



TA76524P

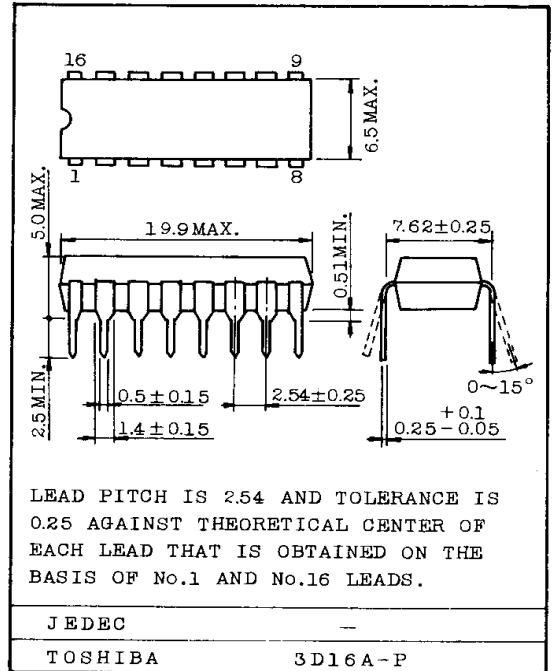
BIPOLAR LINEAR INTEGRATED CIRCUIT
SILICON MONOLITHIC

○ GENERAL PURPOSE SWITCHING REGULATOR (3524 TYPE)

The TA76524P is an IC developed for constant voltage power supply by switching system. This switching regulator assures high level of conversion efficiency.

- Pulse width modulation (P.W.M.) system
- Output in single-end or push-pull system is possible.
- Low current consumption at no-load
: 5mA (standard)
- Computible with SG3524

Unit in mm



MAXIMUM RATINGS (Ta=25°C)

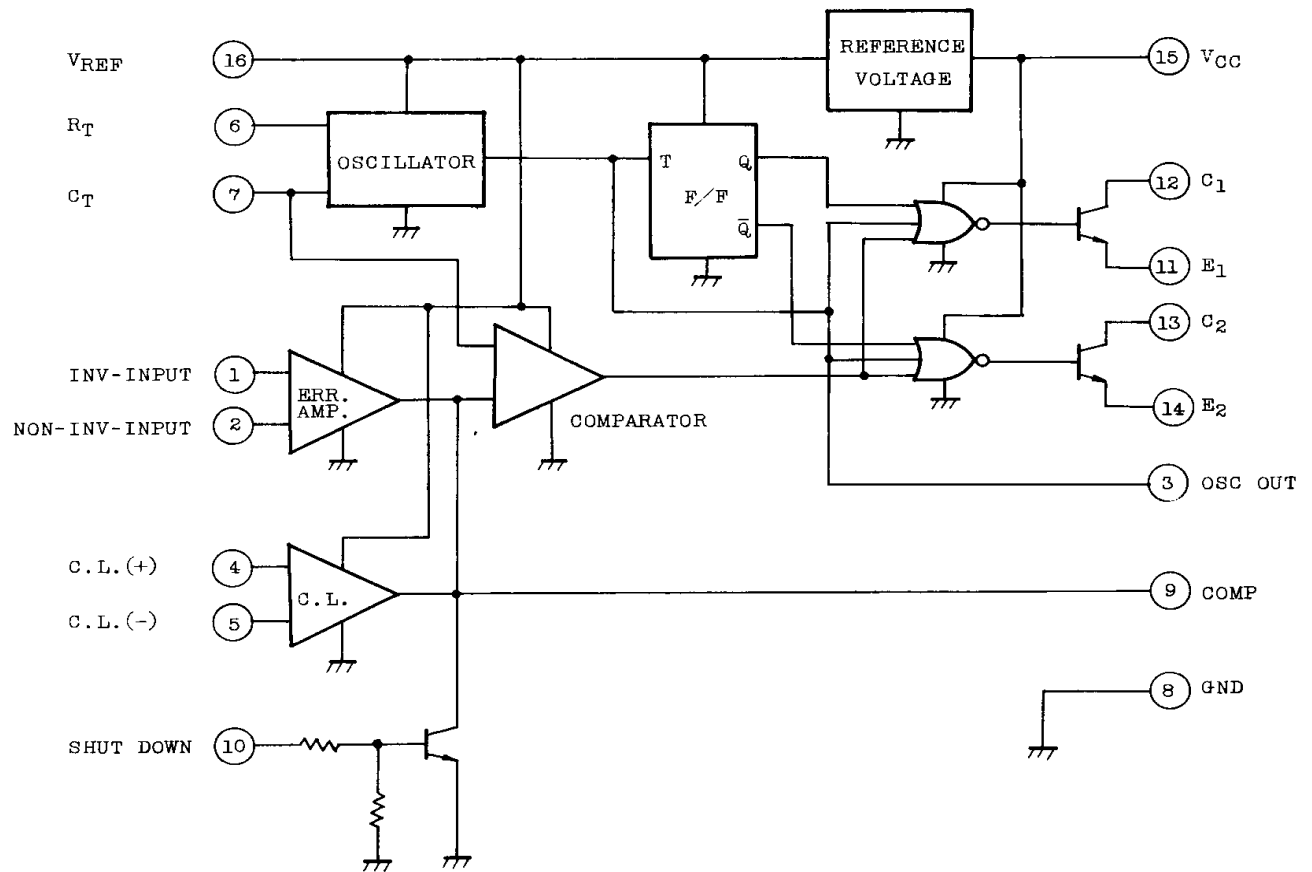
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage (Note 1,2)	V _{CC}	40	V
Collector Output Current	I _C	100	mA
Reference Output Current	I _{REF}	50	mA
C _T Terminal Current	I _{CT}	5	mA
Power Consumption (Note 3)	P _D	750	mW
Operating Temperature	T _{opr}	-30 ~ 75	°C
Storage Temperature	T _{stg}	-55 ~ 125	°C

