

HA17558 Series

Dual Operational Amplifier

REJ03D0682-0100
(Previous: ADE-204-042)
Rev.1.00
Jun 15, 2005

Description

HA17558 is dual operational amplifiers which provides internal frequency compensation and high performance. It can be applied widely to measuring control equipment and to general Use. The two amplifiers share a common bias network and power supply leads.

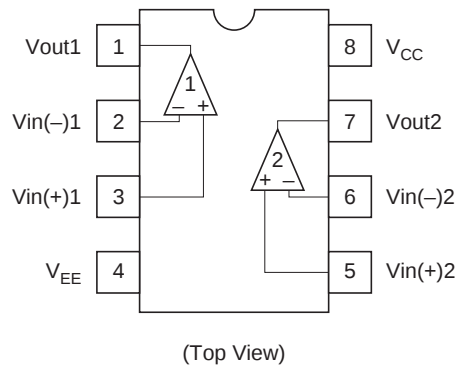
Features

- High voltage Gain: 104dB (Typ)
- High speed: 1V/ μ s
- Continuous short-circuit protection
- Low-noise operational amplifiers
- Internal frequency compensation

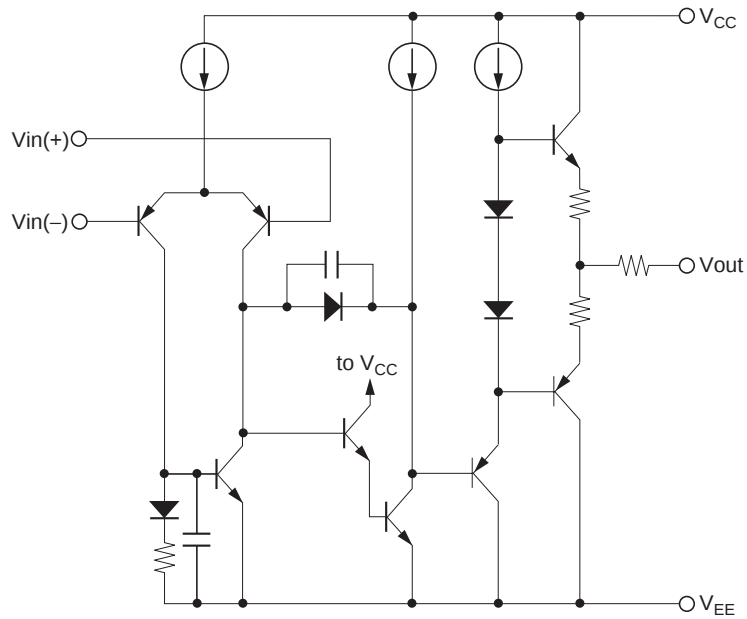
Ordering Information

Type No.	Application	Package Code (Previous Code)
HA17558FP	Industrial use	PRSP0008DE-B (FP-8DGV)
HA17558F	Commercial use	PRSP0008DE-B (FP-8DGV)
HA17558	Commercial use	PRDP0008AF-A (DP-8B)
HA17558PS	Industrial use	PRDP0008AF-A (DP-8B)

Pin Arrangement



Circuit Schematic (1/2)



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings				Unit
		HA17558	HA17558PS	HA17558F	HA17558FP	
Supply voltage	V _{CC}	+18	+18	+18	+18	V
	V _{EE}	−18	−18	−18	−18	V
Differential input voltage	V _{IN (diff)}	±30	±30	±30	±30	V
Common-mode input voltage	V _{CM} * ³	±15	±15	±15	±15	V
Power dissipation	P _T	670* ¹	670* ¹	385* ²	385* ²	mW
Operating temperature	Topr	−20 to +75	−20 to +75	−20 to +75	−20 to +75	−20 to +75
Storage temperature	Tstg	−55 to +125	−55 to +125	−55 to +125	−55 to +125	°C

- Notes: 1. These are the allowable values up to Ta = 45 °C. Derate by 8.3mW/°C above that temperature.
 2. These are the allowable values up to Ta = 31 °C mounting on 30% wiring density glass epoxy board. Derate by 7.14mW/°C above that temperature.
 3. If the supply voltage is less than ±15V, input voltage should be less than supply voltage.

