

COMPANDER

DESCRIPTION

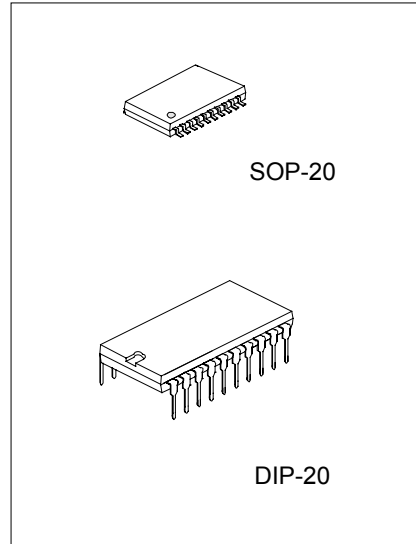
The UTC 8507 is a automatic gain control system that is used for dynamic range compression and expansion.

By companding the signal, this can reduce the noise components.

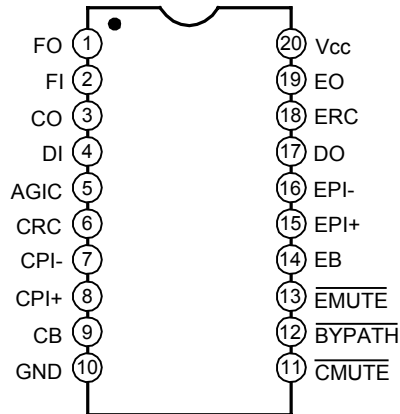
The UTC 8507 includes compressor, expander, pre-amp, filter amp, limiter and mute/bypass logic.

FEATURES

- * Wide Supply Voltage (2.4 ~ 7V)
- * Easy Gain Control
- * Mute/Bypass Logic
- * Data In/Out Pin



PIN CONFIGURATION



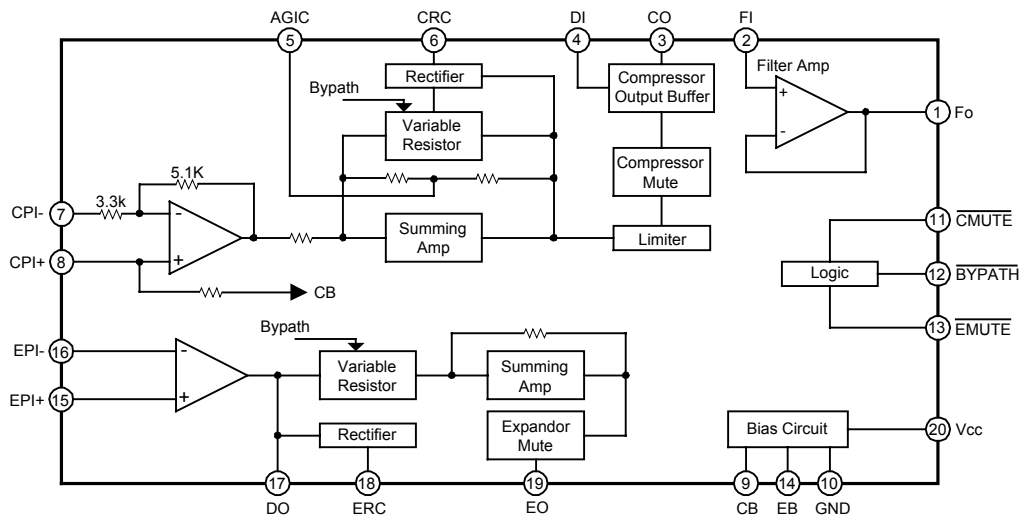
UTC 8507

LINEAR INTEGRATED CIRCUIT

PIN DESCRIPTION

PIN No.	SYMBOL	DESCRIPTION	PIN No.	SYMBOL	DESCRIPTION
1	FO	Filter Amp Output	11	CMUTE	Compressor Mute
2	FI	Filter Amp Input	12	BYPATH	No companding
3	CO	Compressor Output	13	EMUTE	Expander Mute
4	DI	Data Input	14	EB	Expander Reference Bias
5	AGIC	AC Gain Infinity Capacitor	15	EPI+	Expander Non-Inverting Input
6	CRC	Compressor Rectifier Capacitor	16	EPI-	Expander Inverting Input
7	CPI-	Compressor Inverting Input	17	DO	Data Output
8	CPI+	Compressor Non-Inverting Input	18	ERC	Expander Rectifier Capacitor
9	CB	Compressor Reference Bias	19	EO	Expander Output
10	GND	Ground	20	Vcc	Supply Voltage

