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NTE1835
Integrated Circuit
Interface for Character and Pattern

Description:

The NTE1835 is an integrated circuit designed for interface of decoder outputs or of external analog input signal in teletext system with the color output.

Features:

- Provides Analog Signal Processing for Character Signal Input
- High Speed Switching:
  Rise and Fall Time: 35ns
  Delay time: 20ns
- Including DC Controller of Brightness, Contrast, R–Adjustment and B–Adjustment for Character Signal Input
- Y Amplifier Linear Area's Bottom: 2.0V

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Supply Voltage, V_{CC} 14.4V
Circuit Voltage
  $V_{1–13}$ 0/14.4V
  $V_{3,6,7,8,9–13}$ . . . . . $0/V_{1–13}–1V$
  $V_{11–13}$ . . . . . $2/(V_1–13)–1$
  $V_{15,18,21–13}$ . . . . . $0/(V_{1–13})V$
Circuit Current
  $I_{10, 14, 17, 20}$ . . . . . –30/10mA
  $I_{16,19,22}$ . . . . . –1/3mA
Power Dissipation (T_A = +70°C), P_D 1040mW
Ambient Temperature Range, T_{opr} . . . . . –20° to +70°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Electrical Characteristics: (T_A = +25°C, V_{CC} = 12V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Circuit Current	I_{tot}	V_{CC} = 12V	32	47	62	mA
Circuit Voltage	$V_{10,14,17,20–13}$	V_{CC} = 12V	7.7	8.0	8.3	V
	$V_{16,19,22–13}$		3.0	3.5	4.0	V

Electrical Characteristics (Cont'd): (T_A = +25°C, V_{CC} = 12V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
TV Signal Voltage Amp.	A_{V1}	f = 500kHz, Sine Wave signal $1V_{p-p}$	0.95	0.98	1.00	times
Relative Voltage Amp AV_1	ΔA_{V1}	f = 500kHz, Sine Wave signal $1V_{p-p}$	0.95	1.00	1.05	times
TV Signal Frequency Characteristics	f_V	Sine wave signal $1V_{p-p}$, Frequency in which AV_1 becomes –3dB	20	–	–	MHz
Character Signal Voltage Amp	A_{V2}	Character Input $1V_{p-p}$, Contrast max.	3.0	3.4	3.8	times
AV_2 Relative Voltage Amp.	ΔA_{V2}	Character Input $1V_{p-p}$, Relative output voltage	0.85	1.00	1.15	times
Character Signal Contrast Ratio	Δe_o	Contrast max./min.	3.0	3.5	4.0	times
Character Signal Rise/Fall Time	$t_{r(TX)}$, $t_{f(TX)}$	$V_3 = V_9 = 6V$	–	35	60	ns
Character Signal Rise Delay Time	$t_{d-r}(TX)$	$V_3 = V_9 = 6V$	–	25	60	ns
Character Signal Fall Delay Time	$t_{d-f}(TX)$	$V_3 = V_9 = 6V$	–	30	60	ns
Character Signal tdr, tdf 3–channel Mutual Difference	$\Delta t_d(TX)$	$V_3 = V_9 = 6V$	–	–	20	ns
TX–TV Changeover Rise Delay Time	$t_{d-r}(TX/TV)$	$V_3 = V_9 = 6V$	–	60	80	ns
TX–TV Changeover Fall Delay Time	$t_{d-f}(TX/TV)$	$V_3 = V_9 = 6V$	–	50	70	ns
TX–TV Changeover tdr, tdf Mutal Difference	$\Delta t_{d(TX/TV)}$	$V_3 = V_9 = 6V$	–	–	20	ns
TX–TV Discrimination Level	$V_{t(TX/TV)}$		0.50	0.65	0.70	V
Crosstalk between TV Signal Channels	CT_{TV}		40	45	–	dB
Crosstalk between Character Signal Channels	CT_{TX}		40	45	–	dB
TV–to–Character Changeover Crosstalk	$CT_{TX/TV}$		40	45	–	dB
Pedestal Deflection of Character Signal Contrast Change	ΔE_{TP-C}	Brightness typ., Contrast Min to Max	–	0	±150	mV
TV Signal Input DC Level Standard	TV_1	TV input signal level (R–Y) TV, (G–Y) TV, (B–Y) TV, YTV	2.0	–	10.5	V
TX–TV Signal Input Level Standard	TX/TV_1		0	–	6.0	V

Pin Connection Diagram