PRELIMINARY

Notice:This is not a final specification.
Some parametric limits are subject to change.

M52738P

3-CHANNEL VIDEO PREAMPLIFIER WITH OSD MIXING, RETRACE BLANKING

DESCRIPTION

The M52738P is semiconductor integrated circuit for CRT display monitor.

It includes OSD blanking function, OSD mixing, Wide-band amplifier, Main and sub contrast controls, Brightness control function.

FEATURES

- Frequency Band Width : RGB.....130MHz (at -3dB)
  OSD.....80MHz
  Input : RGB.....0.7V_{P-P} (typ.)
  OSD.....1.6V_{P-P} minimum (positive)
  OSD BLK.....1.6V_{P-P} minimum (positive)
  Retrace BLK.....1.2V_{P-P} maximum (negative)
  Output : RGB.....4V_{P-P} (min.)
  OSD.....4V_{P-P} (min.)
- Contrast and brightness can be controlled with a main control. The Main control changes contrast or brightness of 3-channels simultaneously. The sub control changes contrast of each channel independently.

STRUCTURE

Bipolar silicon monolithic IC

APPLICATION

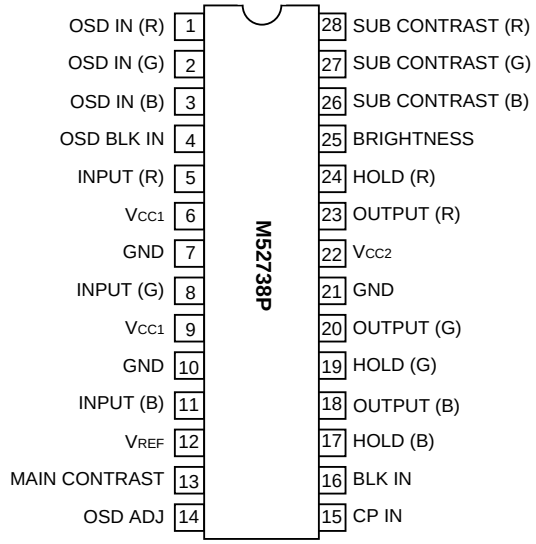
CRT display monitor

RECOMMENDED OPERATING CONDITION

Supply voltage range.....11.4 to 12.6V

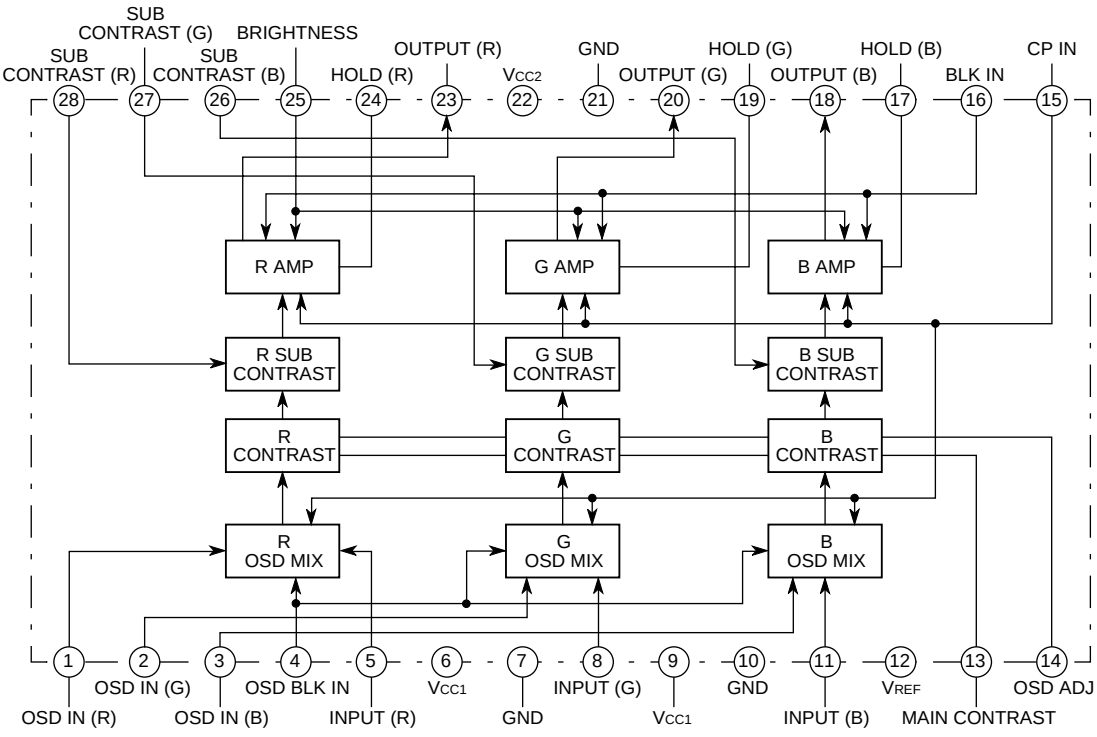
Rated supply voltage.....12.0V

PIN CONFIGURATION (TOP VIEW)



Outline 28P4

BLOCK DIAGRAM



PRELIMINARY

Notice:This is not a final specification.
Some parametric limits are subject to change.

