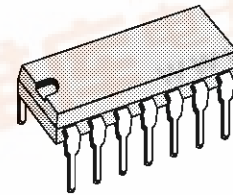




**TDA4433**

## TV SIGNAL IDENTIFICATION CIRCUIT AND AFC INTERFACE

- IDENTIFICATION OF TRUE TV STATIONS ONLY
- LOW IMPEDANCE OUTPUT OF THE IDENTIFICATION SIGNAL
- DIGITAL CONTROL SIGNAL FOR AUTOMATIC SEARCH AND AFC OPERATION
- THERMAL COMPENSATION OF THE VOLTAGE REGULATOR



**DIP14**  
(Plastic Package)

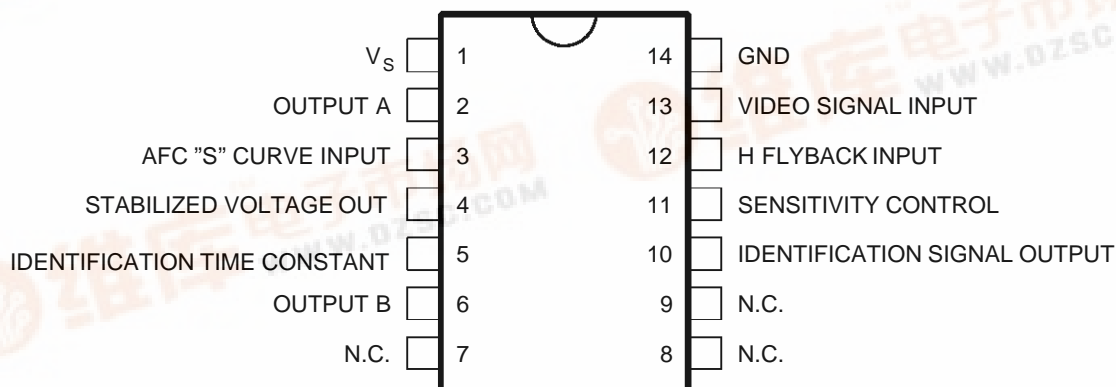
**ORDER CODE : TDA4433**

### DESCRIPTION

The TDA4433 is a monolithic integrated circuit in a 14 lead dual-in-line plastic package. It integrates the following functions :

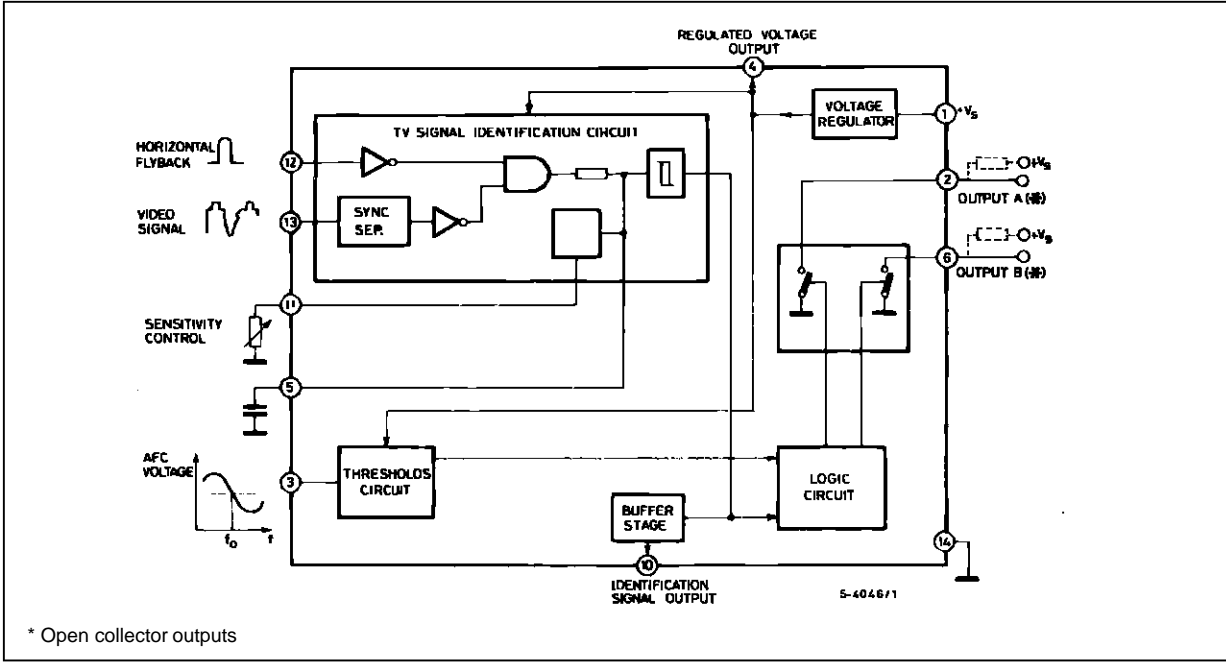
- TV signal identifier - Sync. separator - Threshold detector - Digital Interface - Voltage regulator.

