

## 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:** ( $T_A = +25^\circ\text{C}$  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 <sub>peak</sub>
Power Dissipation, $P_D$ .....	260mW
Local Power Dissipation ( $Q_1$ ), $P_D$ .....	60mW
Operating Ambient Temperature Range, $T_{opr}$ .....	-20° to +75°C
Storage Temperature Range, $T_{stg}$ .....	-55° to +150°C

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

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$  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)	$t_w(\text{duty})$		67	72	77	%
Output Pulse Duty (Max)	$t_w(\text{duty})$		-	0	0	%

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Saturation Voltage	$V_{O(\text{sat})}$	$I_4 = 10\text{mA}$	–	0.10	0.30	V
		$I_4 = 50\text{mA}$	–	0.62	1.00	V
High Supply Voltage Protection	$V_{\text{HVP}}$		13.2	13.9	14.6	V
Low Supply Voltage Protection	$V_{\text{LVP}}$		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)

