

Product Specification

XBLW GT3140A

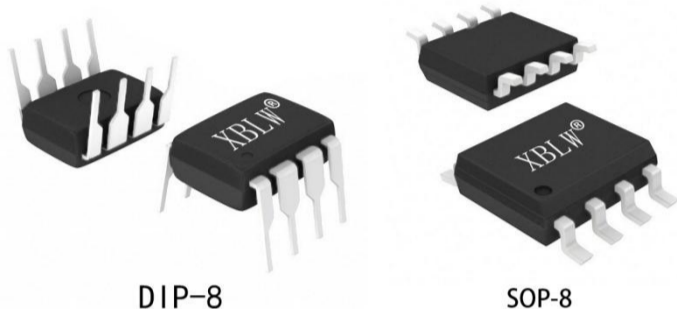
High Input Impedance Operational Amplifier

WEB | www.xinboleic.com



Descriptions

The GT3140A is integrated circuit operational amplifiers that combine the advantages of high voltage PMOS transistors with high voltage bipolar transistors on a single monolithic chip. The GT3140A features gate protected MOSFET (PMOS) transistors in the input circuit to provide very high input impedance, very low input current, and high speed performance. The use of PMOS field effect transistors in the input stage results in a wide common mode input voltage capability and an important attribute for single supply applications. These products are widely used in civil, commercial and industrial applications. Such as accelerometers signal processing, integrators, medical monitors, visible light photometers, single power amplifiers, sampling and holding amplifiers, photocurrent meters, active filters, interface circuits, handheld instruments, alarms, peak detectors, comparators, integrators, multi-frequency oscillators, function generators and all other standard amplifier applications.



Feature

- Applied Advanced BiMOS Technology
- MOSFET Input Stage
 - Very High Input Impedance (Z_{IN}) $1.5T\Omega$ (Typ)
 - Very Low Input Current (I_{IO}) $-10pA$ (Typ) at $\pm 15V$
 - Wide Common Mode Input Voltage Range (VICR) : $-15V \sim 12V$
- Large Swing of Output Voltage (VOPP) : $-14V \sim 12V$
- DIP-8 SOP-8 Package
- Operating Temperature Range: $-40^{\circ}C \sim 85^{\circ}C$

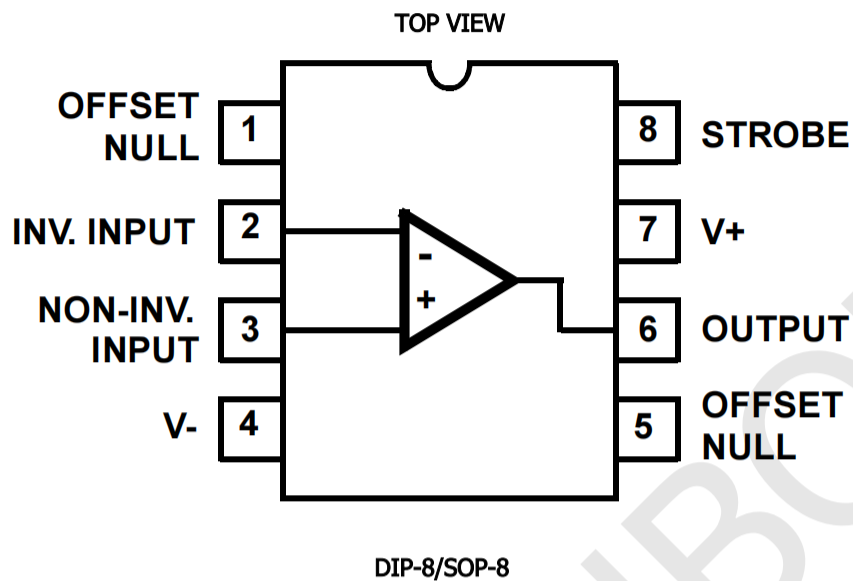
Applications

- Active Filter
- Compensation Amplifier
- Audio Preamplifier
- Electronic Instruments