### PIN CONNECTIONS



TDA4433

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_s$	Supply Voltage (pin 1)	16	V
$V_3$	Voltage at Pin 3	16	V
$V_{13}$	Voltage at Pin 13	-5, +6	V
$I_6 ; I_2$	Pin 6 and Pin 2 Current	1	mA
$I_{10}$	Pin 10 Current	2	mA
$I_{11}$	Pin 11 Current	2	mA
$I_{12}$	Pin 12 Current	$\pm 2$	mA
$P_{tot}$	Total Power Dissipation at $T_{amb} \leq 70\text{ }^{\circ}\text{C}$	800	mW
$T_{stg}, T_j$	Storage and Junction Temperature	- 40, +150	$^{\circ}\text{C}$

THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient Max.	100	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS

(refer to the test circuit ;  $V_s = 12\text{ V}$ ,  $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

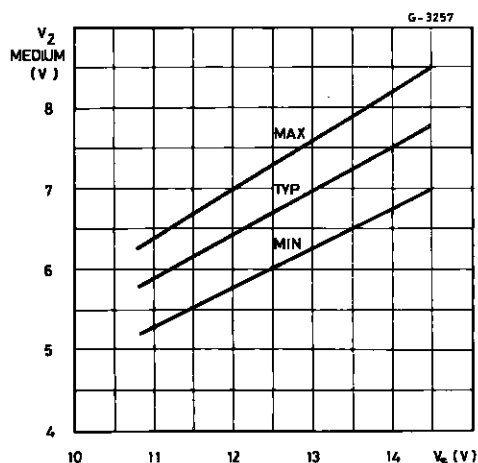
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_s$	Supply Voltage Range (pin 1)		10.8		14.5	V
$I_s$	Supply Current (pin 1)	$V_s = 14.5\text{ V}$			30	mA
$V_2$	Output Voltage	$f_{tuning} < f_0$ $I_2 = 1\text{ mA}$	$V_s - 0.5$			V
		$f_{tuning} = f_0$			0.8	V
		$f_{tuning} > f_0$			0.8	V
$V_6$	Output Voltage	$f_{tuning} < f_0$ $I_6 = 1\text{ mA}$			0.8	V
		$f_{tuning} = f_0$ $I_6 = 1\text{ mA}$			0.8	V
		$f_{tuning} > f_0$	$V_s - 0.5$			V

## ELECTRICAL CHARACTERISTICS (continued)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_3$	Input Voltage Range		4		8	V
$V_{3U}$	Upper Threshold Voltage	See Figure 2	$V_4 - 25$	$V_4$	$V_4 + 25$	mV
$V_{3L}$	Lower Threshold Voltage	See Figure 2	$V_4 - 425$	$V_4 - 400$	$V_4 - 375$	mV
$R_3$	Input Resistance	$V_3 = V_4$	1.4			M $\Omega$
$V_4$	Regulated Voltage	$I_4 = 1$ mA		6.6		V
$I_4$	Output Current				1	mA
$R_4$	Output Differential Resistance			60		$\Omega$
$\frac{\Delta V_4}{\Delta T_S}$	Regulated Voltage Thermal Drift				$\pm 2$	mV/ $^{\circ}$ C
$V_{10}$	Identification Output Voltage	No Identification, $I_{10} = 1$ mA	$V_S - 1.3$			V
		Identification			20	mV
$R_{10}$	Output Resistance			100		$\Omega$
$V_{12}$	Switch off Threshold Voltage				1	V
$I_{12}$	Input Flyback Current		0.5		1.5	mA
$R_{12}$	Input Resistance	$V_{12} = 3$ V		10		k $\Omega$
$t_{fly}$	Flyback Pulse Duration		10		17	$\mu$ sec.
$t$	Time Delay between Leading Edges of Flyback Pulse and Sync. Pulse		0		3.5	$\mu$ sec.
$V_{13}$	Video Input Signal (peak to peak)		2.5		4.5	V
$V_{13}$	Sync. Pulse Amplitude (above black level)		0.52			V
$R_{13}$	Input Resistance				1.5	k $\Omega$

