

# AN3266FAP

# Video luminance signal recording/playback processing IC

## ■ Overview

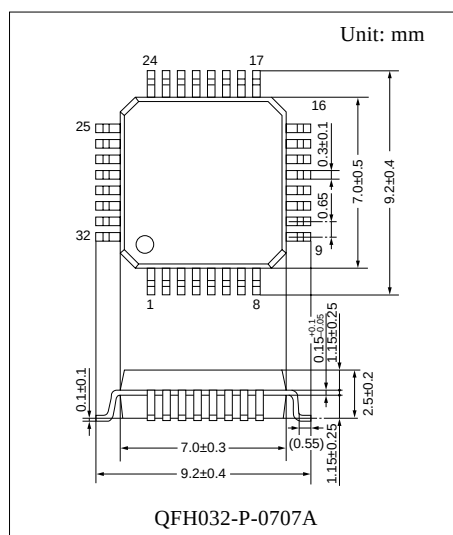
The AN3266FAP is a single chip IC in which the main signal processing part of VHS VCR luminance signal is integrated.

## ■ Features

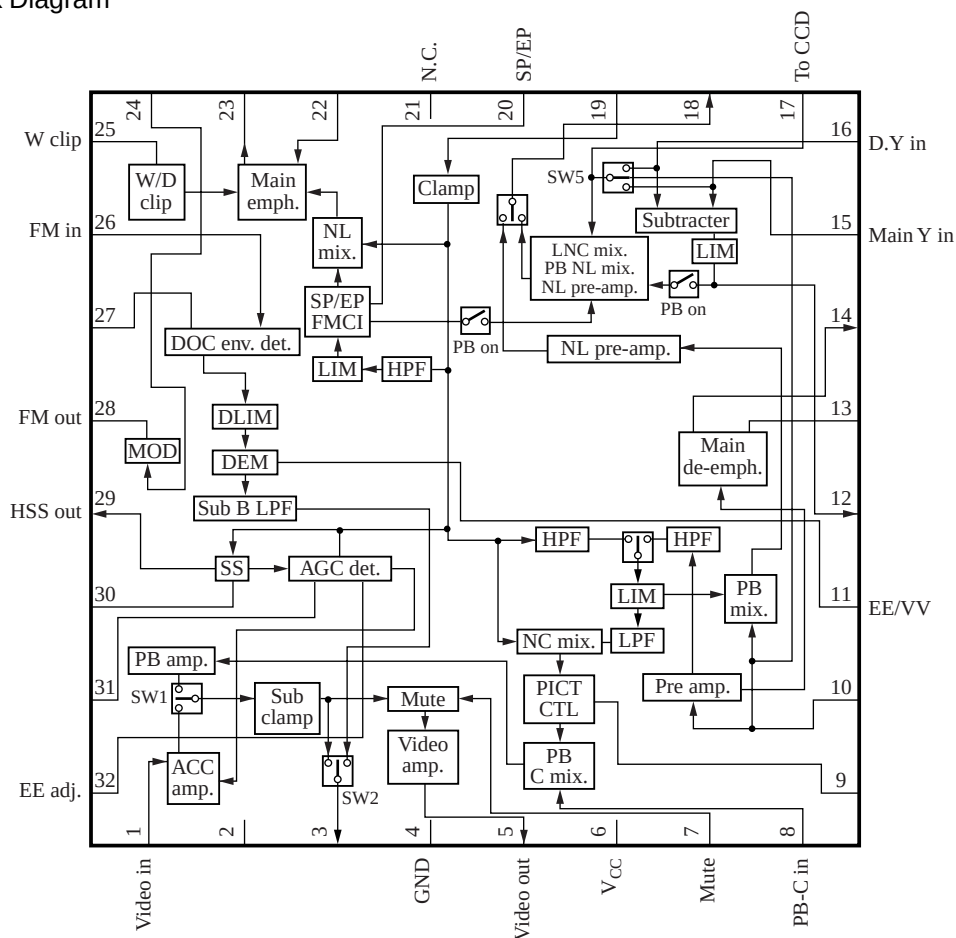
- 5 V single power supply
- T2FP package

