Ordering number : EN5674

Monolithic Linear IC

LA6516

Two-Output Power Amplifier

Overview

The LA6516 is a two-output power amplifier developed for use in both consumer and industrial equipment.

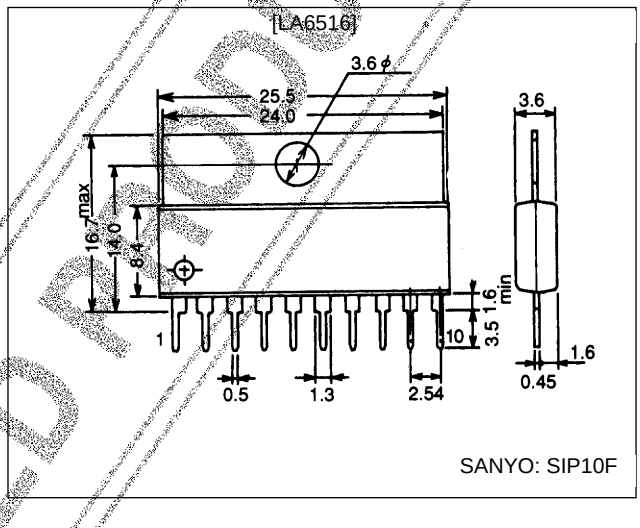
Functions

- High slew rate (1.0 V/µs)
- High output current (I_O max = 1.0 A)
- Current limiter function
- Wide operating voltage range (±2 to 18 V)
- Supports single-voltage power supply operation (4 to 36 V)
- Thermal shutdown function
- Muting circuit (Functions for both channels; when the mute input is high the output will be on.)

Package Dimensions

unit: mm

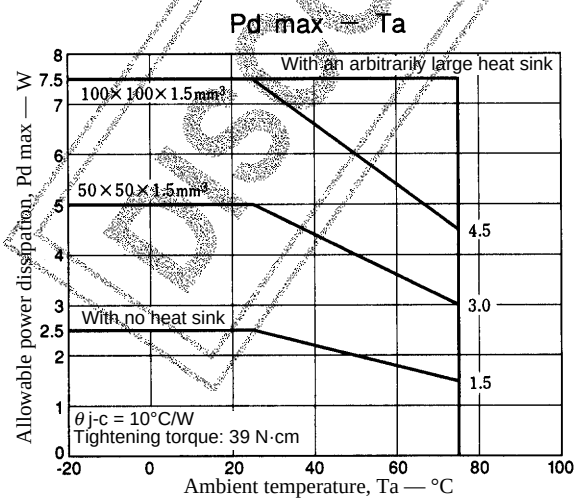
3046B-SIP10F



Specifications

Absolute Maximum Ratings at Ta = 25°C

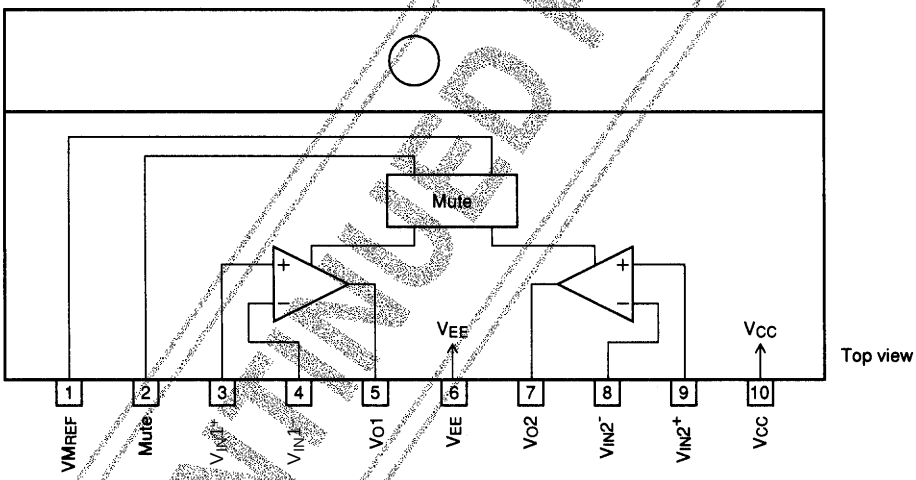
Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC}/V_{EE}		±18	V
Input voltage	V_{IN}		±17	V
Allowable power dissipation	Pd max		2.5	W
Operating temperature	Topr		–20 to +75	°C
Storage temperature	Tstg		–40 to +150	°C



Electrical Characteristics at Ta = 25°C, V_{CC} = 10 V, V_{EE} = –10 V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I_{CC}	Mute off		10	30	mA
Input offset voltage	V_{IO}	V_{CC}/V_{EE} = ±15 V		2	7	mV
Input offset current	I_{IO}			10	100	nA
Input bias current	I_B			50	300	nA
Common-mode input voltage range	V_{ICM}		–9		+8	V
Common-mode rejection ratio	CMRR	V_{IN} = 15 Vp-p		75		dB
Supply voltage rejection ratio	SVRR	V_{CC}/V_{EE} = ±5 V, 15 V		30		µV/V
Voltage gain	VG_O			80		dB
Maximum output voltage	V_O1	R_L = 33 Ω		±8		V
	V_O2	R_L = 8 Ω	±5.6	±6		V
Slew rate	SR	R_L = 2 kΩ		1		V/µS
Limit current	I_{LIMIT}			1		A
Muting on voltage	$V_{MUTE\ ON}$	VM_{REF} = 0.0 V	0.5	1.0		V
Muting off voltage	$VM_{UTE\ OFF}$	VM_{REF} = 0.0 V		1.0	2.0	V
Offset voltage temperature coefficient	$\Delta V_{IO}/\Delta T$	Ta = –20 to +75°C		25		µV/°C

