

# UTC M2136 LINEAR INTEGRATED CIRCUIT

## ULTRA WIDE BAND, HIGH SLEW RATE SINGLE OPERATIONAL AMPLIFIER

### DESCRIPTION

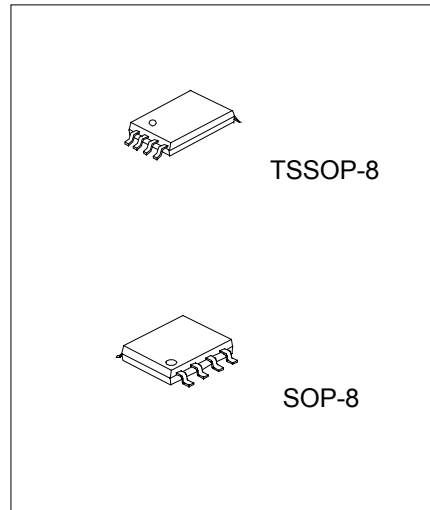
The UTC M2136 is an ultra wide band, high slew rate single operational amplifier operated from low voltage ( $\pm 1.35V$ ).

It can apply to active filter, high speed analog and digital signal processor, line driver. HDTV, industrial measurement equipment and others.

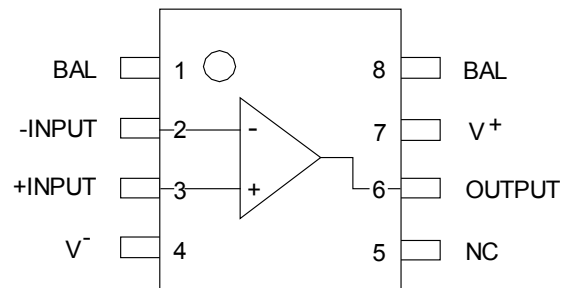
It can also apply to portable communication items because of low operating voltage and low operating current.

### FEATURES

- \*Input Offset Voltage Balance
- \*Operating Voltage:  $\pm 1.35V \sim \pm 6V$
- \*Ultra Wide Band: 200MHz typ.
- \*High Slew Rate:  $45V/\mu s$  typ.
- \*Low Operating Current: 0.63mA typ.

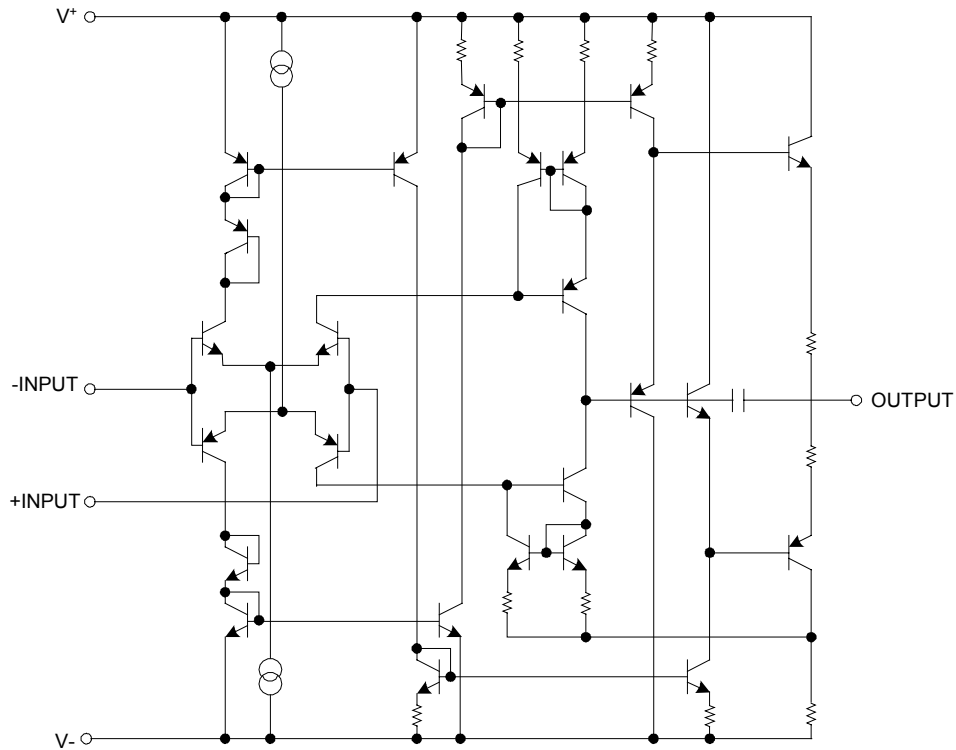


### PIN CONFIGURATION



# UTC M2136 LINEAR INTEGRATED CIRCUIT

## EQUIVALENT CIRCUIT



## ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+V^-$	$\pm 6.75$	V
Differential Input Voltage	$V_{ID}$	$\pm 3$	V
Power Dissipation	$P_D$	250 300	mW
Operating Temperature Range	$T_{opr}$	-40~+85	°C
Storage Temperature Range	$T_{stg}$	-50~+125	°C

**UTC** UNISONIC TECHNOLOGIES CO., LTD. 2

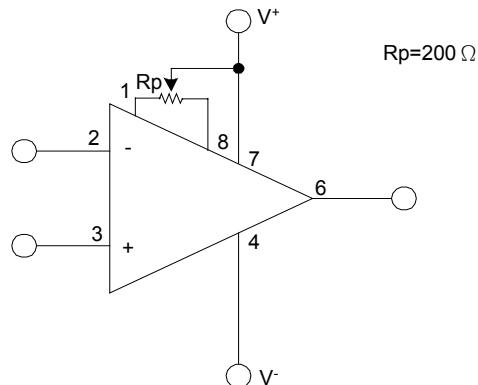
QW-R105-020,A

# UTC M2136 LINEAR INTEGRATED CIRCUIT

## ELECTRICAL CHARACTERISTICS ( $V^+/V^- = \pm 2.5V, T_a = 25^\circ C$ )

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	$V^+V^-$		$\pm 1.35$	$\pm 2.50$	$\pm 6.00$	V
Input Offset Voltage	$V_{io}$	$R_s \leq 0 \Omega$		1.0	5.0	mV
Input Bias Current	$I_B$			0.5	2.0	$\mu A$
Input Offset Current	$I_{io}$			20	200	nA
Large Signal Voltage Gain	$A_v$	$R_L \geq 10k \Omega$	65	75		dB
Input Common Mode Voltage Range	$V_{ICM}$		1.2	1.5		V
			-1.2	-1.5		
Common Mode Rejection Ratio	CMR	$-1V \leq V_{cm} \leq +1V$	45	60		dB
Supply Voltage Rejection Ratio	+SVR		70	100		dB
	-SVR		50	60		
Maximum Output Voltage Swing	$V_{OM}$	$R_L = 1k \Omega$	1.1	1.4		V
			-0.9	-1.2		
Operating Current	$I_{CC}$	$R_L = \infty$ (all Amp.)		0.63	0.82	mA
Slew Rate	SR	$A_v = 0dB$		45		V/ $\mu s$
Gain-Bandwidth Product	GB	60dB $\cdot$ 500kHz	120	200		MHz
Phase Margin	$\Phi_M$	40dB		25		deg
Unity Gain-Bandwidth	$f_T$	40dB		40		MHz

## OFFSET ADJUSTMENT METHOD



note: The electrical characteristics change a little, in case the  $R_p$  is connected.

# UTC M2136    LINEAR INTEGRATED CIRCUIT

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.

**UTC**    UNISONIC TECHNOLOGIES    CO., LTD.    4

QW-R105-020,A