

Pin Description

Pin	Symbol	Function
1, 3	R _{ECO 2} , R _{ECO 1}	Symmetrical outputs of receiving amplifier
2	G _R	A resistor connected from this pin to V _M (ac coupled) sets the receiving amplification at the circuit
4	ST	Input of side tone amplifier
5	CLIM	Time constant of antialiasing in transmit patch
6	CK	Input of receiving path
7	MICO	Output of microphone preamplifier
8	DTMF	Input for DTMF signals (ac coupled). In Mute condition a small portion of the signal at this pin is monitored to the receiver output.
9	G _S	A resistor from this pin to V _M sets the amplification of microphone and DTMF signals.
10	MIC ₁	Inverting input of microphone amplifier
11	MIC ₂	Non-inverting input of microphone amplifier
12	LEVSO	Input for setting the switching level of the squelch circuit
13	C _{SQ}	Time constant of the squelch function
14	V _M	Reference node for microphone, earphone and loudspeaker amplifier. Supply for electret microphone set to V _D /2.
15	TIN	Input of intermediate transmit stage
16	MUTE	Active high input to switch the circuit into DTMF condition.
17	CLISA	Time constant of antialiasing of speaker amplifier.
18	SWAMP	A resistor connected from this pin to ground converts the excess line current into heat in order to prevent the IC from thermal destruction at high line currents
19	R _{DC}	A small resistor connected from this pin to V _L sets the slope of the characteristic and also affects the line length equalization characteristics and the line current at which the loudspeaker amplifier is switched on.
20	V _D	Unregulated supply voltage for peripheral circuits (dialers, microprocessors, etc.). Output current capability and output voltage increase with line current.
21	S _{AO}	Output of loudspeaker amplifier.
22	GND	Reference point for dc and ac output signals
23	V _L	Line voltage
24	V _C	The internal equivalent inductance of the circuit is proportional to the value of the capacitor at this pin. A resistor connected to ground may be used to reduce the line voltage.
25	PD	Active high input for reducing the current consumption of the circuit. Simultaneously V _L is shorted by an internal switch.
26	G _{SA}	Current input for setting the gain of the speaker amplifier
27	AGA	Automatic gain adjustment with line current. A resistor connected from this pin to V _L sets the starting point. Maximum gain change is 6 dB.
28	IREF	Internal reference current generation

Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Line current	I _L	140	mA
Line voltage	V _L	15	V
Junction temperature	T _j	150	°C
Ambient temperature	T _{amb}	-25 to +75	°C
Storage temperature	T _{stg}	-55 to +150	°C
Total power dissipation T _{amb} = 60°C SO 28	P _{tot}	750	mW

Thermal Resistance

Parameters	Symbol	Value	Unit
Junction ambient SO 28	R _{thJA}	120	K/W

Electrical Characteristics

Test conditions unless otherwise specified: $f = 1 \text{ kHz}$, $0 \text{ dBm} = 775 \text{ Vrms}$, $I_M = 0.3 \text{ mA}$, $I_D = 2 \text{ mA}$, $R_C = 130 \text{ k}\Omega$, $T_{amb} = 25^\circ\text{C}$, $R_{GSA} = 560 \text{ k}\Omega$, $Z_H = Z_M = 68 \text{ nF}$, Pin AGA open

Parameters	Test Conditions / Pin	Symbol	Min	Typ	Max	Unit	Fig.
DC characteristics							
DC voltage drop over circuit	I _L = 2 mA	V _L		1.9		V	1
	I _L = 15 mA	V _L	4.8	5.2	5.6	V	
	I _L = 19 mA	V _L		5.4		V	
	I _L = 30 mA	V _L		6.0		V	
	I _L = 100 mA	V _L		9.5		V	
Transmission amplifier							
Adjustment range of transmit gain	I _L = 15 mA	G _S	40	48	56	dB	2
Transmitting amplification	I _L = 15 mA	G _S	47.75	48.25	48.75	dB	
Frequency response	I _L ≥ 15 A, C _L = 4.7 nF f = 300 to 3400 Hz	ΔG _S			± 0.5	dB	
Gain change with current	Pin AGA open I _L = 15 to 100 mA	ΔG _S			± 0.5	dB	
Gain deviation	T _{amb} = -10 to +60°C I _L = 15 mA	ΔG _S			± 0.5	dB	
CMRR of microphone amplifier		CMRR	60	80		dB	8