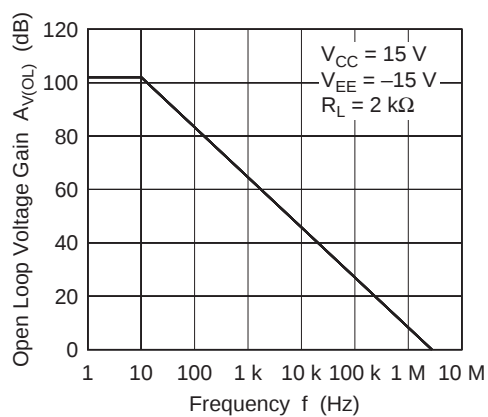
Electrical Characteristics

(Ta = 25°C, V_{CC} = +15V, V_{EE} = −15V)

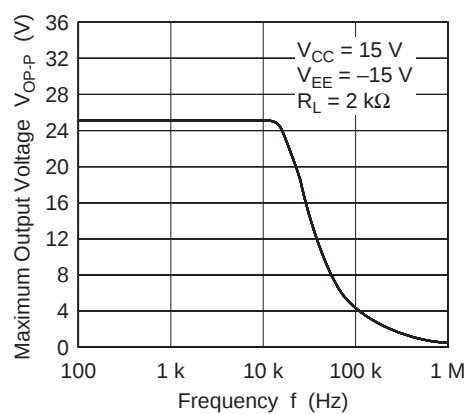
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Input offset voltage	V _{IO}	—	0.5	6	mV	R _S ≤ 10kΩ
Input offset current	I _{IO}	—	5	200	nA	
Input bias current	I _{IB}	—	50	500	nA	
Voltage gain	A _{VD}	86	104	—	dB	R _L ≥ 2kΩ, V _O = ±10V
Maximum output voltage	V _{op-p}	±12	±14	—	V	R _L ≥ 10kΩ
Maximum output voltage	V _{op-p}	±10	±12.4	—	V	R _L ≥ 2kΩ
Common mode input voltage range	V _{CM}	±12	±14	—	V	
Common mode rejection ratio	CMR	70	100	—	dB	R _S ≤ 10kΩ
Supply voltage rejection ratio	PSRR	—	10	150	μV/V	R _S ≤ 10kΩ
Power dissipation	P _d	—	90	170	mW	2-channel, No load
Slew rate	SR	—	1.0	—	V/μs	A _{VD} = 1
Equivalent input noise voltage	V _{NI}	—	6	—	μVp-p	R _S = 1kΩ, f = 1Hz to 1kHz
Channel separation	CS	—	105	—	dB	f = 1kHz

