

SWITCHED-MODE POWER SUPPLY CONTROLLER**NE5568****DESCRIPTION**

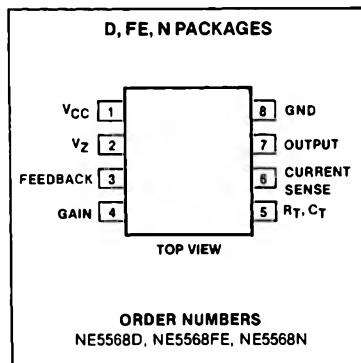
The NE5568 is a control circuit for use in switched mode power supplies. It contains an internal temperature-compensated supply, PWM, sawtooth oscillator, over-current sense latch, and output stage. The device is intended for low-cost SMPS applications where extensive housekeeping functions are not required. The NE5568 is a selected version of the NE5561.

FEATURES

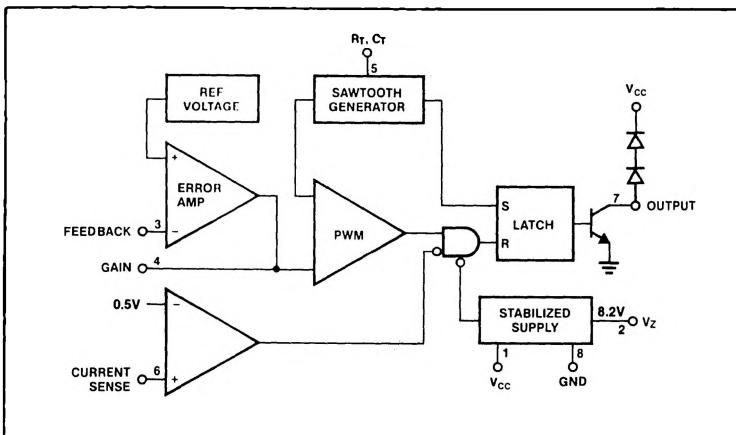
- Micro-miniature (D) package
- Pulse width modulator
- Current limiting (cycle by cycle)
- Sawtooth generator
- Stabilized power supply
- Double pulse protection
- Internal temperature-compensated reference

APPLICATIONS

- Switch mode power supplies
- DC motor controller inverter
- DC/DC converter

PIN CONFIGURATION**ABSOLUTE MAXIMUM RATINGS**

PARAMETER	RATING	UNIT
Supply voltage, V_{CC}	18	V
Output current	40	mA
Output duty cycle	98	%
Max total power dissipation	0.75	W
Operating temperature range	0 to 70	°C

BLOCK DIAGRAM

SWITCHED-MODE POWER SUPPLY CONTROLLER

NE5568

DC ELECTRICAL CHARACTERISTICS $V_{CC} = 12V$, $T_A = 25^\circ C$ unless otherwise specified.

SYMBOL AND PARAMETER	TEST CONDITIONS	NE5568			UNIT
		Min	Typ	Max	
Reference Section V_{REF} , Internal ref voltage	$T_A = 25^\circ C$	3.69	3.75	3.84	V
	Over temperature	3.66		3.87	V
V_Z , Internal zener ref	$I_L = 7mA$	7.8	8.2	8.8	V
Temperature coefficient of V_{REF}			± 100		ppm/ $^\circ C$
Temperature coefficient of V_Z			± 200		ppm/ $^\circ C$
Oscillator Section Frequency range	Over temperature	50		100k	Hz
Initial accuracy			12		%
Duty cycle range	$f_O = 20kHz$	0		98	%
Current Limiting (I_{IN})	Pin 6 = 250mV	$T_A = 25^\circ C$		-2	μA
		Over temp.		-20	μA
Single pulse inhibit delay	Inhibit delay time for 20% overdrive at	$I_{OUT} = 20mA$	0.88	1.10	μs
		$I_{OUT} = 40mA$	0.7	0.8	μs
Current limit trip level		0.400	0.500	0.600	V
Error Amplifier Open loop gain			60		dB
Feedback resistor		10k			Ω
Small signal bandwidth			3		MHz
V_{OH} , Output voltage swing		6.2			V
V_{OL} , Output voltage swing				0.7	V
Output Stage Output current	Over temperature	20			mA
V_{CE} , Saturation	$I_C = 20mA$, over temperature			0.4	V
	$I_C = 40mA$, over temperature			0.5	V
Supply Voltage/Current I_{CC}	$I_Z = 0$, voltage fed	$T_A = 25^\circ C$		10.0	mA
		Over temp.		13.0	mA
V_{CC}	$I_S = 10mA$, current fed	19.0	21.0	24.0	V
	$I_{CC} = 30mA$, current fed	20.0		30.0	V
Low Supply Protection Pin 1 threshold		8.0	9.0	10.5	V

NOTE

All curves and applications of NE5561 apply exactly.