## ■ Applications

- VHS VCR, VHS video camera



### ■ Block Diagram



## ■ Pin Descriptions

| Pin No. | Description                           | Pin No. | Description               |
|---------|---------------------------------------|---------|---------------------------|
| 1       | Video in                              | 17      | To CCD out                |
| 2       | Sub clamp det.                        | 18      | NL pre-emph. out          |
| 3       | Sub clamp out (REC), Sub LPF out (PB) | 19      | Clamp in                  |
| 4       | GND                                   | 20      | SP/EP select, FMCI CTL    |
| 5       | Video out                             | 21      | N.C.                      |
| 6       | V <sub>CC</sub>                       | 22      | NF input for main emph.   |
| 7       | Mute CTL                              | 23      | Main emph. out            |
| 8       | PB chroma in / DE off CTL             | 24      | FM current in             |
| 9       | Picture CTL                           | 25      | W clip CTL / LNC stop CTL |
| 10      | Signal input for main LPF             | 26      | PB RF in                  |
| 11      | VV level adjust., EE / VV select.     | 27      | Env. det.                 |
| 12      | LNC LIM out                           | 28      | REC FM out                |
| 13      | Main de-emphasis                      | 29      | Sync. sepa. out           |
| 14      | Main de-emphasis (out)                | 30      | Sync. sepa. det.          |
| 15      | Main Y sig. in                        | 31      | AGC det.                  |
| 16      | Delayed Y sig. in                     | 32      | EE adjust / NC off CTL    |

## ■ Absolute Maximum Ratings

| Parameter                        | Symbol           | Rating      | Unit |
|----------------------------------|------------------|-------------|------|
| Supply voltage                   | V <sub>CC</sub>  | 6           | V    |
| Supply current                   | I <sub>CC</sub>  | 68          | mA   |
| Power dissipation *2             | P <sub>D</sub>   | 208         | mW   |
| Operating ambient temperature *1 | T <sub>opr</sub> | −20 to +70  | °C   |
| Storage temperature *1           | T <sub>stg</sub> | −55 to +125 | °C   |

Note) \*1: Except for the operating ambient temperature and storage temperature, all ratings are for T<sub>a</sub> = 25°C.

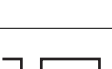
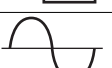
\*2: The power dissipation shown is for the IC package in free air at T<sub>a</sub> = 70°C.

P<sub>D</sub> = 417 mW (T<sub>a</sub> = 70°C) on mounting on a glass epoxy resin substrate of 50 × 50 × t0.8 mm<sup>3</sup>.

## ■ Recommended Operating Range

| Parameter      | Symbol          | Range      | Unit |
|----------------|-----------------|------------|------|
| Supply voltage | V <sub>CC</sub> | 4.5 to 5.5 | V    |