Characteristic Curves

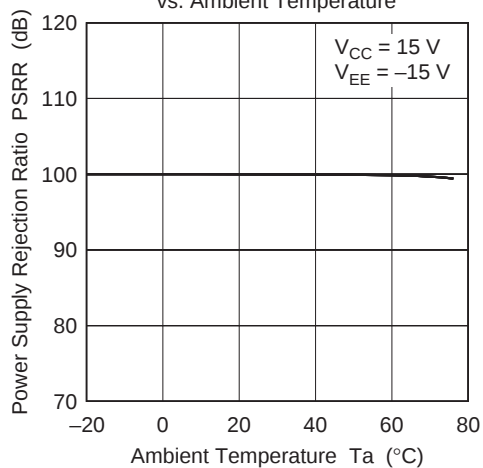
Open Loop Voltage Gain vs. Frequency



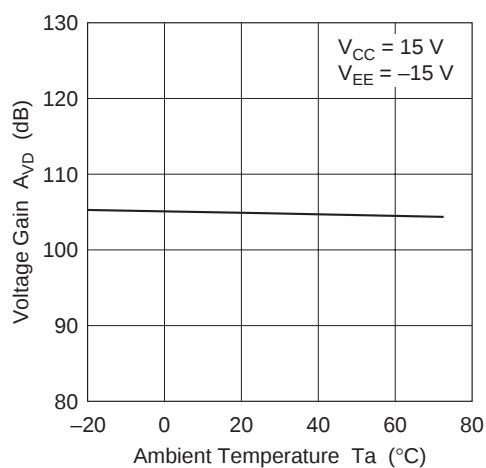
Maximum Output Voltage vs. Frequency



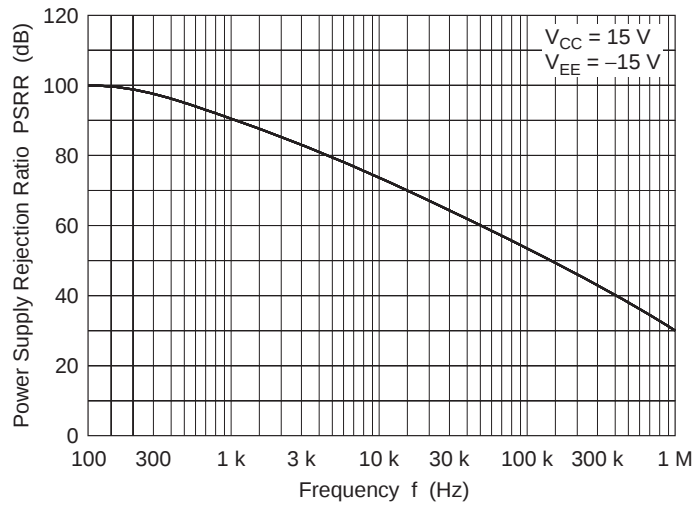
Power Supply Rejection Ratio vs. Ambient Temperature