BLOCK DIAGRAM



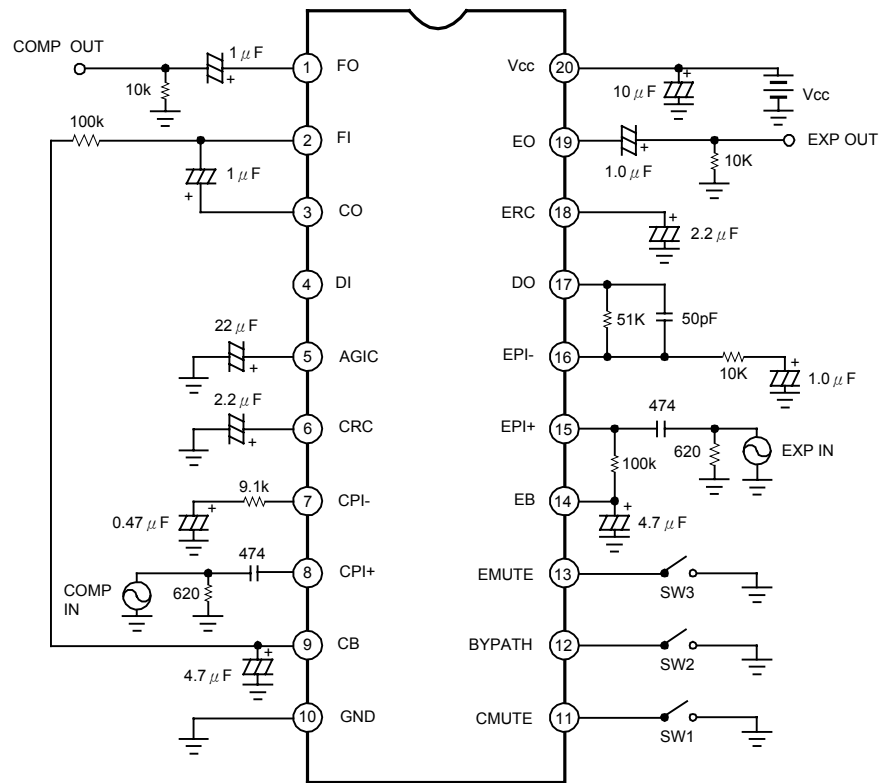
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	Vcc	10	V
Power Dissipation	P _D	1000 410	mW
Operating Temperature	T _{opr}	-20 ~ +70	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