■ Electrical Characteristics at  $T_a = 25^\circ\text{C}$

| Parameter                             | Symbol           | Conditions                                                                                                                                      | Min  | Typ  | Max  | Unit          |
|---------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|---------------|
| Circuit current (REC)                 | $I_{CCR}$        | REC mode                                                                                                                                        | 30   | 42   | 54   | mA            |
| Circuit current (PB)                  | $I_{CCP}$        | PB mode                                                                                                                                         | 38   | 50   | 62   | mA            |
| EE mode hold voltage                  | $V_{EE}$         | $V_6 = \text{Variable}$                                                                                                                         | 0    | —    | 1.25 | V             |
| VV mode hold voltage                  | $V_{VV}$         | $V_6 = \text{Variable}$                                                                                                                         | 2.25 | —    | 5    | V             |
| SP mode hold voltage                  | $V_{SP}$         | $V_8 = \text{Variable}$                                                                                                                         | 0    | —    | 1.25 | V             |
| EP mode hold voltage                  | $V_{EP}$         | $V_8 = \text{Variable}$                                                                                                                         | 2.25 | —    | 5    | V             |
| FMCI off mode hold voltage            | $V_{FM1}$        | $V_A = \text{Variable}$                                                                                                                         | 2.25 | —    | 3.25 | V             |
| FMCI on mode hold voltage             | $V_{FM2}$        | $V_A = \text{Variable}$                                                                                                                         | 4.25 | —    | 5    | V             |
| EDIT mode hold voltage at PB          | $V_{EDPB}$       | $V_1 = \text{Variable}$                                                                                                                         | 0    | —    | 1.25 | V             |
| Mute CTL<br>Through mode hold voltage | $V_{THRU(PB)}$   | $V_1 = \text{Variable}$                                                                                                                         | 0    | —    | 1    | V             |
| Mute CTL<br>Quasi H mode hold voltage | $V_{GRAY}$       | $V_B = \text{Variable}$                                                                                                                         | 2    | —    | 3    | V             |
| Mute CTL<br>Quasi V mode hold voltage | $V_{MUTE}$       | $V_3 = \text{Variable}$                                                                                                                         | 4    | —    | 5    | V             |
| EDIT mode hold voltage at REC         | $V_{EDREC}$      | $V_4 = \text{Variable}$                                                                                                                         | 0    | —    | 1.25 | V             |
| Off mode hold voltage at LNC          | $V_{LNC}$        | $V_9 = \text{Variable}$                                                                                                                         | 0    | —    | 1.25 | V             |
| Through mode hold voltage at EE       | $V_{THRU}$       | $V_3 = \text{Variable}$                                                                                                                         | 0    | —    | 1    | V             |
| Quasi H gray level offset             | $\Delta V_5$     | PB mode                                                                                                                                         | 1.1  | 1.5  | 1.9  | V             |
| AGC output amplitude                  | $V_{1-5}$        |  White 100%<br>$V_{IN} = 1 \text{ V[p-p]}$                   | 1.3  | 2.0  | 2.7  | V[p-p]        |
| AGC control sensitivity               | $\Delta V_{1-5}$ |  White 100%<br>$V_{IN} = 1 \text{ V[p-p]}$                   | 0    | 0.3  | 1.2  | dB            |
| Video amp. frequency characteristics  | $f_{1-5}$        |  Sine wave 5 MHz / 100 kHz<br>$V_{IN} = 250 \text{ mV[p-p]}$ | -1.2 | -0.5 | 0.5  | dB            |
| Main emphasis output level            | $V_{1-23}$       |  White 100%<br>$V_{IN} = 1 \text{ V[p-p]}$                   | 260  | 300  | 340  | mV[p-p]       |
| D-clip level                          | $DV_{1-23}$      | —                                                                                                                                               | 45   | 55   | 65   | %             |
| Keyed pulse width                     | $t_{W31}$        |  Sync. sig.<br>$V_{IN} = 287 \text{ mV[p-p]}$                | 4.6  | 5.8  | 7.0  | $\mu\text{s}$ |
| SS minimum input sensitivity          | $S_{19}$         |  White 100%<br>$V_{IN} \text{ variable}$                     | —    | —    | 450  | mV[p-p]       |
| SS pulse delay                        | $t_{F29}$        |  $V_{IN} = 1 \text{ V[p-p]}$                                 | 460  | 660  | 860  | ns            |
| Over all gain for PB system           | $G_{10-5}$       |  White 100%<br>$V_{IN} = 100 \text{ mV[p-p]}$                | 24   | 26   | 30   | dB            |
| Quasi V insertion step                | $\Delta V_5$     |  White 100%<br>$V_{IN} = 100 \text{ mV[p-p]}$                | 20   | 70   | 120  | mV            |
| Chroma amp. gain                      | $G_{8-5}$        |  Sine wave<br>$V_{IN} = 200 \text{ mV[p-p]}$                 | 7.6  | 9.1  | 10.6 | dB            |