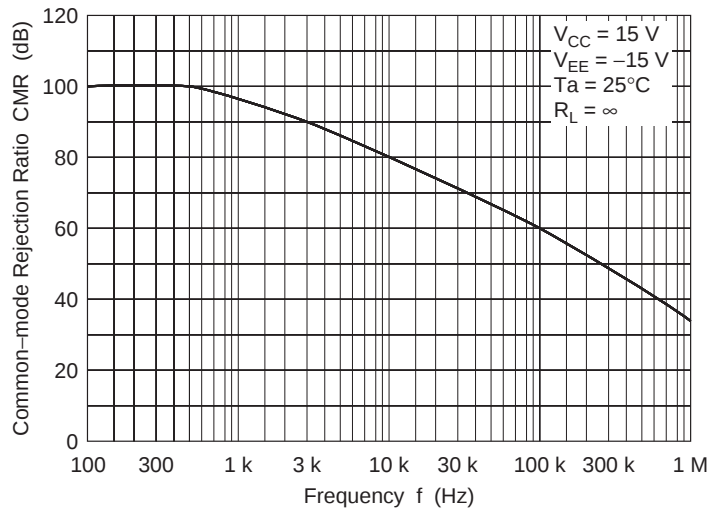
Voltage Gain vs. Ambient Temperature

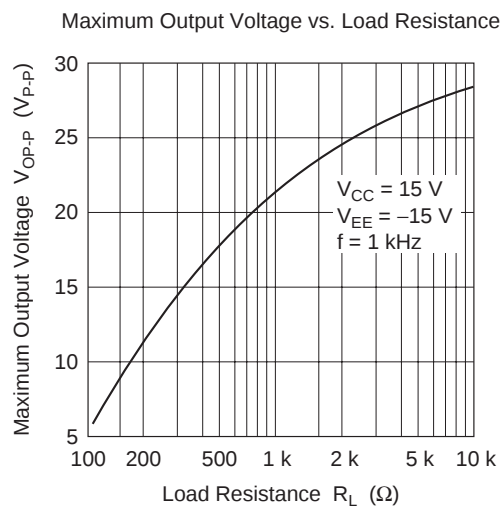
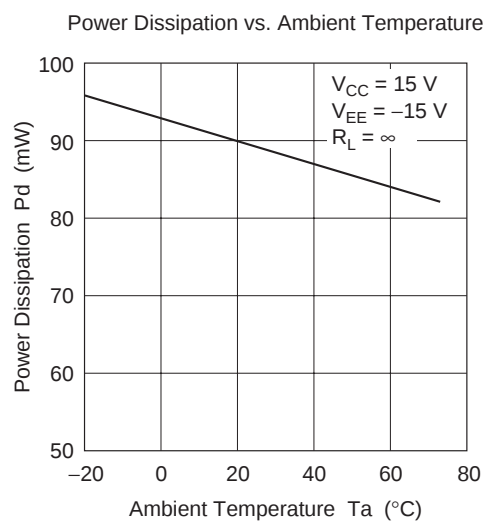
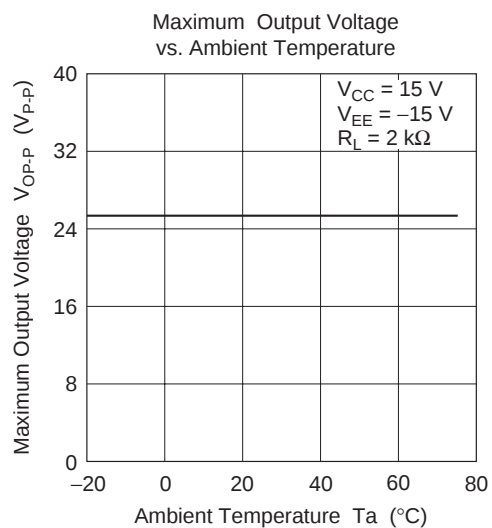
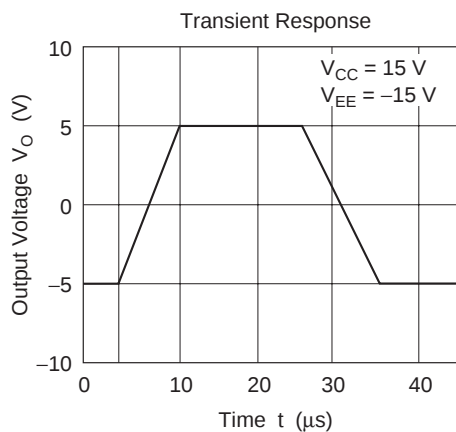


