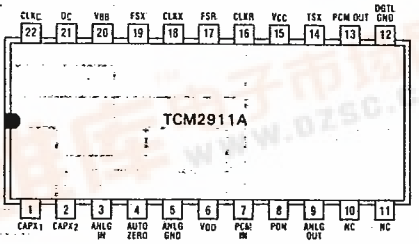
TELECOM CIRCUITS

TCM2911A PCM A-LAW CODEC

T-75-11-05

Features

- **Designed to be interchangeable with Intel 2911A CODEC.**
- **CCITT G.711, G.732 compatible single-chip per Channel CODEC.**
- **A-law coding.**
- **Optional programmable time-slot selection. TCM2911A pin configuration**
- **Low external component count.**
- **High reliability N-channel MOS technology.**



Description

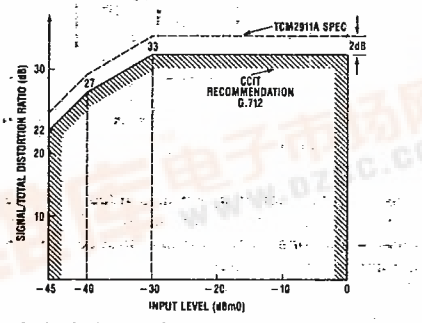
The TCM2911A CODEC is an IC that can convert (encode) human speech into 8 bit PCM digital words to be transmitted over telephone lines. On the receive side, the same IC decodes the digital words into analog human speech. During this process of A/D and D/A conversion, the signal goes through what is known as companding. This companding process results in increased encoding efficiency, so that TI CODECs with companding result in the same SQR equivalent as 12 bit quantization without companding.

The TCM2911A can be used in a number of applications, such as PABX, European 30/32 channel systems (2.048 Mbs), and central office equipment, along with subscriber line concentrators and digital voice band storage systems.

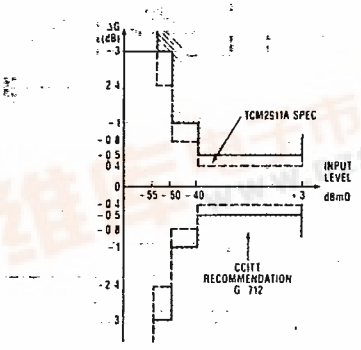
SYMBOL	PARAMETER	MIN.	TYP.[1]	MAX.	UNITS
S D	Signal to Total Distortion Ratio CCITT G 712 Method 2 (Sinusoidal Method) See Signal Total Distortion Diagram Signal level 0dBm0 to 30dBm0 Signal level to 40dBm0 Signal level to 45dBm0	 35 29 24			 dB dB dB
ICN	Idle channel noise with external auto-zero	-	85 76	78	$dBm0_p$ $dBm0_F$
ΔG	Gain Tracking Deviation from gain at 0dBm0 CCITT G 712 Method 2 (Sinusoidal Method) Signal level + 3dBm0 to -40 dBm0 Signal level to 50 dBm0 Signal level to 55 dBm0	 0.4 0 8 2 4		0 4 0 8 2 4	 dB dB dB
V_{OR}	Output Offset Voltage at ANLG OUT All "1s" Code Sent to PCM IN	50		50	mV
V_{IX}	Input Offset Voltage at ANLG IN ANLG IN voltage required to produce all "1s" Code at PCM OUT	.5	1.5	1 5	mV
A_{IR}	RMS Input Dynamic Range, Using D C. and A.C tests	2 17	2.20	2.23	V
A_{OR}	RMS Output Dynamic Range of ANLG OUT at T_A = 23 C and Nominal Supplies	2 13	2 16	2.19	V

Note 1 Typical values are for T_A = 25° C and nominal power supply voltages

Signal to total distortion ratio



End-to-end gain variation Vs. signal level



Operational Specifications:

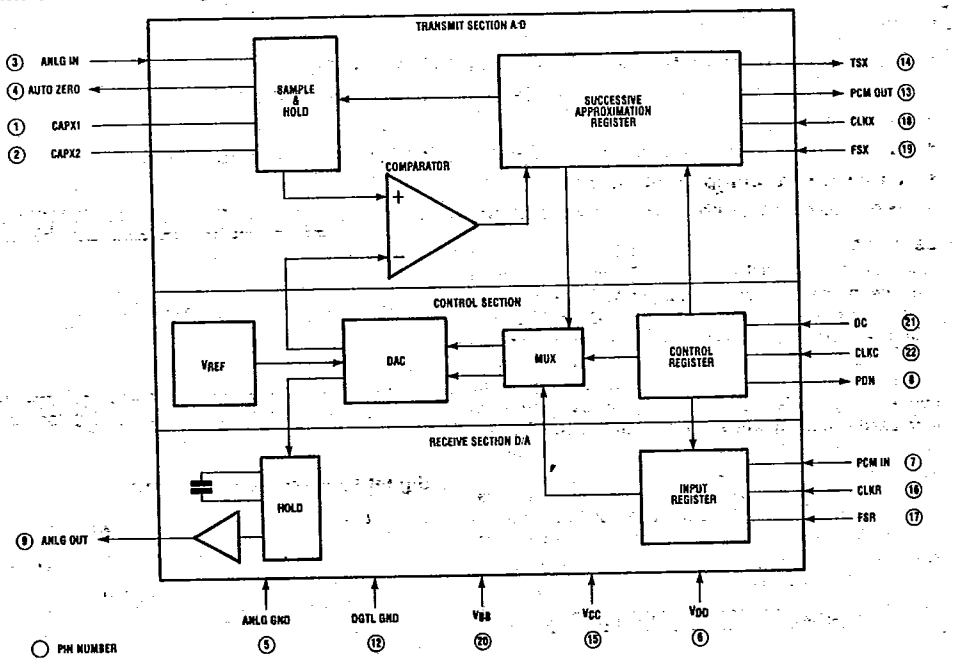
All parameters guaranteed under the following conditions unless otherwise specified: T_A = 0°C to + 70°C, V_{DD} = + 12 V ± 5%, V_{CC} = + 5 V ± 5%, V_{BB} = 5 V ± 5%, and GRDA = GRDD = OV.

TELECOM CIRCUITS

TCM2911A PCM A-LAW CODEC

T-75-11-05

TCM2911A block diagram



The CODEC block diagram is divided into three sections: Control, transmit and receive. The transmit and receive sections, while virtually independent, share a common control section.

Typical application diagram: analog interface with external auto zero.