

SIMPLE SWITCHER 3A STEP-DOWN VOLTAGE REGULATOR—YD2576

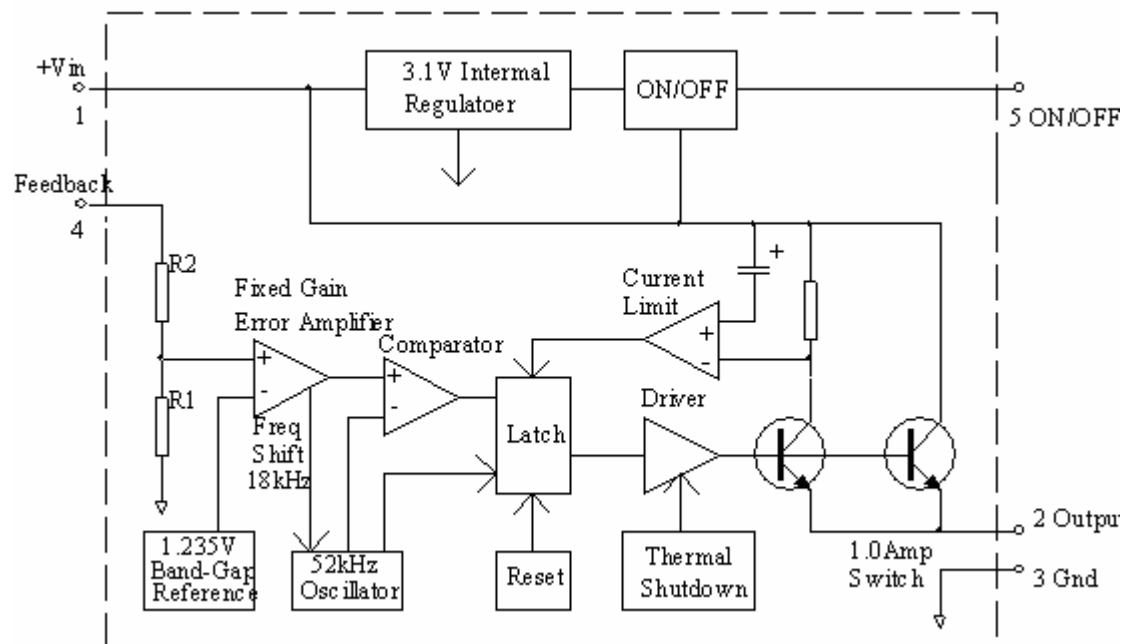
DESCRIPTION

The YD2576 series of regulators are monolithic integrated circuits that provide all the active functions for a step-down(buck) switching regulator, capable of driving 3A load with excellent line and regulation.

FEATURES

- *Guaranteed 3A output current
- *Requires only 4 external components
- *52kHz fixed frequency internal oscillator
- *High efficiency
- *thermal shutdown and current limit protection

BLOCK DIAGRAM



注: R1=2.2K, R2=6.8K.

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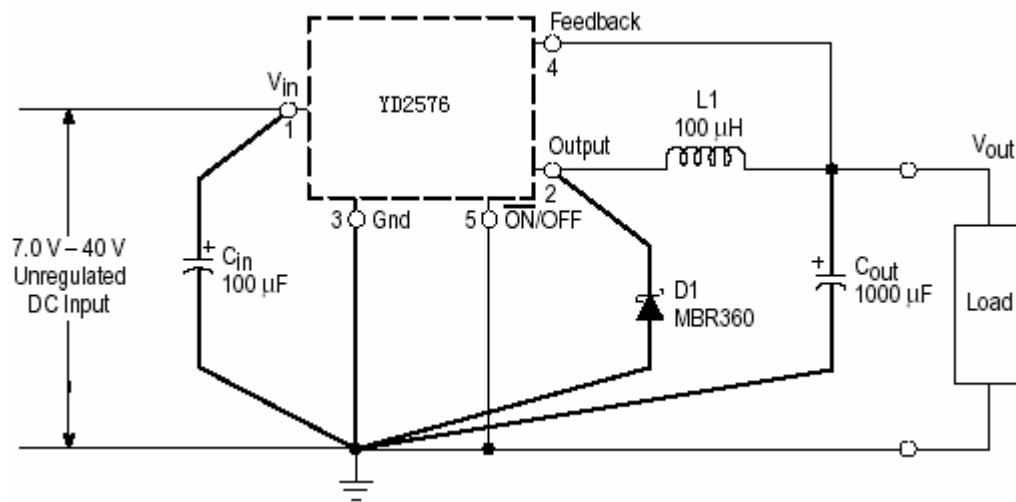
ABSOLUTE MAXIMUM RATINGS ($T_{amb}=25^{\circ}\text{C}$)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_{CC}	45	V
Power Dissipation	P_D	15	W
Operating Temperature	T_{opr}	-25 to +75	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-65 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($V_{CC}=12\text{V}$, $T_{amb}=25^{\circ}\text{C}$, Unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	V_{out}	$I_{load}=0.5\text{A}$	4.9	5	5.1	V
Output Voltage	V_{out}	$0.5\text{A} \leq I_{load} \leq 3\text{A}$	4.8	5	5.2	V
		$8\text{V} \leq V_{in} \leq 40\text{V}$	4.75	5	5.25	V
Efficiency	η	$I_{load}=3\text{A}$		77		%
Oscillator Frequency	F_{osc}	$T_j=25^{\circ}\text{C}$		52		kHz
		$T_j=0\text{to}+125^{\circ}\text{C}$	47		58	kHz
		$T_j=-40\text{to}+125^{\circ}\text{C}$	42		63	kHz
Saturation Voltage	V_{sat}	$T_j=25^{\circ}\text{C}$		1.5	1.8	V
		$T_j=-40\text{to}+125^{\circ}\text{C}$			2	V
Max Duty Cycle	DC		94	98		%
Current Limit	I_{cL}	$T_j=25^{\circ}\text{C}$	4.2	5.8	6.9	A
		$T_j=-40\text{to}+125^{\circ}\text{C}$	3.5		7.5	A
Output Leakage	I_L	$T_j=25^{\circ}\text{C}$		0.8	2	mA
		$T_j=-40\text{to}+125^{\circ}\text{C}$		6	20	mA
Quiescent Current	I_q	$T_j=25^{\circ}\text{C}$		5	9	mA
		$T_j=-40\text{to}+125^{\circ}\text{C}$			11	mA
Standby Quiescent Current	I_{stby}	$\text{Pin}5=5\text{V}$		50	200	μA
Standby Threshold	V_{STB}			2		V

APPLICATION CIRCUIT



OUTLINE DRAWING

