

M51566P

PREAMPLIFIER WITH PHOTODETECTOR FOR OPTICAL PICKUP

DESCRIPTION

The M51566P is a semiconductor integrated circuit developed for CD players. The IC is housed in a 10-pin clear molded plastic package and contains 6 preamplifiers with divided photodetectors.

FEATURES

- 6 amplifiers with divided photodetectors
- For 3 LASER pickup system
- 2 operation modes can be selected rated supply voltage



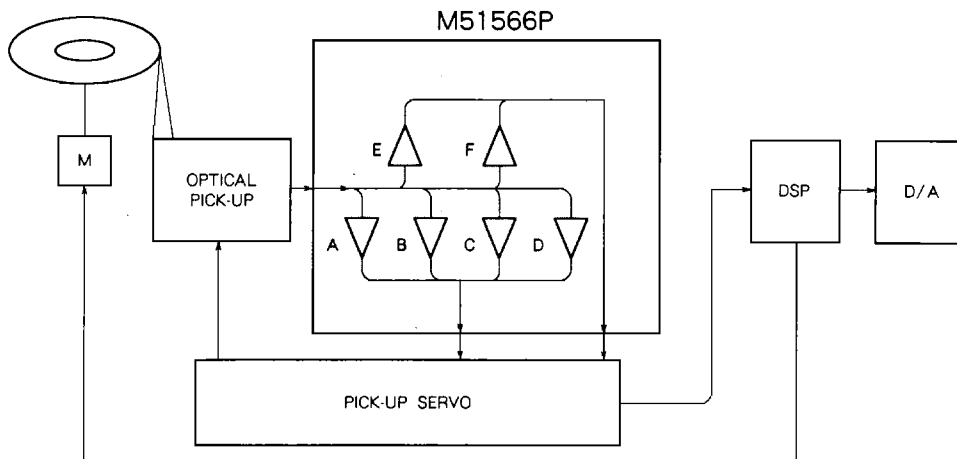
Outline 10C2-C

1.27mm pitch 300mil SOP
(5.3mm × 6.13mm × 1.75mm)

RECOMMENDED OPERATING CONDITIONS

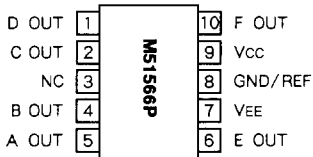
Supply voltage range..... V_{CC} , $V_{EE} = \pm 4.5 \sim 5.5V$
 or $V_{CC} = 4.5 \sim 5.5V$
 Rated supply voltage..... V_{CC} , $V_{EE} = \pm 5V$ or $V_{CC} = 5V$
 Rated power dissipation 20mW

SYSTEM CONFIGURATION



PREAMPLIFIER WITH PHOTODETECTOR FOR OPTICAL PICKUP

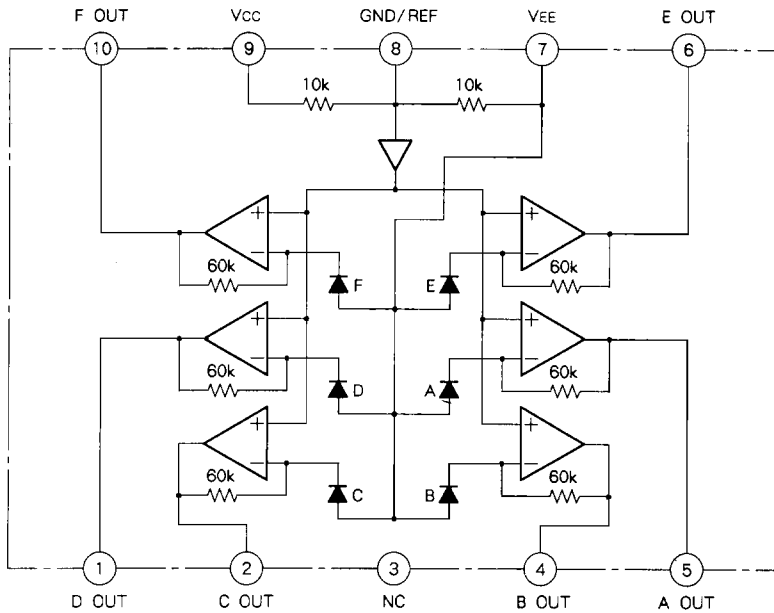
PIN CONFIGURATION



Outline 10C2-C

NC : NO CONNECTION

IC INTERNAL BLOCK DIAGRAM



Unit Resistance : Ω

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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C, unless otherwise noted)