Ordering Information

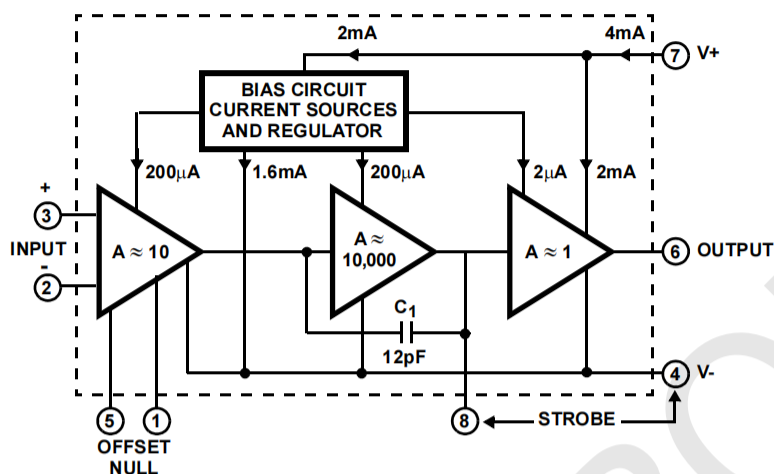
Product Model	Package Type	Marking	Packing	Packing Qty
XBLW GT3140AN	DIP-8	GT3140AN	Tube	2000Pcs/Box
XBLW GT3140ADTR	SOP-8	GT3140A	Tape	2500Pcs/Reel