■ Electrical Characteristics at  $T_a = 25^\circ\text{C}$  (continued)

| Parameter                                       | Symbol                 | Conditions                                                                                                                                          | Min  | Typ  | Max  | Unit |
|-------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|
| DE frequency characteristics 1<br>(0 dB)        | $\Delta f_{10-18(1)}$  |  Sine wave 500 kHz / 10 kHz<br>$V_{IN} = 300 \text{ mV[p-p]}$      | -0.5 | 0    | 1.0  | dB   |
| DE frequency characteristics 2<br>(0 dB)        | $\Delta f_{10-18(2)}$  |  Sine wave 2 MHz / 10 kHz<br>$V_{IN} = 300 \text{ mV[p-p]}$        | -0.5 | 0.15 | 1.15 | dB   |
| DE frequency characteristics 3<br>(-10 dB)      | $\Delta f_{10-18(3)}$  |  Sine wave 500 kHz / 10 kHz<br>$V_{IN} = 94.9 \text{ mV[p-p]}$     | -0.5 | 0.17 | 1.17 | dB   |
| DE frequency characteristics 4<br>(-10 dB)      | $\Delta f_{10-18(4)}$  |  Sine wave 2 MHz / 10 kHz<br>$V_{IN} = 94.9 \text{ mV[p-p]}$       | -0.5 | 0.45 | 1.45 | dB   |
| DE frequency characteristics 5<br>(-20 dB)      | $\Delta f_{10-18(5)}$  |  Sine wave 500 kHz / 10 kHz<br>$V_{IN} = 30 \text{ mV[p-p]}$       | -0.5 | 0.5  | 1.5  | dB   |
| DE frequency characteristics 6<br>(-20 dB)      | $\Delta f_{10-18(6)}$  |  Sine wave 2 MHz / 10 kHz<br>$V_{IN} = 30 \text{ mV[p-p]}$         | 0.3  | 1.3  | 2.3  | dB   |
| DE frequency characteristics 7<br>(-30 dB)      | $\Delta f_{10-18(7)}$  |  Sine wave 500 kHz / 10 kHz<br>$V_{IN} = 9.5 \text{ mV[p-p]}$      | 0    | 1.0  | 2.0  | dB   |
| DE frequency characteristics 8<br>(-30 dB)      | $\Delta f_{10-18(8)}$  |  Sine wave 2 MHz / 10 kHz<br>$V_{IN} = 9.5 \text{ mV[p-p]}$        | 2.2  | 3.2  | 4.2  | dB   |
| DE off mode<br>(-30 dB)                         | $\Delta G_{10-18}$     |  Sine wave 2 MHz<br>$V_{IN} = 9.5 \text{ mV[p-p]}$                 | -4.2 | -3.2 | -2.2 | dB   |
| REC NL frequency characteristics 1<br>(0 dB)    | $\Delta f_{19-23(1)}$  |  Sine wave $V_{IN} = 1 \text{ V[p-p]}$<br>SP 500 kHz / 10 kHz      | -0.5 | 0.5  | 1.5  | dB   |
| REC NL frequency characteristics 2<br>(0 dB)    | $\Delta f_{19-23(2)}$  |  Sine wave $V_{IN} = 1 \text{ V[p-p]}$<br>SP 1.5 MHz / 10 kHz    | 0    | 1.0  | 2.0  | dB   |
| REC NL frequency characteristics 3<br>(-10 dB)  | $\Delta f_{19-23(3)}$  |  Sine wave $V_{IN} = 316 \text{ mV[p-p]}$<br>SP 500 kHz / 10 kHz | 0    | 1.0  | 2.0  | dB   |
| REC NL frequency characteristics 4<br>(-10 dB)  | $\Delta f_{19-23(4)}$  |  Sine wave $V_{IN} = 316 \text{ mV[p-p]}$<br>SP 1.5 MHz / 10 kHz | 1.3  | 2.3  | 3.3  | dB   |
| REC NL frequency characteristics 5<br>(-20 dB)  | $\Delta f_{19-23(5)}$  |  Sine wave $V_{IN} = 100 \text{ mV[p-p]}$<br>SP 500 kHz / 10 kHz | 0.1  | 1.1  | 2.1  | dB   |
| REC NL frequency characteristics 6<br>(-20 dB)  | $\Delta f_{19-23(6)}$  |  Sine wave $V_{IN} = 100 \text{ mV[p-p]}$<br>SP 1.5 MHz / 10 kHz | 2.1  | 3.1  | 4.1  | dB   |
| REC NL frequency characteristics 7<br>(0 dB)    | $\Delta f_{19-23(7)}$  |  Sine wave $V_{IN} = 1 \text{ V[p-p]}$<br>EP 500 kHz / 10 kHz    | 0.3  | 1.3  | 2.3  | dB   |
| REC NL frequency characteristics 8<br>(0 dB)    | $\Delta f_{19-23(8)}$  |  Sine wave $V_{IN} = 1 \text{ V[p-p]}$<br>EP 1.5 MHz / 10 kHz    | 1.3  | 2.3  | 3.3  | dB   |
| REC NL frequency characteristics 9<br>(-10 dB)  | $\Delta f_{19-23(9)}$  |  Sine wave $V_{IN} = 316 \text{ mV[p-p]}$<br>EP 500 kHz / 10 kHz | 1.3  | 2.3  | 3.3  | dB   |
| REC NL frequency characteristics 10<br>(-10 dB) | $\Delta f_{19-23(10)}$ |  Sine wave $V_{IN} = 316 \text{ mV[p-p]}$<br>EP 1.5 MHz / 10 kHz | 3.3  | 4.3  | 5.3  | dB   |
| REC NL frequency characteristics 11<br>(-20 dB) | $\Delta f_{19-23(11)}$ |  Sine wave $V_{IN} = 100 \text{ mV[p-p]}$<br>EP 500 kHz / 10 kHz | 1.6  | 2.6  | 3.6  | dB   |
| REC NL frequency characteristics 12<br>(-20 dB) | $\Delta f_{19-23(12)}$ |  Sine wave $V_{IN} = 100 \text{ mV[p-p]}$<br>EP 1.5 MHz / 10 kHz | 5.6  | 6.0  | 7.0  | dB   |