M52738P

3-CHANNEL VIDEO PREAMPLIFIER WITH OSD MIXING, RETRACE BLANKING

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Ratings	Unit
V_{CC}	Supply voltage	13	V
P_d	Power dissipation	2000	mW
T_{opr}	Operating temperature	-20 to 70	°C
T_{stg}	Storage temperature	-40 to 150	°C
V_{opr}	Recommended operating supply voltage	12	V
$V_{opr'}$	Recommended operating supply voltage range	11.4 to 12.6	V
Surge	Electrostatic discharge	±200	V

ELECTRICAL CHARACTERISTICS (Ta=25°C, V_{CC1}=V_{CC2}=12V, unless otherwise noted)

Symbol	Parameter	Test point	Test conditions	Limits			Unit
				Min.	Typ.	Max.	
I_{CC}	I_{CC}	6, 9, 21	No input. Measurement of current that flows into 6, 9 and 21	–	100		mA
Gmax	Maximum gain	18, 20, 23	18, 20, 23 input VSG, 15 input PG V13=4V V26, V27, V28=4V		20		dB
ΔGmax	Relative maximum gain	–	–	0.8	1.0	1.2	dB
V_{CR1}	Contrast control characteristics (typical)	18, 20, 23	18, 20, 23 input VSG, 15 input PG V13=2V V26, V27, V28=4V		14		dB
V_{CR2}	Contrast control characteristics (minimum)	18, 20, 23	18, 20, 23 input VSG, 15 input PG V13=0.25V V26, V27, V28=4V		0.25		V_{P-P}
V_{SCR1}	Sub contrast control characteristics (typical)	18, 20, 23	18, 20, 23 input VSG, 15 input PG V26, V27, V28=2V V13=4V		15.5		dB
V_{SCR2}	Sub contrast control characteristics (minimum)	18, 20, 23	18, 20, 23 input VSG, 15 input PG V26, V27, V28=0.25V V13=4V		1.1		V_{P-P}
V_{B1}	Brightness control characteristics (maximum)	18, 20, 23	15 input PG V25=10V		8.5		V
V_{B2}	Brightness control characteristics (typical)	18, 20, 23	15 input PG V25=1V		1.1		V
V_{B3}	Brightness control characteristics (minimum)	18, 20, 23	15 input PG V25=0V	–	–	0.1	V
F_{C1}	Frequency characteristics 1 (f=50MHz;maximum)	18, 20, 23	18, 20, 23 input SG		0		dB
F_{C2}	Frequency characteristics 2 (f=130MHz; maximum)	18, 20, 23	18, 20, 23 input SG	-3	–	–	dB
Tr	Video output rise time	18, 20, 23	18, 20, 23 input PG, 15 input PG		3.0		nsec
Tf	Video output fall time	18, 20, 23	18, 20, 23 input PG, 15 input PG		4.0		nsec
V_{thCP}	Clamp pulse threshold voltage	18, 20, 23	18, 20, 23 input VSG, 15 input PG		1.2		V
OT_r	OSD output rise time	18, 20, 23	1, 2, 3 input PG, 15 input PG		4		nsec
OT_f	OSD output fall time	18, 20, 23	1, 2, 3 input PG, 15 input PG		10		nsec
O_{aj1}	OSD adjust control (maximum)	18, 20, 23	1, 2, 3 input PG, 15 input PG V14=4V V26, V27, V28=2V		5		V_{P-P}
O_{aj2}	OSD adjust control (minimum)	18, 20, 23	1, 2, 3 input PG, 15 input PG V14=0V V26, V27, V28=2V		0		V_{P-P}
OSD_{th}	OSD input threshold voltage	18, 20, 23	1, 2, 3 input PG, 15 input PG 4 input PG		1.6		V
H_{BLK}	Retrace BLK characteristics	18, 20, 23	16 input PG	–	–	0.5	V
H_{vth}	Retrace BLK input threshold voltage	18, 20, 23	16 input PG		1.2		V

Note 1: The ambient temperature is 25°C.
2: The supply voltage is 12V.
3: The direction of a current that flows toward the IC is regarded as plus.

TYPICAL CHARACTERISTICS