Symbol	Parameter	Ratings	Unit
V _{CC}	Supply voltage	6.5	V
V _{EE}		- 6.5	V
P _d	Power dissipation (Ta ≥ 25°C)	180	mW
T _{opr}	Operating temperature	- 20~ + 65	°C
T _{stg}	Storage temperature	- 40~ + 85	°C

ELECTRICAL CHARACTERISTICS

(1) AT SPLIT SUPPLY VOLTAGE (V_{CC} = + 5V, V_{EE} = - 5V, R_L = 10kΩ, Ta = 25°C)

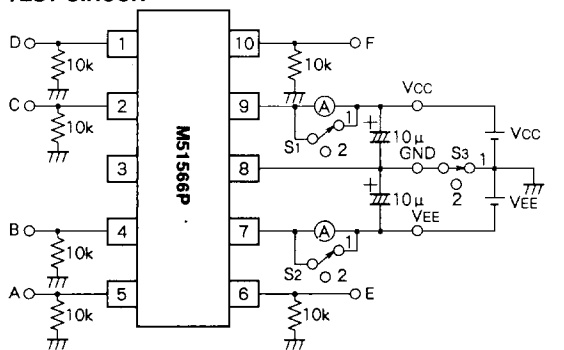
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I _{CCO}	Circuit current	In the dark	-	4	8	mA
I _{EEO}			- 8	- 4	-	mA
V _O	Output voltage	P ₀ = 5μW, λ = 780nm, Output A~F, without offset voltage	-	100	-	mV
V _{off}	Output offset voltage	In the dark output A~F	-	0	± 60	mV
ΔV _{off}	Delta output offset voltage	(A + C) - (B + D)	-	0	± 40	mV
		E - F	-	0	± 25	mV
f _c	Frequency characteristic	P ₀ = 5μW, λ = 780nm, 10% modulation, 3 dB down, output A~F	1	3	-	MHz

(2) AT SINGLE SUPPLY VOLTAGE (V_{CC} = 5V, R_L = 10kΩ, Ta = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I _{CCO}	Circuit current	In the dark	-	3.5	7	mA
V _O	Output current	P ₀ = 5μW, λ = 780nm, Output A~F, without offset voltage	-	100	-	mV
V _{off}	Output offset voltage	In the dark Output A~F	-	0	± 60	mV
ΔV _{off}	Delta output offset voltage	(A + C) - (B + D)	-	0	± 40	mV
		E - F	-	0	± 25	mV
V _O	Frequency characteristic	P ₀ = 5μW, λ = 780nm, 10% modulation, 3 dB down, output A~F	1	3	-	MHz

Note: Voltage is the offset from the 8-pin voltage.

TEST CIRCUIT



Units Resistance : Ω
Capacitance : F

SWITCH CONDITIONS

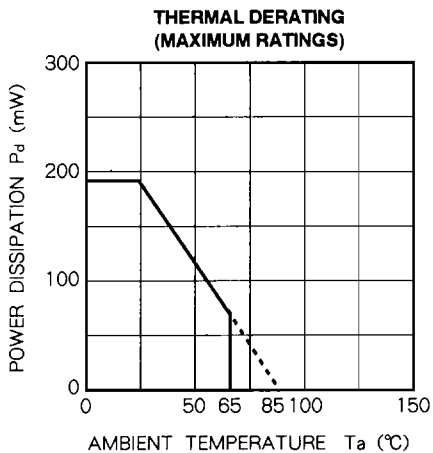
	1	2
S ₁	otherwise	I _{CCO}
S ₂	otherwise	I _{EEO}
S ₃	Split supply voltage	Single supply voltage

V_{CC}, V_{EE} CONDITIONS

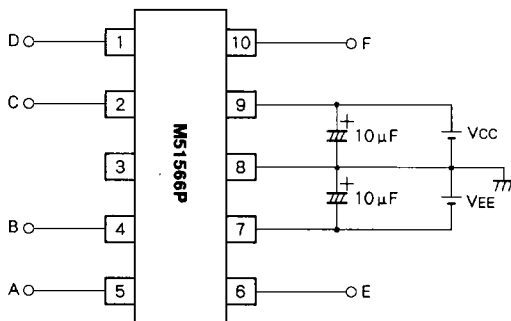
	V _{CC} (V)	V _{EE} (V)
split supply	5	5
single supply	2.5	2.5

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TYPICAL CHARACTERISTICS



APPLICATION EXAMPLE



PD SIZE (TYPICAL)