■ Electrical Characteristics at  $T_a = 25^\circ\text{C}$  (continued)

| Parameter                                      | Symbol                 | Conditions                                                                                                                                        | Min  | Typ  | Max  | Unit |
|------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|
| PB NL frequency characteristics 1<br>(0 dB)    | $\Delta f_{15-18(1)}$  |  Sine wave $V_{IN} = 300\text{ mV[p-p]}$<br>SP 500 kHz / 10 kHz  | -1.6 | -0.6 | 0.4  | dB   |
| PB NL frequency characteristics 2<br>(0 dB)    | $\Delta f_{15-18(2)}$  |  Sine wave $V_{IN} = 300\text{ mV[p-p]}$<br>SP 1.5 MHz / 10 kHz  | -2.0 | -1.0 | 0    | dB   |
| PB NL frequency characteristics 3<br>(-10 dB)  | $\Delta f_{15-18(3)}$  |  Sine wave $V_{IN} = 94.9\text{ mV[p-p]}$<br>SP 500 kHz / 10 kHz | -2.1 | -1.1 | -0.1 | dB   |
| PB NL frequency characteristics 4<br>(-10 dB)  | $\Delta f_{15-18(4)}$  |  Sine wave $V_{IN} = 94.9\text{ mV[p-p]}$<br>SP 1.5 MHz / 10 kHz | -3.5 | -2.5 | -1.5 | dB   |
| PB NL frequency characteristics 5<br>(-20 dB)  | $\Delta f_{15-18(5)}$  |  Sine wave $V_{IN} = 30\text{ mV[p-p]}$<br>SP 500 kHz / 10 kHz   | -2.2 | -1.2 | -0.2 | dB   |
| PB NL frequency characteristics 6<br>(-20 dB)  | $\Delta f_{15-18(6)}$  |  Sine wave $V_{IN} = 30\text{ mV[p-p]}$<br>SP 1.5 MHz / 10 kHz   | -4.2 | -3.2 | -2.2 | dB   |
| PB NL frequency characteristics 7<br>(0 dB)    | $\Delta f_{15-18(7)}$  |  Sine wave $V_{IN} = 300\text{ mV[p-p]}$<br>EP 500 kHz / 10 kHz  | -2.3 | -1.3 | -0.3 | dB   |
| PB NL frequency characteristics 8<br>(0 dB)    | $\Delta f_{15-18(8)}$  |  Sine wave $V_{IN} = 300\text{ mV[p-p]}$<br>EP 1.5 MHz / 10 kHz  | -3.3 | -2.3 | -1.2 | dB   |
| PB NL frequency characteristics 9<br>(-10 dB)  | $\Delta f_{15-18(9)}$  |  Sine wave $V_{IN} = 94.9\text{ mV[p-p]}$<br>EP 500 kHz / 10 kHz | -3.3 | -2.3 | -1.3 | dB   |
| PB NL frequency characteristics 10<br>(-10 dB) | $\Delta f_{15-18(10)}$ |  Sine wave $V_{IN} = 94.9\text{ mV[p-p]}$<br>EP 1.5 MHz / 10 kHz | -6.0 | -5.0 | -4.0 | dB   |