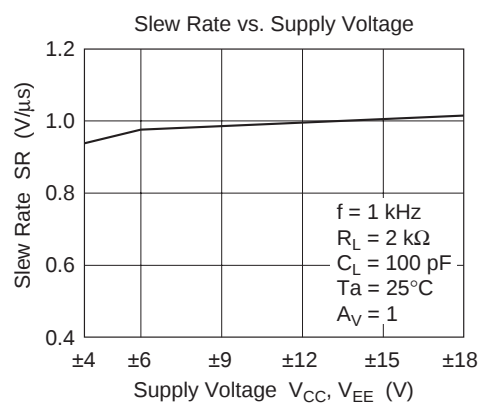
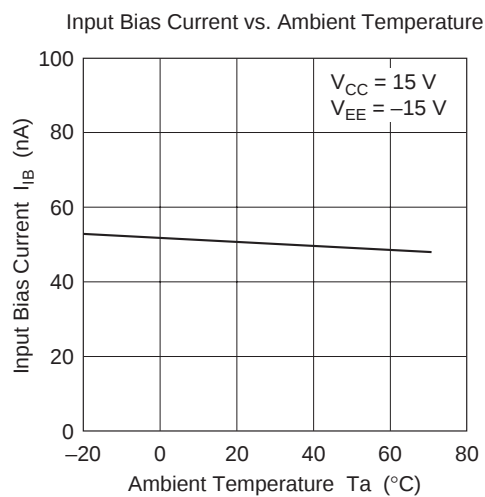
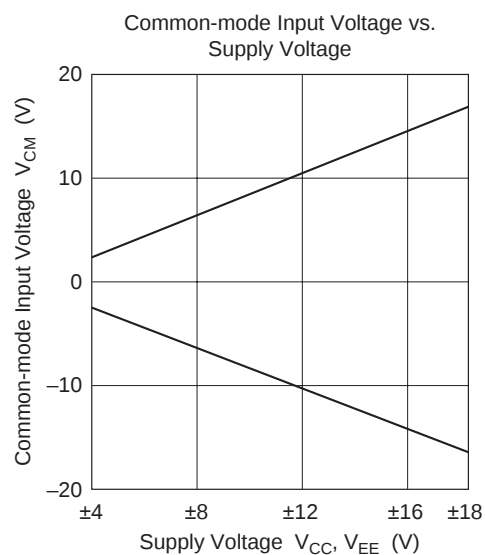
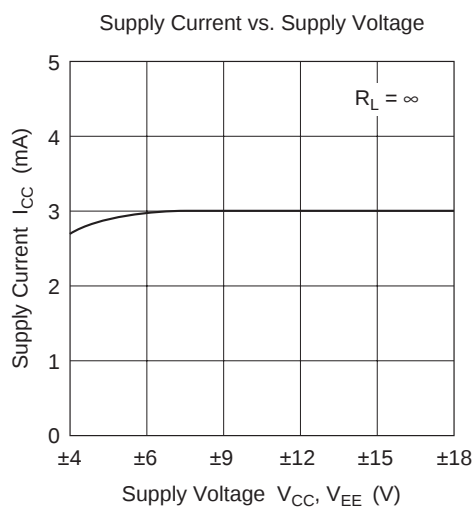
Power Supply Rejection Ratio vs. Frequency

