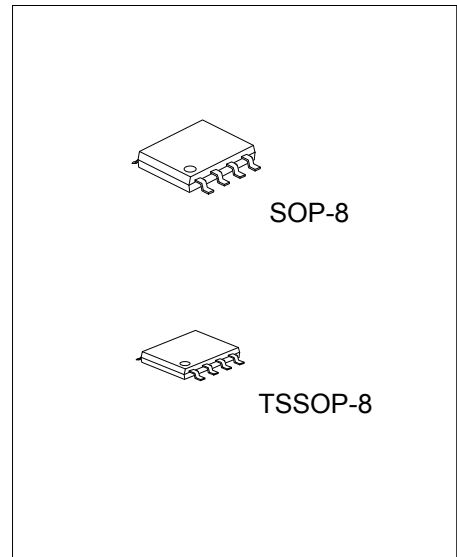




## M2136

## LINEAR INTEGRATED CIRCUIT

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



#### DESCRIPTION

The UTC **M2136** is ultra fast single operational amplifiers with low operating voltage ( $\pm 1.35V$ ) designed for applications requiring wide bandwidth and high slew rate.

Because of low operating voltage and low operating current, it is also apply to portable communication items.

The high speed of this operational amplifier make them useful in high speed analog and digital signal processor, line driver and active filters, HDTV, industrial measurement equipment and others.

#### FEATURES

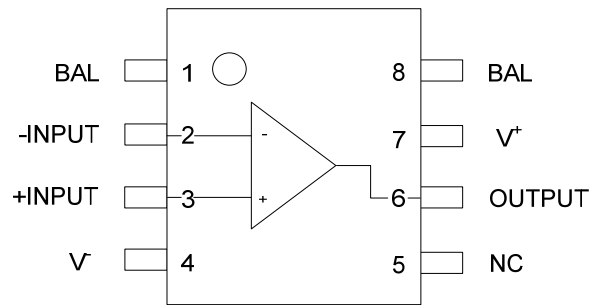
- \*Input Offset Voltage Balance
- \*Operating Voltage:  $\pm 1.35V \sim \pm 6V$
- \*Ultra Wide Band: 200MHz Typ.
- \*High Slew Rate: 45V/ $\mu s$  Typ.
- \*Low Operating Current: 0.63mA Typ.

#### ORDERING INFORMATION

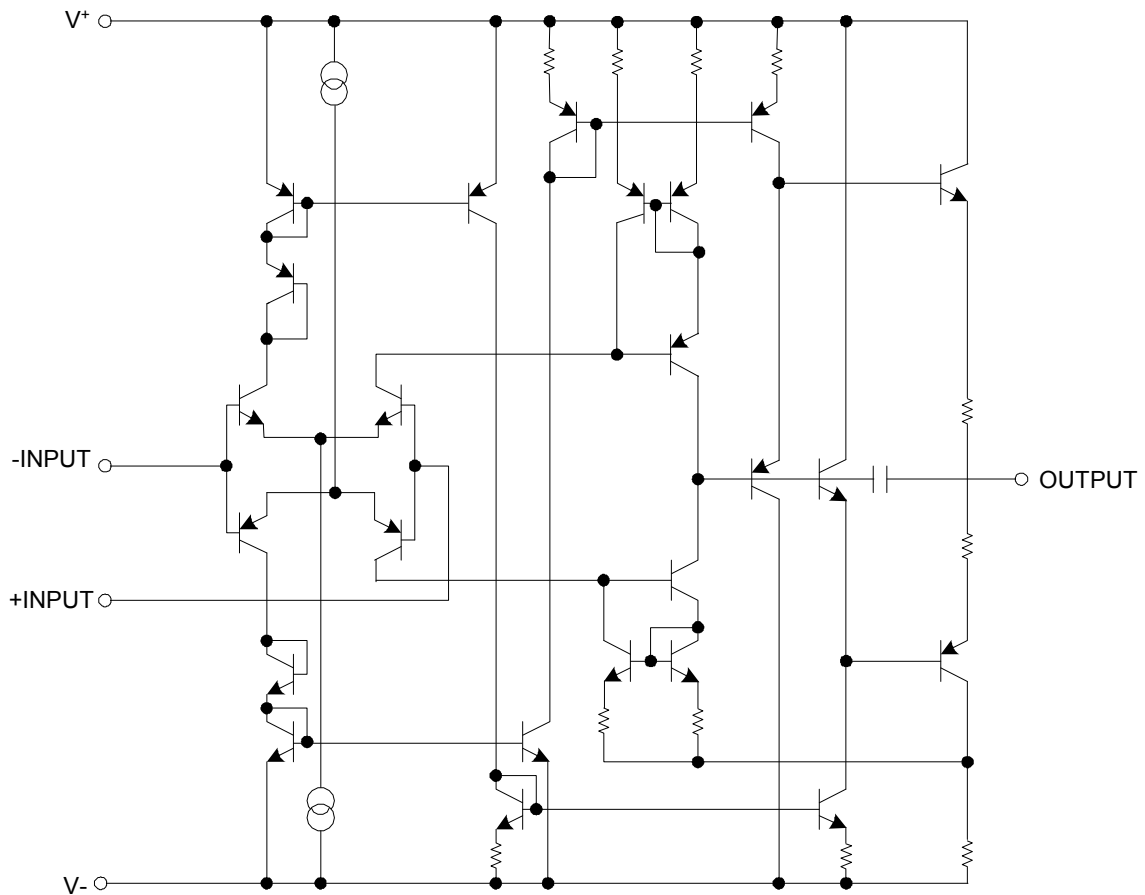
Ordering Number		Package	Packing
Lead Free	Halogen Free		
M2136L-S08-R	M2136G-S08-R	SOP-8	Tape Reel
M2136L-S08-T	M2136G-S08-T	SOP-8	Tube
M2136L-P08-R	M2136G-P08-R	TSSOP-8	Tape Reel

<p>M2136L-S08-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Free Free</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) S08: SOP-8, P08: TSSOP-8</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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## ■ PIN CONFIGURATION



## ■ EQUIVALENT CIRCUIT



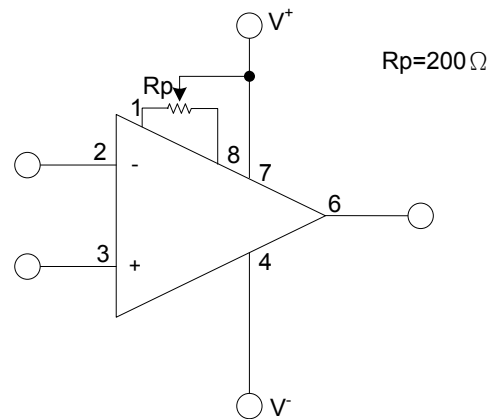
■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+V^-$	±6.75	V
Differential Input Voltage	$V_{ID}$	±3	V
Power Dissipation	TSSOP-8	250	mW
	SOP-8	300	
Ambient Operating Temperature	$T_{OPR}$	-40~+85	°C
Storage Temperature	$T_{STG}$	-50~+125	°C

■ ELECTRICAL CHARACTERISTICS (V<sup>+</sup>/V<sup>-</sup>=±2.5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Operating Voltage	$V^+V^-$		±1.35	±2.50	±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	μA
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	$SR$	$A_v = 0$ dB		45		V/μs
Gain-Bandwidth Product	$GB$	60dB · 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.

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