Pin Assignment

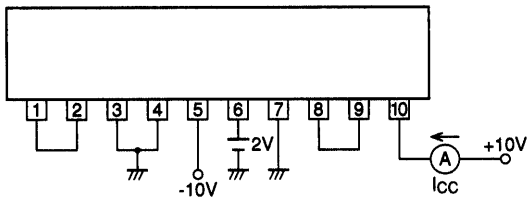


Pin Functions

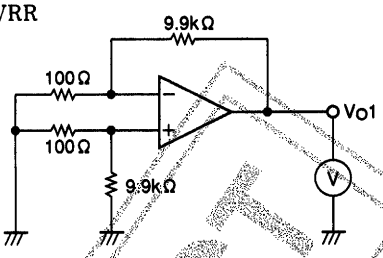
Pin No.	Pin	Item	Function
1	VM_{REF}	MUTE	Muting on/off reference voltage input
2	MUTE		Muting on/off signal input. Muting is activated when the MUTE pin voltage is less than the VM_{REF} pin voltage plus 1.2 V (typ).
3	$V_{IN}1^+$	AMP1	Amplifier 1 noninverting input
4	$V_{IN}1^-$		Amplifier 1 inverting input
5	V_O1		Amplifier 1 output
6	V_{EE}	Negative power supply	Negative power supply (–2.0 to –18.0 V)
7	V_O2	AMP2	Amplifier 2 output
8	$V_{IN}2^-$		Amplifier 2 inverting input
9	$V_{IN}2^+$		Amplifier 2 noninverting input
10	V_{CC}	Positive power supply	Positive power supply (+2.0 to +18.0 V)

Test Circuits

• I_{CC}



• V_{IO} SVRR



• For V_{IO}

$V_{CC}/V_{EE}=\pm15V$

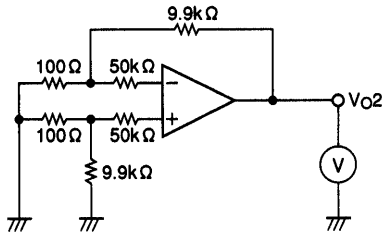
$V_{IO}=V_{O1}/100$

• For SVRR

$V_{CC}/V_{EE}=\pm5V, \pm15V$

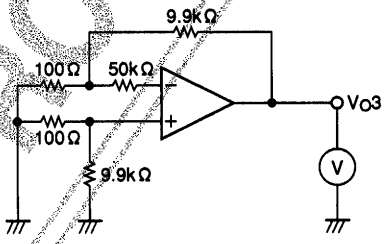
$SVRR=\left|\frac{\triangle V_{O1}}{100\times10V}\right|$

• I_{IO}



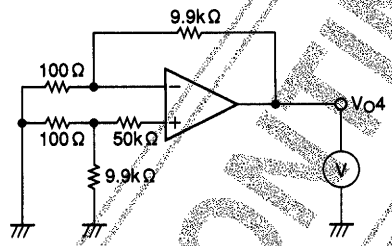
$\cdot I_{IO}=\frac{|V_{O2}-V_{O1}|}{50k\times100}$

• I_B^-



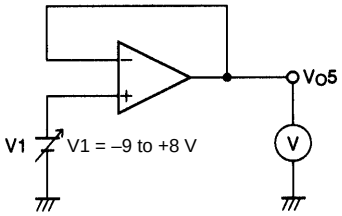
$\cdot I_B^-=\frac{|V_{O3}-V_{O1}|}{50k\times100}$

• I_B^+

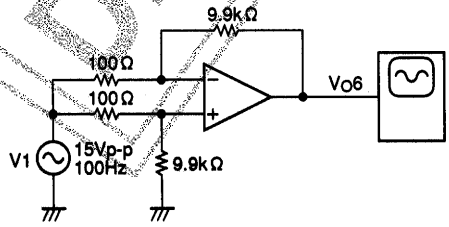


$\cdot I_B^+=\frac{|V_{O4}-V_{O1}|}{50k\times100}$

• V_{ICM}

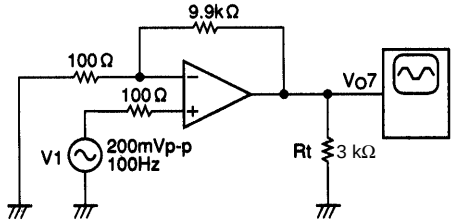


• CMRR



$\cdot CMRR=20\log\frac{15\times100}{|\triangle V_{O6}|}$

• I_{SC}



• $V_{CC}/V_{EE}=\pm14V$

• $I_{SC}=V_{O7}/10$

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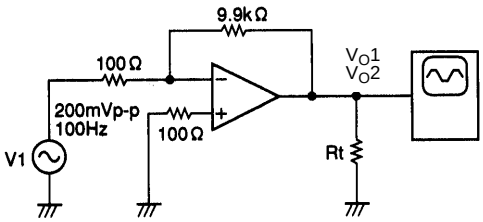
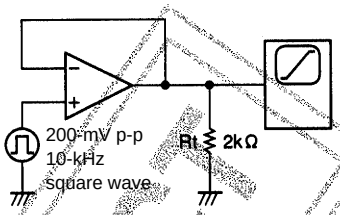
• V_O



• For V_O1: R_L = 33 Ω
• For V_O2: R_L = 8 Ω

• SR



• Vth ON, Vth OFF