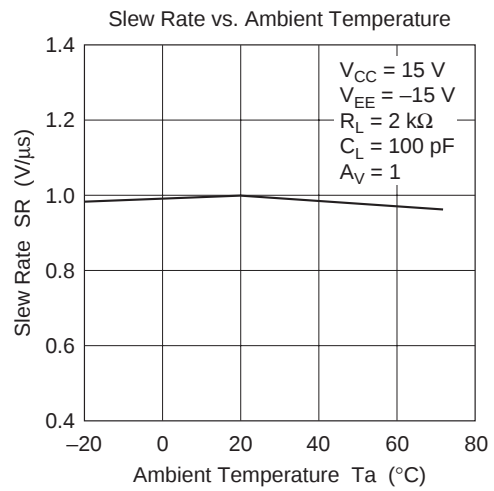
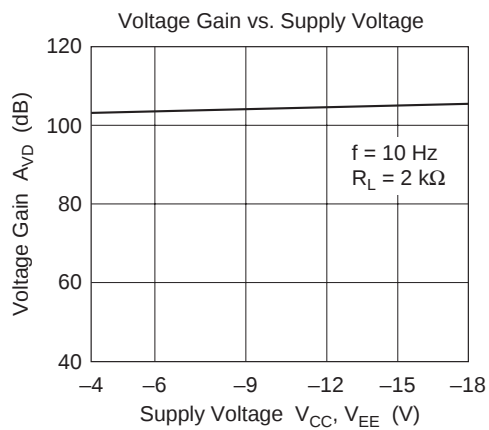
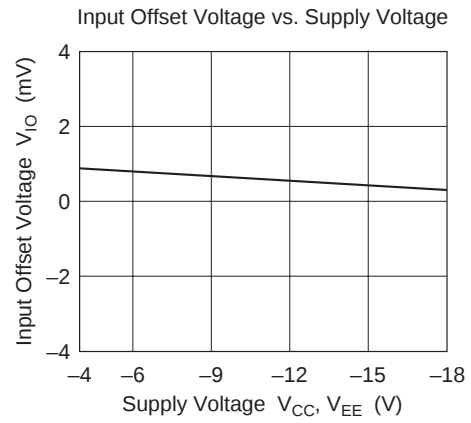
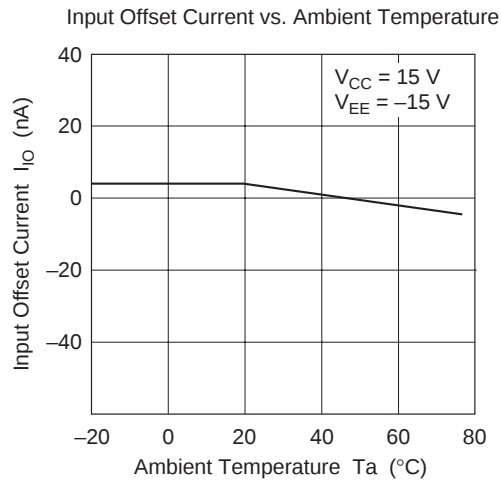


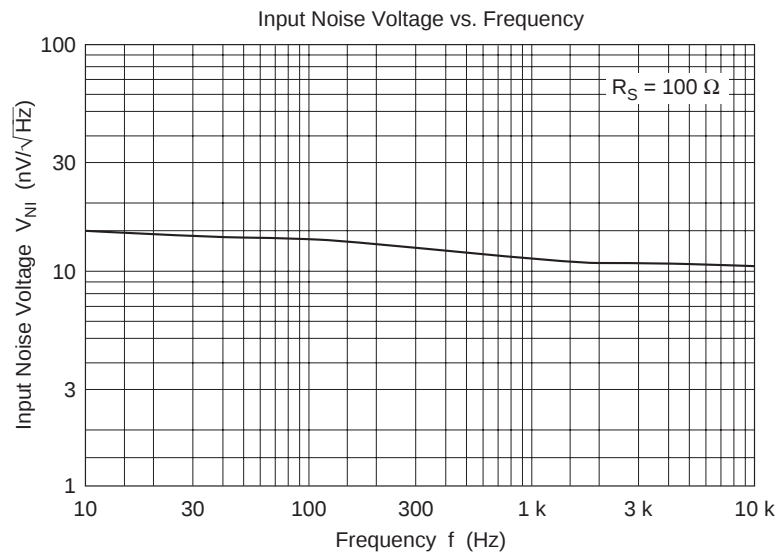
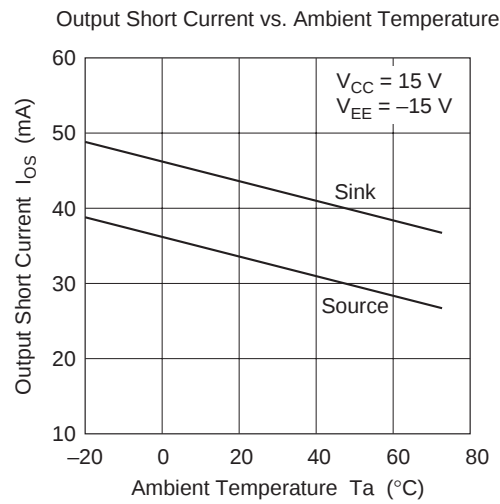
Common-mode Rejection Ratio vs. Frequency

