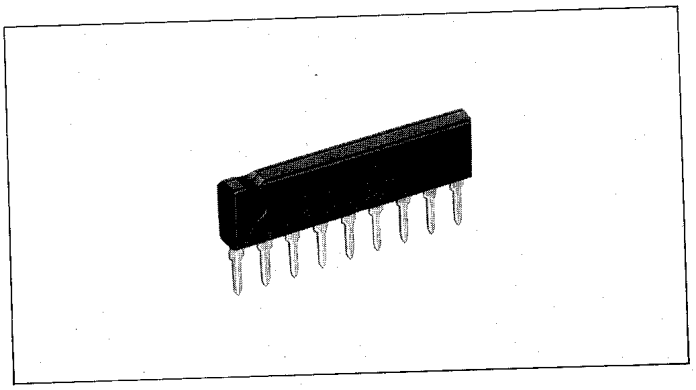
5-Point LED VU Level Meter Driver

BA6137



Dimensions (mm)

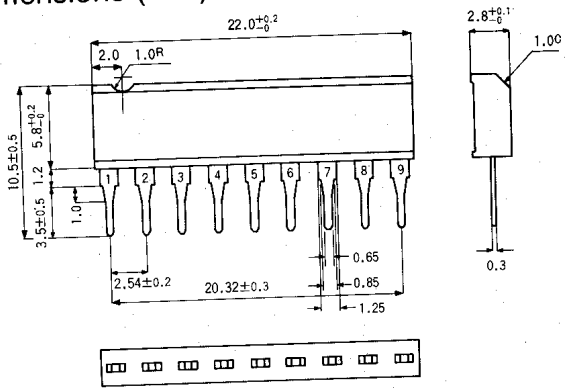


Fig. 1

The BA6137 is a monolithic integrated circuit consisting of an LED level meter driver developed for use in radio cassette tape recorders and other audio products. It is capable of driving 5 LEDs to form a bar-type display of input level in the range −10dB ~ +6dB.
The internal circuitry makes use of rectifying amplifiers, enabling direct input of AC signals and eliminating variations in LED drive current with respect to supply voltage variations, thus allowing direct LED drive.

Block Diagram

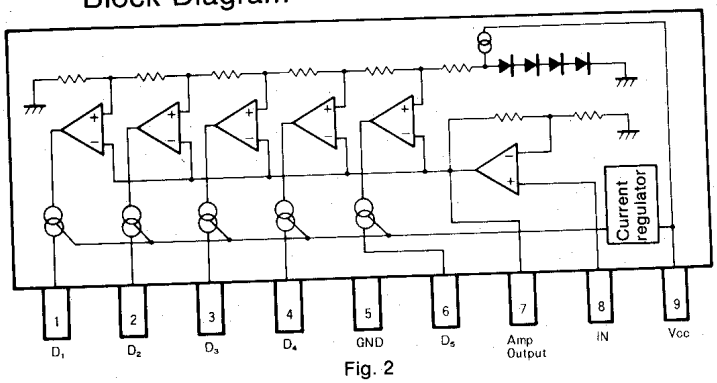


Fig. 2

Features

1. Rectifying amplifiers are used to allow AC or DC signal inputs.
2. LED drive current is regulated to eliminate variations in LED current with respect to supply voltage variations.
3. LED drive current has been optimized for red LEDs to conserve power.
4. The reference voltage is determined internally to eliminate output display variations with variations of supply voltage.
5. Wide supply voltage range (3.5 ~ 16V) enables a wide range of applications.
6. Housed in a 9-pin SIP package and requires few externally connected components, thus conserving PC board space.

Applications

1. VU meters
2. Signal meters
3. Other display devices

Absolute Maximum Ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	18	V
Power dissipation	P_d	1100*	mW
Operating temperature	T_{opr}	−25~+60	°C
Storage temperature	T_{stg}	−55~+125	°C
Junction temperature	T_j	150	°C

* Derating is done at 11mW/°C for operation above T_a = 25°C.

Electrical Characteristics

(Unless otherwise noted, T_a = 25°C, V_{CC} = 6.0V, f = 1kHz)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions	Test circuit
Supply voltage	V_{CC}	3.5	6	16	V		Fig. 3
Supply current	I_{CC}	—	5	8	mA	V_{IN} = 0	Fig. 3
Comparator level 1 (pin 1)	V_{c1}	−11.5	−10	−8.5	dB		Fig. 3
Comparator level 2 (pin 2)	V_{c2}	−6	−5	−4	dB		Fig. 3
Comparator level 3 (pin 3)	V_{c3}	—	0	—	dB	Adjustment point	Fig. 3
Comparator level 4 (pin 4)	V_{c4}	+2.5	+3	+3.5	dB		Fig. 3
Comparator level 5 (pin 6)	V_{c5}	+5	+6	+7	dB		Fig. 3
Sensitivity	V_{IN}	74	85	96	mVrms	V_{c3} on-state level	Fig. 3
LED Current	I_{LED}	5	7	9.5	mA		Fig. 3
Input bias current	I_{INO}	—	0.3	1.0	μA		Fig. 3