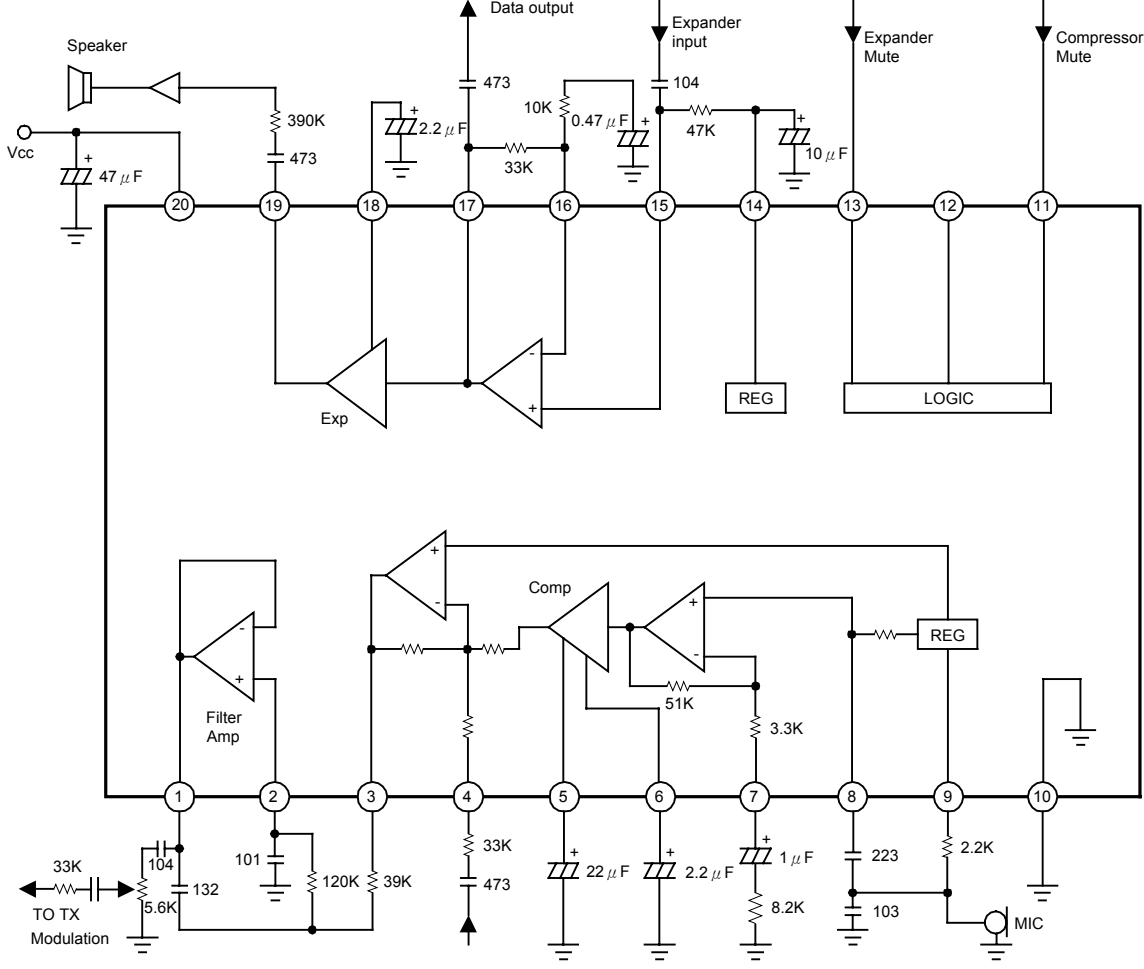
UTC 8507 LINEAR INTEGRATED CIRCUIT

ELECTRICAL CHARACTERISTICS (V _{CC} =3V, f=1kHz, T _a =25°C, unless otherwise noted)						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
DC ELECTRICAL CHARACTERISTICS						
Operating Voltage	V _{CC}			2.4	7.0	V
Operating Current	I _{CC}	No signal		4.0	6.5	mA
COMPRESSOR PART						
Standard Input Voltage (0dB)	V _I (COMP)	V _{out} =300mVrms=0dB	8.0	12.5	17.0	mVrms
Gain Difference	ΔG _{V1} (COMP)	V _{in} =-20dB	-0.5	0	+0.5	dB
	ΔG _{V2} (COMP)	V _{in} =-40dB	-1.0	0	+1.0	
Bypass Gain Difference	ΔG _{VB} (COMP)	V _{in} =0dB, BYPATH=GND	-1.5	0	+1.5	dB
Output Distortion	THD COMP	V _{in} =0dB		0.5	1.0	%
Noise Output Voltage	V _{NO} (COMP)	R _g =620Ω		3.0	5.5	mVrms
Mute Attenuation Ratio	ATT MUTE	V _{in} =0dB, CMUTE=GND	60	80		dB
Limiting Voltage	V _{LIM} (COMP)		1.15	1.35	1.50	Vp-p
EXPANDER PART						
Standard Output Level (0dB)	V _O (EXP)	V _{in} =30mVrms=0dB	110	130	160	mVrms
Gain Difference	ΔG _{V1} (EXP)	V _{in} =-10dB-0.5	-0.5	0	+0.5	dB
	ΔG _{V2} (EXP)	V _{in} =-20dB	-1.0	0	+1.0	
	ΔG _{V3} (EXP)	V _{in} =-30dB	-1.5	0	+2.0	
Bypass Gain Difference	ΔG _{VB} (EXP)	V _{in} =0dB, BYPATH=GND	-2.5	0	+0.5	dB
Output Distortion	THD EXP	V _{in} =0dB		0.5	1.5	%
Noise Output Voltage	V _{NO} (EXP)	R _g =620Ω		10.0	30.0	μ Vrms
Mute Attenuation Ratio	ATT MUTE	V _{in} =0dB, EMUTE=GND	60	80		dB
Limiting Voltage	V _{OEXP} (MAX)	THD=10%	700	800		mVrms

TEST CIRCUIT



APPLICATION CIRCUIT (HAND SET)



UTC 8507 LINEAR INTEGRATED CIRCUIT

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