PINS CONFIGURATION

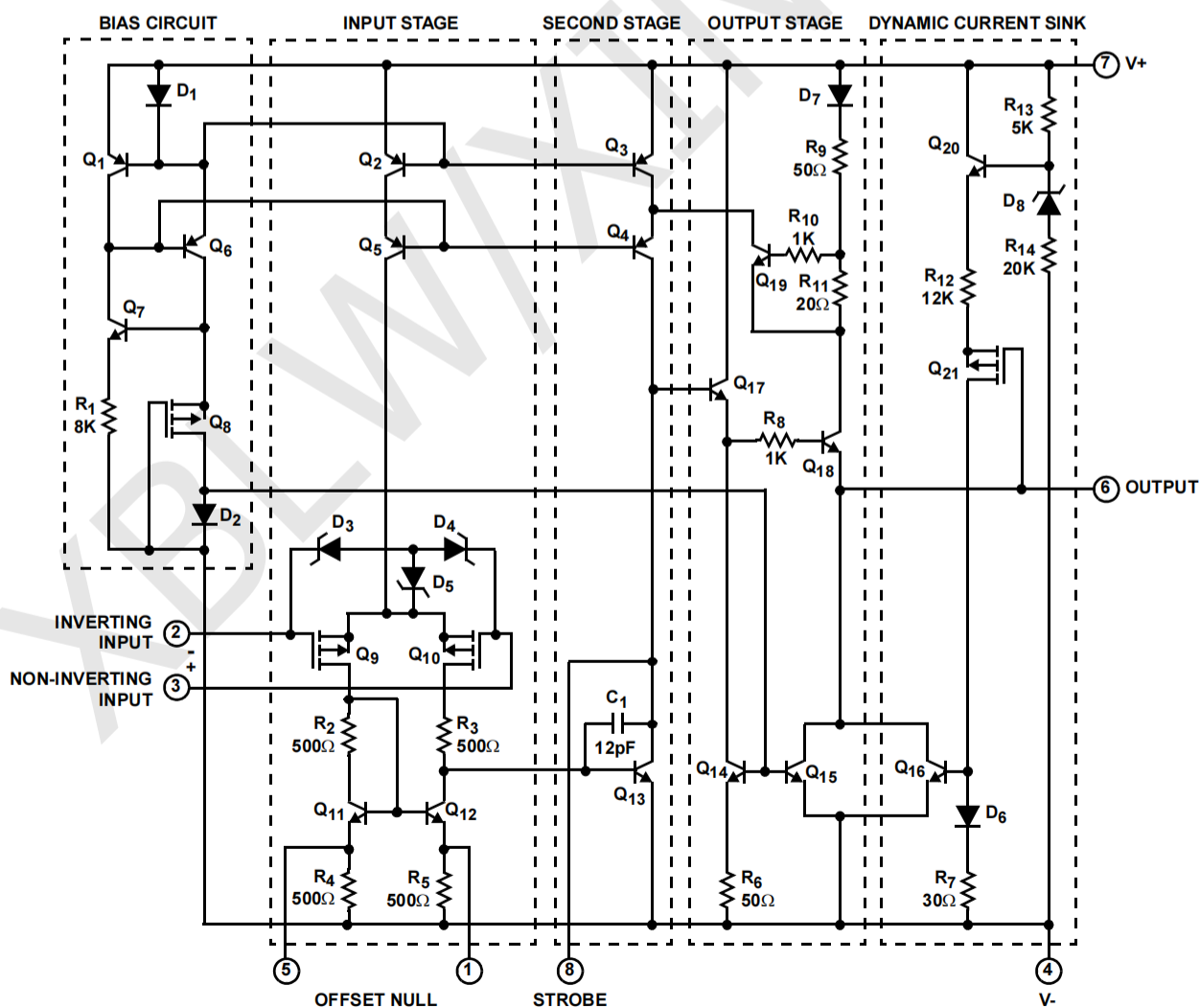


No.	Symbol	Function
1	OA1	Offset Null
2	IN ₋	Inverting Input
3	IN ₊	Noninverting Input
4	V ₋	Negative Power Supply
5	OA2	Offset Null
6	OUT	Output
7	V ₊	Positive Power Supply
8	ST	Strobe

SCHEMATIC DIAGRAM



XBLW GT3140A Block Diagram



XBLW GT3140A Schematic Diagram

ELECTRICAL CHARACTERISTICS

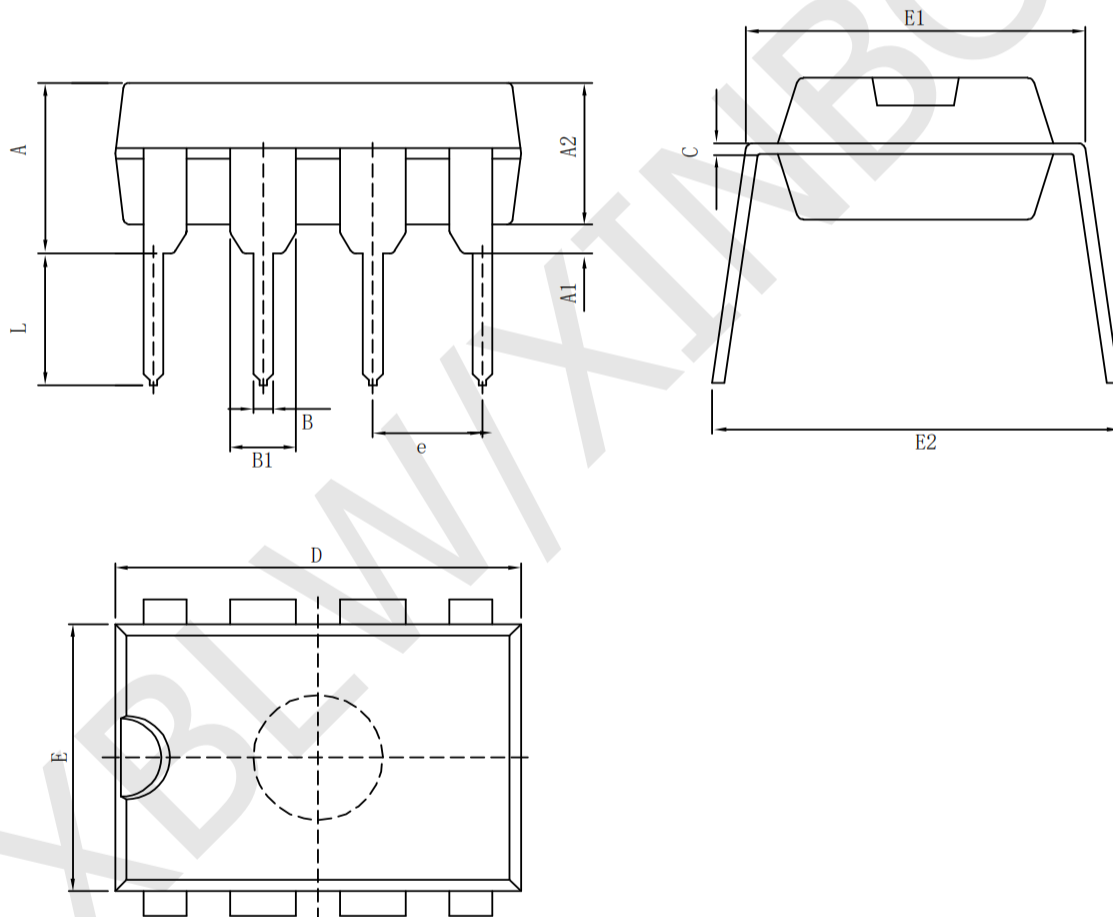
Vcc=6V , Tamb=25°C, unless otherwise specified.