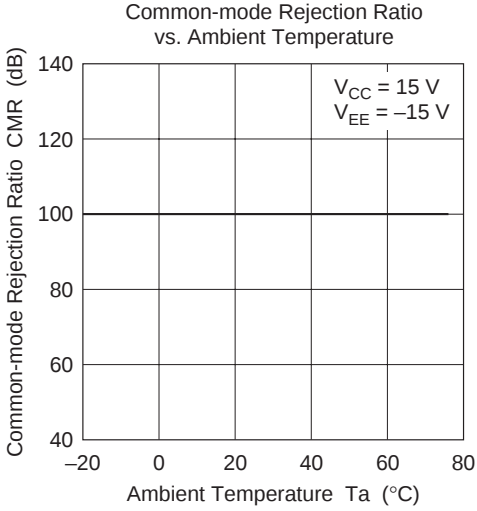
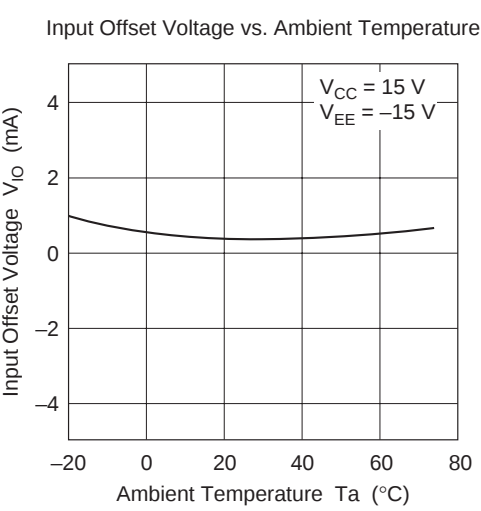




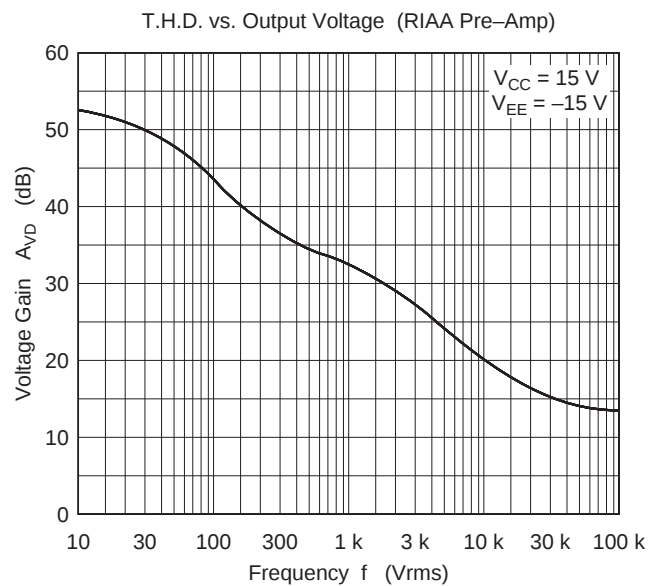
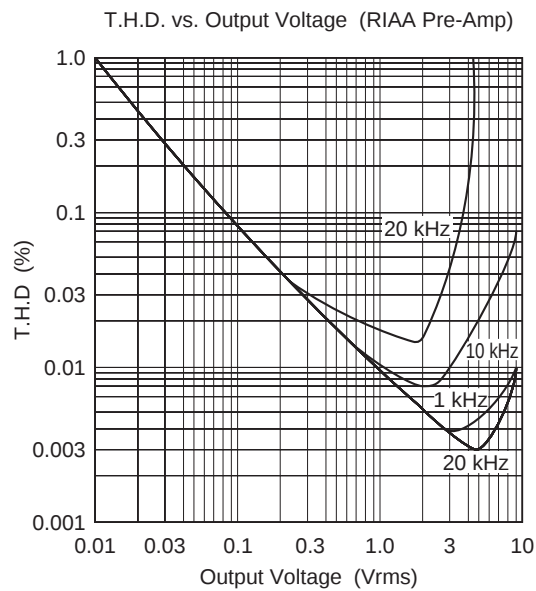
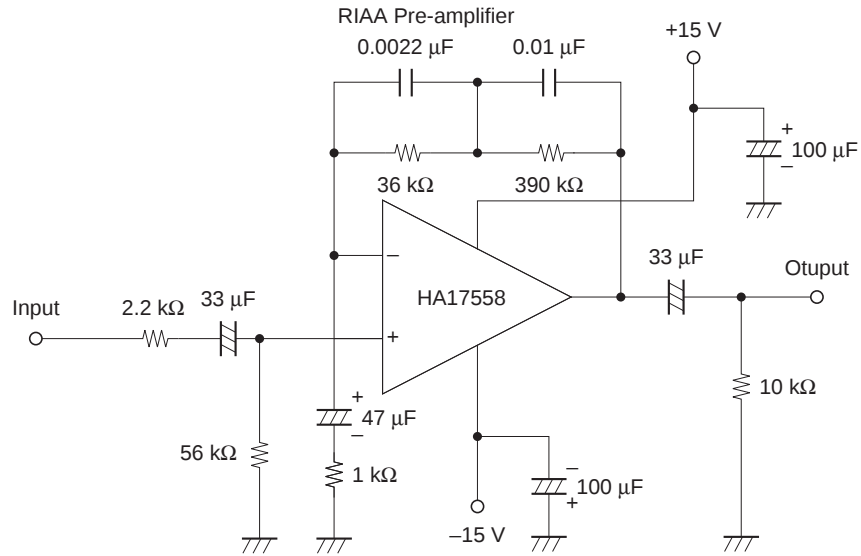




