



# MC44604

## Product Preview

# High Safety Standby Ladder Mode GreenLine™ PWM Controller

The MC44604 is an enhanced high performance controller that is specifically designed for off-line and dc-to-dc converter applications.

The MC44604 is a modification of the MC44603. The MC44604 offers enhanced safety and reliable power management in its protection features (foldback, overvoltage detection, soft-start, accurate demagnetization detection). Its high current totem pole output is also ideally suited for driving a power MOSFET but can also be used for driving a bipolar transistor in low power converters (< 150 W).

In addition, the MC44604 offers a new efficient way to reduce the standby operating power by means of a patented standby ladder mode operation of the converter significantly reducing the converter consumption in standby mode.

### Current or Voltage Mode Controller

- Operation Up to 250 kHz Output Switching Frequency
- Inherent Feed Forward Compensation
- Latching PWM for Cycle-by-Cycle Current Limiting
- Oscillator with Precise Frequency Control

### High Flexibility

- Externally Programmable Reference Current
- Secondary or Primary Sensing
- High Current Totem Pole Output
- Undervoltage Lockout with Hysteresis

### Safety/Protection Features

- Overvoltage Protection Facility Against Open Loop
- Protection Against Short Circuit on Oscillator Pin
- Fully Programmable Foldback
- Soft-Start Feature
- Accurate Maximum Duty Cycle Setting
- Demagnetization (Zero Current Detection) Protection
- Internally Trimmed Reference

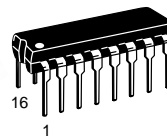
### GreenLine™ Controller:

- Low Startup and Operating Current
- Patented Standby Ladder Mode for Low Standby Losses
- Low dV/dT for Low EMI

GreenLine is a trademark of Motorola, Inc.

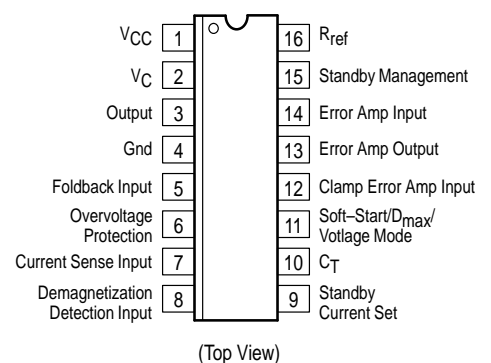
## HIGH SAFETY STANDBY LADDER MODE GREENLINE™ PWM CONTROLLER

### SEMICONDUCTOR TECHNICAL DATA



**P SUFFIX**  
PLASTIC PACKAGE  
CASE 648

### PIN CONNECTIONS



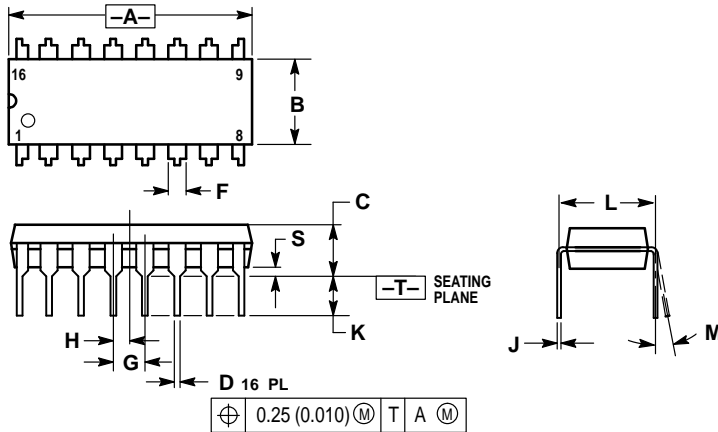
### ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC44604P	T <sub>A</sub> = -25° to +85°C	Plastic DIP

# MC44604

## OUTLINE DIMENSIONS

P SUFFIX  
PLASTIC PACKAGE  
CASE 648-08  
ISSUE R



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
4. DIMENSION B DOES NOT INCLUDE MOLD FLASH.
5. ROUNDED CORNERS OPTIONAL.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.740	0.770	18.80	19.55
B	0.250	0.270	6.35	6.85
C	0.145	0.175	3.69	4.44
D	0.015	0.021	0.39	0.53
F	0.040	0.70	1.02	1.77
G	0.100 BSC		2.54 BSC	
H	0.050 BSC		1.27 BSC	
J	0.008	0.015	0.21	0.38
K	0.110	0.130	2.80	3.30
L	0.295	0.305	7.50	7.74
M	0°	10°	0°	10°
S	0.020	0.040	0.51	1.01



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