| PB NL frequency characteristics 11<br>(-20 dB) | $\Delta f_{15-18(11)}$ |  Sine wave $V_{IN} = 30\text{ mV[p-p]}$<br>EP 500 kHz / 10 kHz | -3.5 | -2.5 | -1.5 | dB   |
| PB NL frequency characteristics 12<br>(-20 dB) | $\Delta f_{15-18(12)}$ |  Sine wave $V_{IN} = 30\text{ mV[p-p]}$<br>EP 1.5 MHz / 10 kHz | -6.7 | -5.7 | -4.7 | dB   |
| NC frequency characteristics 1<br>(0 dB)       | $\Delta f_{19-5(1)}$   |  Sine wave $V_{IN} = 1\text{ V[p-p]}$<br>1 MHz / 10 kHz        | -1.4 | -0.4 | 0.6  | dB   |
| NC frequency characteristics 2<br>(0 dB)       | $\Delta f_{19-5(2)}$   |  Sine wave $V_{IN} = 1\text{ V[p-p]}$<br>2 MHz / 1 MHz         | -1.1 | -0.1 | 0.9  | dB   |
| NC frequency characteristics 3<br>(-10 dB)     | $\Delta f_{19-5(3)}$   |  Sine wave $V_{IN} = 316\text{ mV[p-p]}$<br>1 MHz / 10 kHz     | -2.0 | -1.0 | 0    | dB   |
| NC frequency characteristics 4<br>(-10 dB)     | $\Delta f_{19-5(4)}$   |  Sine wave $V_{IN} = 316\text{ mV[p-p]}$<br>2 MHz / 1 MHz      | -0.8 | 0.2  | 1.2  | dB   |
| NC frequency characteristics 5<br>(-20 dB)     | $\Delta f_{19-5(5)}$   |  Sine wave $V_{IN} = 100\text{ mV[p-p]}$<br>1 MHz / 10 kHz     | -3.3 | -2.3 | -1.3 | dB   |
| NC frequency characteristics 6<br>(-20 dB)     | $\Delta f_{19-5(6)}$   |  Sine wave $V_{IN} = 100\text{ mV[p-p]}$<br>2 MHz / 1 MHz      | -0.5 | 0.5  | 1.5  | dB   |
| NC frequency characteristics 7<br>(-30 dB)     | $\Delta f_{19-5(7)}$   |  Sine wave $V_{IN} = 31.6\text{ mV[p-p]}$<br>1 MHz / 10 kHz    | -10  | -6.3 | -4.3 | dB   |
| NC frequency characteristics 8<br>(-30 dB)     | $\Delta f_{19-5(8)}$   |  Sine wave $V_{IN} = 31.6\text{ mV[p-p]}$<br>2 MHz / 1 MHz     | 0.2  | 2.2  | 6.2  | dB   |
| NC off mode                                    | $\Delta G_{19-5}$      |  Sine wave $V_{IN} = 31.6\text{ mV[p-p]}$<br>1 MHz             | 4.3  | 6.3  | 10.0 | dB   |

■ Electrical Characteristics at  $T_a = 25^\circ\text{C}$  (continued)