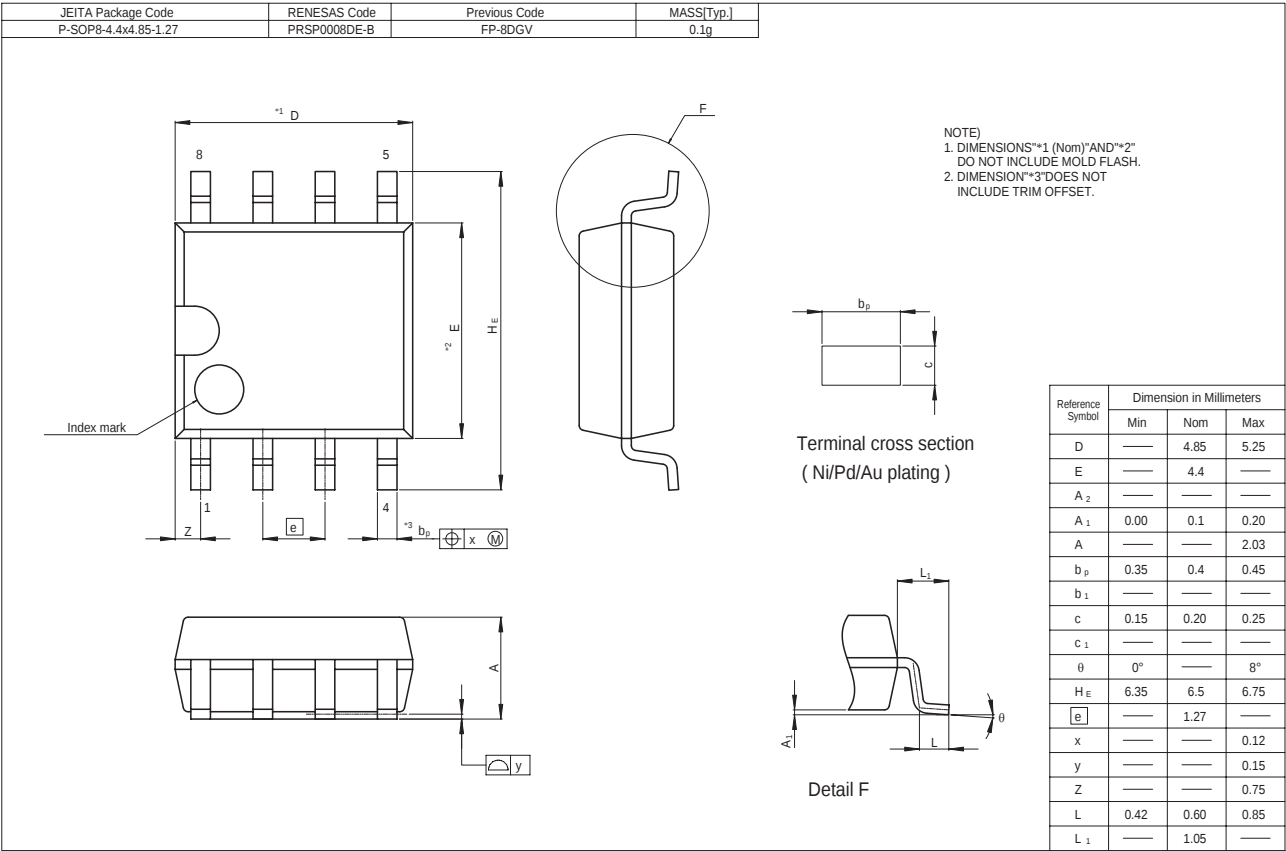
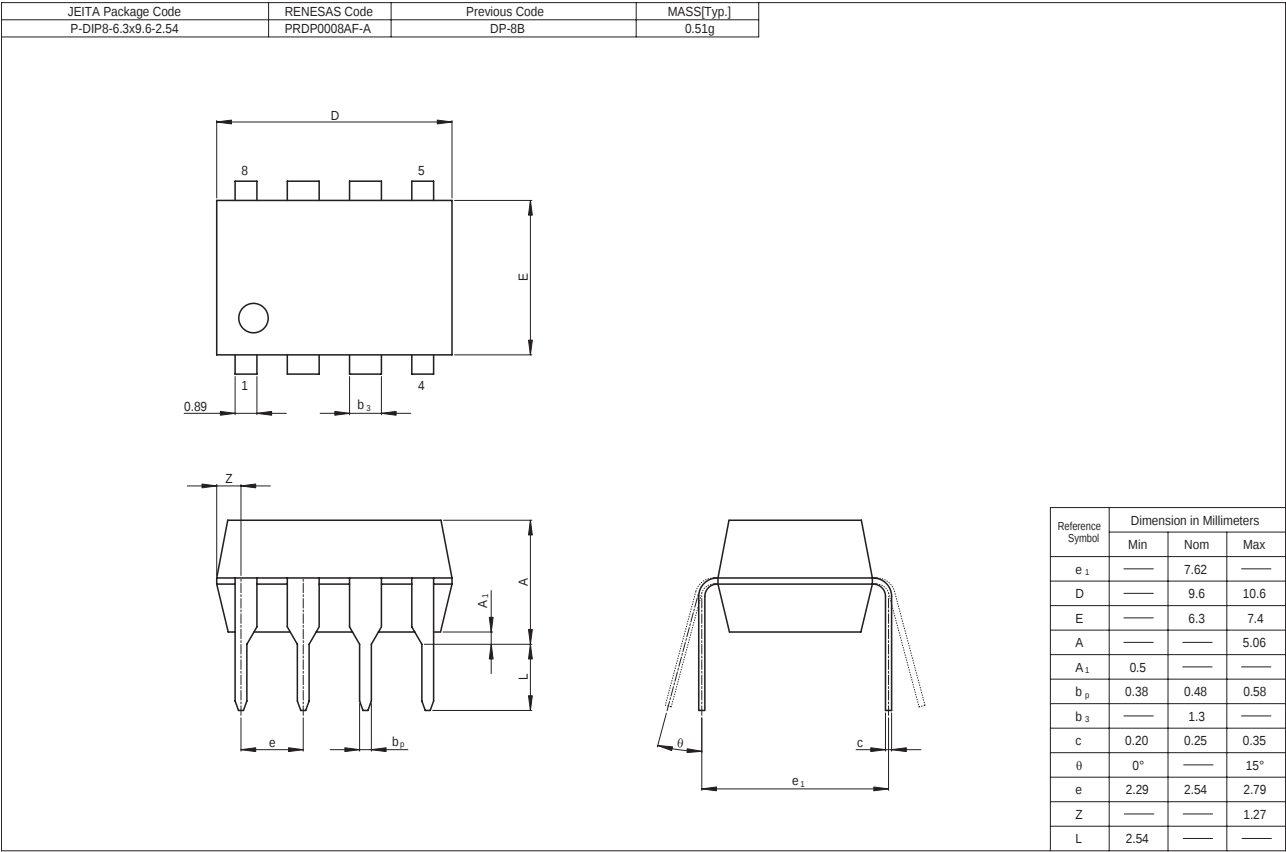




Circuit Example



Package Dimensions



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