Note 1. Voltage between V_{CC} - GND terminal.

2. 5V can be used with V_{CC} and V_{REF} terminals shorted. At this time, max. is 6V.

3. Reduce 6mW every time when temperature rises by 1°C.

BLOCK DIAGRAM



TA76524P

ELECTRICAL CHARACTERISTICS ($V_{CC}=20V$, $f=20kHz$, $T_a=25^\circ C$)

REFERENCE VOLTAGE UNIT

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reference Voltage	V_{REF}		4.6	5.0	5.4	V
Input Regulation	Reg.Line	$V_{CC}=8 \sim 40V$	-	10	30	mA
Refresh Rejection	R.R.	$f = 120Hz$	-	66	-	dB
Output Regulation	Reg.Load	$I_O = 0 \sim 20mA$	-	20	50	mV
Output Voltage Temp. Coefficient	TC_{VO}	$T_a = 0 \sim 70^\circ C$	-	0.3	1.0	%
		$T_a = -30 \sim 75^\circ C$	-	0.4	1.36	
Output Short-Circuit Current	I_{SC}	$V_{REF} = 0$ 1 sec (Max.)	-	100	-	mA

ERROR AMPLIFIER UNIT

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	$V_{IC} = 2.5V$	-	2	10	mV
Input Bias Current	I_I	$V_{IC} = 2.5V$	-	1	10	μA
Open Loop Voltage Gain	G_{VO}		60	80	-	dB
Common Mode Input Voltage Range	MV_{IN}	$T_a = 25^\circ C$	1.8	-	3.4	V
Common Mode Rejection Ratio	CMRR		-	70	-	dB
Bandwidth	BW		-	3	-	MHz
Output Voltage Swing	V_{Op-p}	$T_a = 25^\circ C$	0.5	-	3.8	V

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Max. Oscillation Frequency	$f_{MAX.}$	$C_T = 0.001\mu F$, $R_T = 2k\Omega$	-	450	-	kHz
Frequency Accuracy	$f_{S.D.}$	$V_{CC}=8 \sim 40V$, $R_T=1.8 \sim 100k\Omega$ $C=Const.$	-	5	-	%
Frequency Stability	$f/\Delta V_{CC}$	$V_{CC} = 8 \sim 40V$	-	0.4	-	%
		$T_a = 0 \sim 70^\circ C$	-	5	-	
		$T_a = -30 \sim 75^\circ C$	-	7	-	%
Output Voltage Swing	V_{O3}	3 PIN	-	3.5	-	V
Output Pulse Width	t_p	$C_T = 0.01\mu F$, 3 pins	-	0.5	-	μs

COMPARATOR UNIT

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Max. Duty Cycle	D _{MAX}		45	-	-	%
Fresh Hold Voltage	V _{TH 0}	duty = 0	-	1.0	-	V
	V _{THMAX}	duty = Max.	-	3.5	-	
Input Bias Current	I _I		-	-1	-	μA

CURRENT LIMITER UNIT

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Input Voltage Range	V _{IS}		-0.7 ~ 1.0	-	-	V
Sense Voltage	V _S	9 Pin = 2V, V(1Pin-2Pin) ≥ 50mV, Ta=25°C	180	200	220	mV
Sense Voltage Temp. Coefficient	TC _{V_S}	Ta = -30 ~ 75°C	-	0.2	-	mV/°C

OUTPUT UNIT

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector/Emitter Breakdown Voltage	V _{CE}		40	-	-	V
Output Leak Current	I _{CO}	V _{CE} = 40V	-	0.01	50	μA
Output Saturation Voltage	V _{CE(sat)}	I _C = 50mA	-	1	2	V
Emitter Output Voltage	V _E	V _C = 20V, I _E = -250μA	17	18	-	V
Rise Time	t _r	R _C = 2kΩ	-	0.2	-	μs
Fall Time	t _f		-	0.1	-	

TOTAL DEVICE

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Bias Current	I _B	V _{CC} = 40V	-	5	10	mA