

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: ($T_A = +25^\circ\text{C}$ 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/ $V_{1-13}-1\text{V}$
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 ($T_A = +70^\circ\text{C}$), P_D	1040mW
Ambient Temperature Range, T_{opr}	-20° to $+70^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{CC} = 12\text{V}$ unless otherwise specified)

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

Electrical Characteristics (Cont'd): ($T_A = +25^{\circ}\text{C}$, $V_{CC} = 12\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
TV Signal Voltage Amp.	A_{V1}	$f = 500\text{kHz}$, Sine Wave signal $1V_{p-p}$	0.95	0.98	1.00	times
Relative Voltage Amp AV_1	ΔA_{V1}	$f = 500\text{kHz}$, 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_0	Contrast max./min.	3.0	3.5	4.0	times
Character Signal Rise/Fall Time	$t_{r(TX)}$, $t_{f(TX)}$	$V_3 = V_9 = 6\text{V}$	—	35	60	ns
Character Signal Rise Delay Time	$t_{d-r(TX)}$	$V_3 = V_9 = 6\text{V}$	—	25	60	ns
Character Signal Fall Delay Time	$t_{d-f(TX)}$	$V_3 = V_9 = 6\text{V}$	—	30	60	ns
Character Signal tdr, tdf 3-channel Mutual Difference	$\Delta t_d(TX)$	$V_3 = V_9 = 6\text{V}$	—	—	20	ns
TX–TV Changeover Rise Delay Time	$t_{d-r(TX/TV)}$	$V_3 = V_9 = 6\text{V}$	—	60	80	ns
TX–TV Changeover Fall Delay Time	$t_{d-f(TX/TV)}$	$V_3 = V_9 = 6\text{V}$	—	50	70	ns
TX–TV Changeover tdr, tdf Mutual Difference	$\Delta t_d(TX/TV)$	$V_3 = V_9 = 6\text{V}$	—	—	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

V _{CC}	1	22	R _{TX} Input
Pedestal Clamp Filter	2	21	(R – Y) _{TV} Input
Contrast Control	3	20	R Output
Blanking Pulse Input	4	19	G _{TX} Input
Shadow Input	5	18	(G – Y) _{TV} Input
Clamp Pulse Input	6	17	G Output
R _{TX} Adjust	7	16	B _{TX} Input
R _{TX} Adjust	8	15	(B – Y) _{TV} Input
Brightness Control	9	14	B Output
Y Output	10	13	GND
Y _{TV} Input	11	12	TX/TV Change Input