Parameter	Symbol	Test Conditions (Unless otherwise specified, VS =±15V, -40°C≤TA ≤85°C)	Value			Unit
			TA	GT3140A		
				Min.	Max.	
Input Offset Voltage	V _{IO}		25°C		5	mV
				-	6.5	
Input Offset Voltage Temperature Drift	αV _{IO}			-	24	μV/°C
Input Offset Current	I _{IO}		25°C		20	pA
					1000	
Input Bias Current	I _B		25°C		40	pA
				-	1500	
Open Loop Voltage Gain	A _{VO}	V _O = - 14V~12V, R _L =2kΩ	25°C	86	-	dB
				80		dB
Common Mode Rejection Ratio	K _{CMR}	V _{CM} =- 14V~11V	25°C	70		dB
				64		
Power Supply Rejection Ratio	K _{SVR}	V _S =±5V ~±15V	25°C	76	-	dB
				70		
Output Voltage Peak	V _{OPP} ⁺	R _L =2kΩ	25°C	+12		V
				+11.5		
	V _{OPP} ⁻	R _L =2kΩ	25°C	- 14	-	V
				- 13.5		
Gain-Bandwidth Product	G •BW	R _L = 2kΩ	25°C	3.5		MHz
Slew Rate	S _R	R _L = 2kΩ	25°C	6.0		V/μs
Sink Current (Terminal 8)	I _{SINK8}	Terminal 8 to V-	25°C	160	-	μA
Supply Current	I _S	V _S =±15V, R _L = ∞			6	mA

