – is flow–out current.

Electrical Characteristics: (T_A = +25°C, V_{CC} = 12V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Circuit Current	I_{tot}		8.4	10.5	12.6	mA
Oscillation Frequency	f_{OSC}		14.0	14.8	15.6	kHz
Output Pulse Duty (Min)	$t_{w(duty)}$		67	72	77	%
Output Pulse Duty (Max)	$t_{w(duty)}$		–	0	0	%

Electrical Characteristics (Cont'd): (T_A = +25°C, V_{CC} = 12V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Saturation Voltage	$V_{O(sat)}$	I_4 = 10mA	–	0.10	0.30	V
		I_4 = 50mA	–	0.62	1.00	V
High Supply Voltage Protection	V_{HVP}		13.2	13.9	14.6	V
Low Supply Voltage Protection	V_{LVP}		4.8	5.2	5.6	V
Input Voltage, External Trigger Start	V_{t1}		0.66	0.71	0.76	V
Input Voltage, One–Shot Multi Start	V_{t2}		0.68	0.73	0.78	V

Pin Connection Diagram
(Front View)