| Parameter                                           | Symbol                | Conditions                                                                                                                                                                                                   | Min   | Typ  | Max  | Unit               |
|-----------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------|------|--------------------|
| LNC attenuation level 1                             | $\Delta G_{15-18(1)}$ | (19 input off)  Sine wave<br>(19 input on) 10 kHz                                                                           | -12.3 | -9.3 | -5   | dB                 |
| LNC attenuation level 2                             | $\Delta G_{15-18(2)}$ | (19 input off)  Sine wave<br>(19 input on) 3 kHz                                                                            | -8.1  | -6.1 | -3.1 | dB                 |
| LNC off mode                                        | $\Delta V_{15-18}$    |  Sine wave $V_9 = 1.35\text{ V}$<br>2.15 V 10 kHz                                                                           | -1    | 0    | 1    | dB                 |
| LNC LIM output amplitude                            | $V_{\text{LNC}}$      |  Sine wave $V_{\text{IN}} = 300\text{ mV[p-p]}$<br>100 kHz                                                                  | 34    | 44   | 58   | mV[p-p]            |
| LNC LIM gain                                        | $G_{\text{LNC}}$      |  Sine wave $V_{\text{IN}} = 9.5\text{ mV[p-p]}$<br>100 kHz                                                                  | 3.7   | 6.7  | 8.7  | mV[p-p]            |
| Pic. cont. frequency characteristics 1 (forced)     | $\Delta f_{19-5(1)}$  |  Sine wave $V_{\text{IN}} = 500\text{ mV[p-p]}$<br>3 MHz / 100 kHz                                                          | 4.9   | 5.9  | 7.4  | dB                 |
| Pic. cont. frequency characteristics 2 (attenuated) | $\Delta f_{19-5(2)}$  |  Sine wave $V_{\text{IN}} = 1\text{ V[p-p]}$<br>3 MHz / 100 kHz                                                             | -14   | -11  | -8   | dB                 |
| FM oscillation output amplitude                     | $V_{28}$              | $I_{\text{IN}} = 280\text{ }\mu\text{A}$                                                                                                                                                                     | 0.85  | 1.0  | 1.3  | V[p-p]             |
| FM oscillation secondary harmonic                   | $2f_{28}$             | $I_{\text{IN}} = 280\text{ }\mu\text{A}$                                                                                                                                                                     | —     | —    | -33  | dB                 |
| FM oscillation frequency                            | $f_{28}$              | $I_{\text{IN}} = 280\text{ }\mu\text{A}$                                                                                                                                                                     | 3.1   | 3.5  | 3.9  | MHz                |
| FM oscillation control sensitivity                  | $\beta_{28}$          | $\frac{f(500\text{ }\mu\text{A}) - f(160\text{ }\mu\text{A})}{500\text{ }\mu\text{A} - 160\text{ }\mu\text{A}}$                                                                                              | 11.5  | 13   | 15.0 | MHz/ $\mu\text{A}$ |
| FM carrier interleave 1                             | $\Delta V_{20-23}$    |  $V_{\text{IN}} = 5\text{ V[p-p]}$                                                                                         | 1.35  | 2.35 | 3.35 | mV[p-p]            |
| DEM demodulation sensitivity 1                      | $S_{3(1)}$            |  Sine wave $V_5 = 2.5\text{ V}$<br>$V_{\text{IN}} = 350\text{ mV[p-p]}$<br>$f_{\text{IN}} = 3\text{ MHz to }5\text{ MHz}$ | 40    | 69   | 100  | mV/MHz             |
| DEM demodulation sensitivity 2                      | $S_{3(2)}$            |  Sine wave $V_5 = 3.5\text{ V}$<br>$V_{\text{IN}} = 350\text{ mV[p-p]}$<br>$f_{\text{IN}} = 3\text{ MHz to }5\text{ MHz}$ | 75    | 105  | 135  | mV/MHz             |
| DEM demodulation limit                              | $Lf_{26-3}$           |  Sine wave $V_{\text{IN}} = 350\text{ mV[p-p]}$                                                                           | 7.5   | —    | —    | MHz                |
| DEM carrier leak                                    | $CL_{26-3}$           |  Sine wave $V_{\text{IN}} = 350\text{ mV[p-p]}$<br>$f_{\text{IN}} = 2\text{ MHz} \rightarrow$<br>2 MHz / 4 MHz            | —     | —    | -25  | dB                 |
| Sub LPF frequency characteristics                   | $\Delta f_{26-3}$     |  Sine wave $f_{\text{IN}}$<br>$V_{\text{IN}} = 350\text{ mV[p-p]}$                                                        | -8    | -6.2 | -4.5 | dB                 |
| DOC det. on                                         | $S_{26}$              |  Sine wave $f_{\text{IN}} = 4\text{ MHz}$                                                                                 | -20   | -16  | -11  | dB                 |
| DOC det. off (hysteresis)                           | $\Delta S_{26}$       |  Sine wave $f_{\text{IN}} = 4\text{ MHz}$                                                                                 | 0.2   | 1.5  | 6    | dB                 |
| DOC offset                                          | $\Delta V_{18}$       |  $V_{\text{IN}} = 350\text{ mV[p-p]}$ or<br>0 mV[p-p]<br>$f_{\text{IN}} = 4\text{ MHz}$                                   | -15   | 0    | 15   | mV[p-p]            |