Package Information

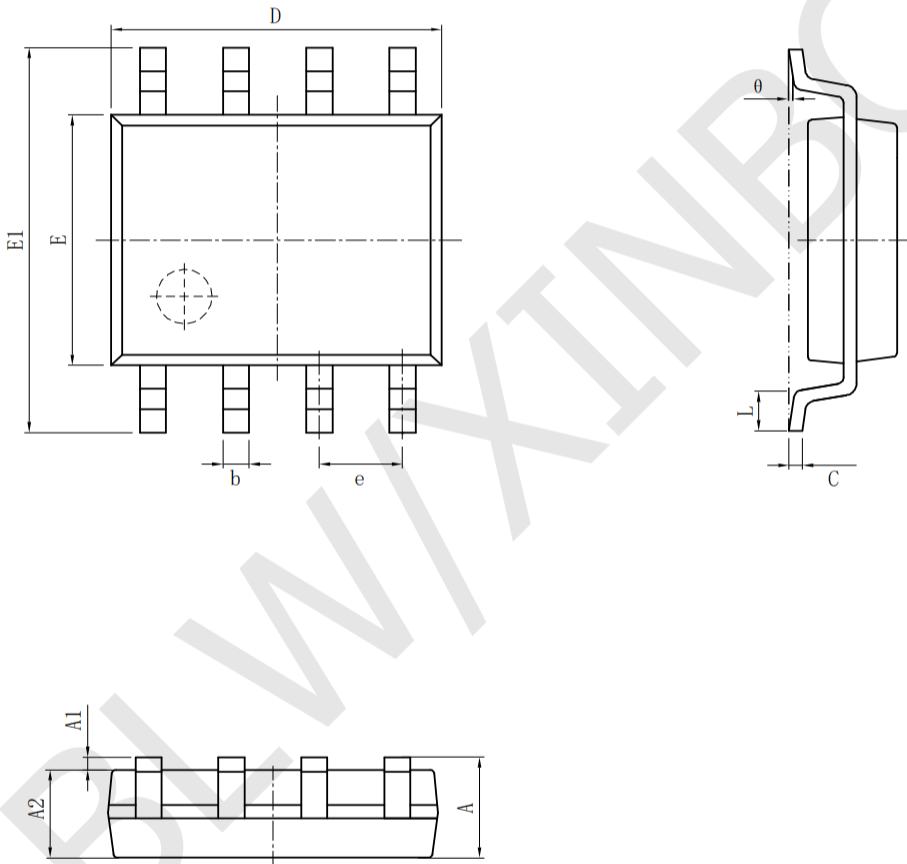
• DIP-8

Size Symbol	Dimensions In Millimeters		Size Symbol	Dimensions In Inches	
	Min (mm)	Max (mm)		Min (in)	Max (in)
A	3.710	4.310	A	0.146	0.170
A1	0.510		A1	0.020	
A2	3.200	3.600	A2	0.126	0.142
B	0.380	0.570	B	0.015	0.022
B1	1.524 (BSC)		B1	0.060 (BSC)	
C	0.204	0.360	C	0.008	0.014
D	9.000	9.400	D	0.354	0.370
E	6.200	6.600	E	0.244	0.260
E1	7.320	7.920	E1	0.288	0.312
e	2.540 (BSC)		e	0.100 (BSC)	
L	3.000	3.600	L	0.118	0.142
E2	8.400	9.000	E2	0.331	0.354



• SOP-8

Size Symbol	Dimensions In Millimeters		Size Symbol	Dimensions In Inches	
	Min (mm)	Max (mm)		Min (in)	Max (in)
A	1.350	1.750	A	0.053	0.069
A1	0.100	0.250	A1	0.004	0.010
A2	1.350	1.550	A2	0.053	0.061
b	0.330	0.510	b	0.013	0.020
c	0.170	0.250	c	0.006	0.010
D	4.700	5.100	D	0.185	0.200
E	3.800	4.000	E	0.150	0.157
E1	5.800	6.200	E1	0.228	0.224
e	1.270 (BSC)		e	0.050 (BSC)	
L	0.400	1.270	L	0.016	0.050
θ	0°	8°	θ	0°	8°



Statement:

- XBLW reserves the right to modify the product manual without prior notice! Before placing an order, customers need to confirm whether the obtained information is the latest version and verify the completeness of the relevant information.
- Any semi-guide product is subject to failure or malfunction under specified conditions. It is the buyer's responsibility to comply with safety standards when using XBLW products for system design and whole machine manufacturing. And take the appropriate safety measures to avoid the potential in the risk of loss of personal injury or loss of property situation!
- XBLW products have not been licensed for life support, military, and aerospace applications, and therefore XBLW is not responsible for any consequences arising from the use of this product in these areas.
- If any or all XBLW products (including technical data, services) described or contained in this document are subject to any applicable local export control laws and regulations, they may not be exported without an export license from the relevant authorities in accordance with such laws.
- The specifications of any and all XBLW products described or contained in this document specify the performance, characteristics, and functionality of said products in their standalone state, but do not guarantee the performance, characteristics, and functionality of said products installed in Customer's products or equipment. In order to verify symptoms and conditions that cannot be evaluated in a standalone device, the Customer should ultimately evaluate and test the device installed in the Customer's product device.
- XBLW documentation is only allowed to be copied without any alteration of the content and with the relevant authorization. XBLW assumes no responsibility or liability for altered documents.
- XBLW is committed to becoming the preferred semiconductor brand for customers, and XBLW will strive to provide customers with better performance and better quality products.