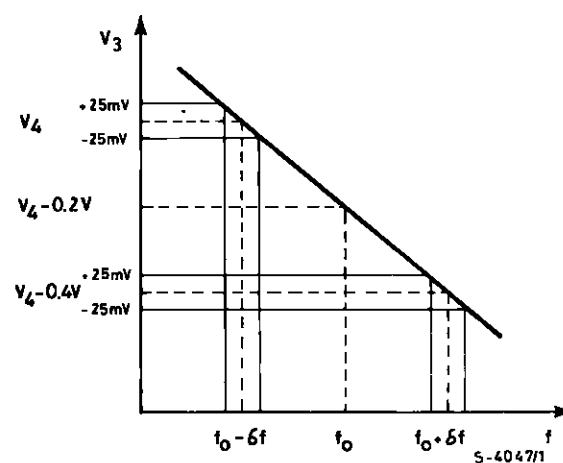
4433-04.TBL

Figure 1 : Medium Output Voltage vs. Supply Voltage



4433-03.EPS

Figure 2 : Digital AFC Threshold Voltage vs. Frequency

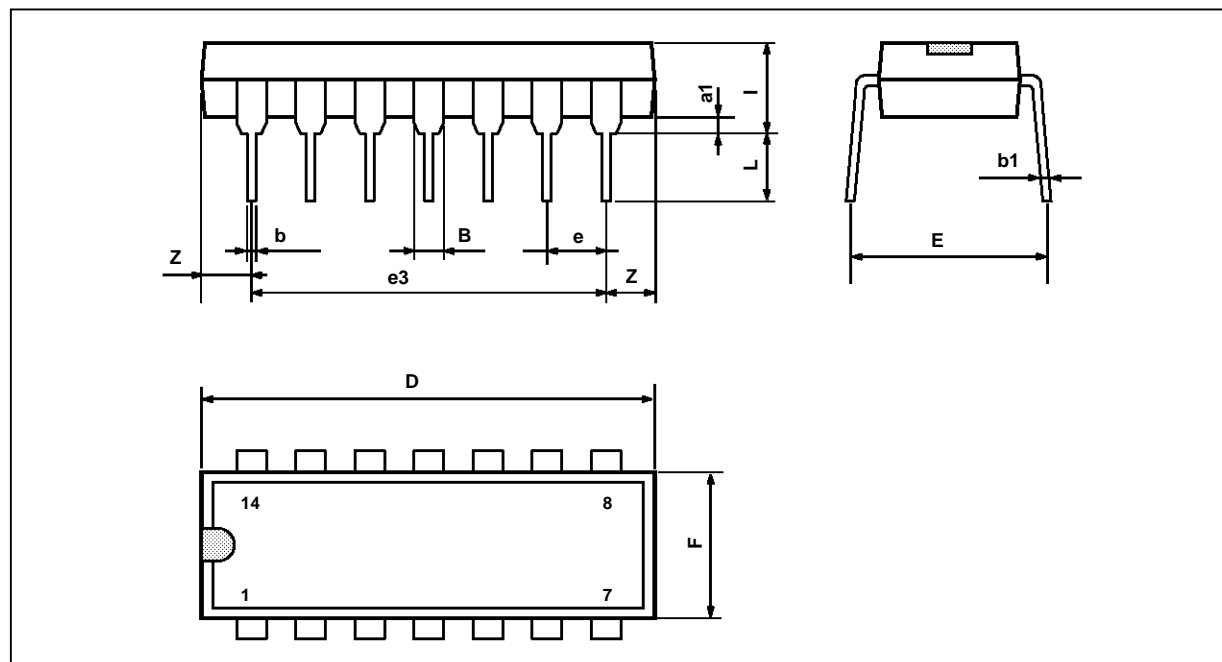


4433-04.EPS

Input Voltage ( $V_3$ )	Output Voltage ( $V_2$ )	Output Voltage ( $V_6$ )
$V_3 > V_4$	High level	Low Level
$V_4 - 0.4 \text{ V} < V_3 < V_4$	Low Level	Low Level
$V_2 < V_4 - 0.4 \text{ V}$	Low Level	High Level

4433-05.TBL



**PACKAGE MECHANICAL DATA****14 PINS - PLASTIC DIP**

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.51			0.020		
B	1.39		1.65	0.055		0.065
b		0.5			0.020	
b1		0.25			0.010	
D			20			0.787
E		8.5			0.335	
e		2.54			0.100	
e3		15.24			0.600	
F			7.1			0.280
i			5.1			0.201
L		3.3			0.130	
Z	1.27		2.54	0.050		0.100

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