■ Electrical Characteristics at  $T_a = 25^\circ\text{C}$  (continued)

| Parameter                 | Symbol             | Conditions                                                                                                                                                          | Min  | Typ   | Max  | Unit          |
|---------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|------|---------------|
| DOC pulse width           | $t_{w18}$          |  $V_{IN} = 350 \text{ mV[p-p]}$ or $0 \text{ mV[p-p]}$<br>$f_{IN} = 4 \text{ MHz}$ | 35.5 | 37.45 | 39.5 | $\mu\text{s}$ |
| DOC SW crosstalk          | $CT_{16-17}$       |  Sine wave DOC off<br>$V_{IN} = 300 \text{ mV[p-p]}$<br>$f_{IN} = 100 \text{ kHz}$ | —    | —     | -35  | dB            |
| Quasi V mute crosstalk    | $CT_{19-5}$        |  Sine wave<br>$V_{IN} = 1 \text{ V[p-p]}$<br>$f_{IN} = 2 \text{ MHz}$              | —    | —     | -35  | dB            |
| SW1 crosstalk 1           | $CT_{19-5}$        |  Sine wave<br>$V_{IN} = 1 \text{ V[p-p]}$<br>$f_{IN} = 2 \text{ MHz}$              | —    | —     | -40  | dB            |
| SW1 crosstalk 2           | $CT_{1-5}$         |  Sine wave<br>$V_{IN} = 250 \text{ mV[p-p]}$<br>$f_{IN} = 2 \text{ MHz}$           | —    | —     | -40  | dB            |
| SW2 crosstalk 1           | $CT_{26-3}$        |  Sine wave PB 2 MHz<br>$V_{IN} = 350 \text{ mV[p-p]}$<br>REC 4 MHz                 | —    | —     | -40  | dB            |
| SW2 crosstalk 2           | $CT_{1-3}$         |  Sine wave<br>$V_{IN} = 250 \text{ mV[p-p]}$<br>$f_{IN} = 2 \text{ MHz}$           | —    | —     | -40  | dB            |
| SW5 crosstalk 1           | $CT_{15-18}$       |  Sine wave<br>$V_{IN} = 250 \text{ mV[p-p]}$<br>$f_{IN} = 2 \text{ MHz}$          | —    | —     | -40  | dB            |
| SW5 crosstalk 2           | $CT_{17-18}$       |  Sine wave<br>$V_{IN} = 300 \text{ mV[p-p]}$<br>$f_{IN} = 2 \text{ MHz}$         | —    | —     | -40  | dB            |
| White mute crosstalk      | $CT_{1-5}$         |  Sine wave<br>$V_{IN} = 300 \text{ mV[p-p]}$<br>$f_{IN} = 2 \text{ MHz}$         | —    | —     | -40  | mV[p-p]       |
| FM carrier interleave 2   | $\Delta V_{20-18}$ |  Sine wave<br>$V_{IN} = 5 \text{ V[0-p]}$<br>$f_{IN} = 2 \text{ MHz}$            | 4    | 7.5   | 1    | mV            |
| Pi cont. off mode         | $\Delta G_{19-5}$  |  Sine wave<br>$V_{IN} = 1 \text{ V[p-p]}$<br>$f_{IN} = 3 \text{ MHz}$            | 4.4  | 5.9   | 7.4  | dB            |
| SS pulse output amplitude | $V_{29}$           |  White 100%<br>$V_{IN} = 1 \text{ V[p-p]}$                                       | 4.3  | —     | —    | V[p-p]        |

