Two-Phase Clock Generator for BBD's

V3102

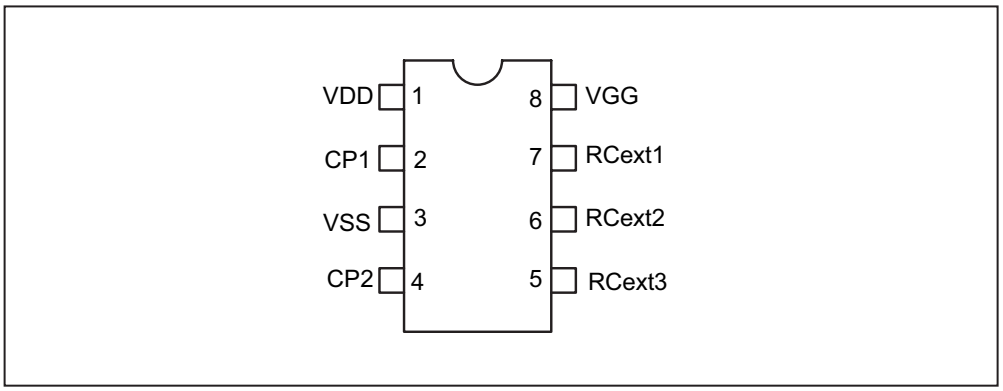
1. Description

The V3102 is a universal CMOS LSI to generate a two-phase clock signal of low output impedance, perfectly suitable to drive BBDs up to 4096 stages, such as V3207, V3208, V3205, etc.

2. Features

- **Direct driving capability of up to 4096-stage BBD's**
- **Self-oscillation or separate excitation possible**
- **Two phase clock output (duty: 1/2)**
- **Incorporates a diode to protect the IGBT gate at power on**
- **Package outline: DIL-8 (V3102D)**
- **ROHS compliant (PB-free)**

3. Pin Configuration



Rev. 1.0

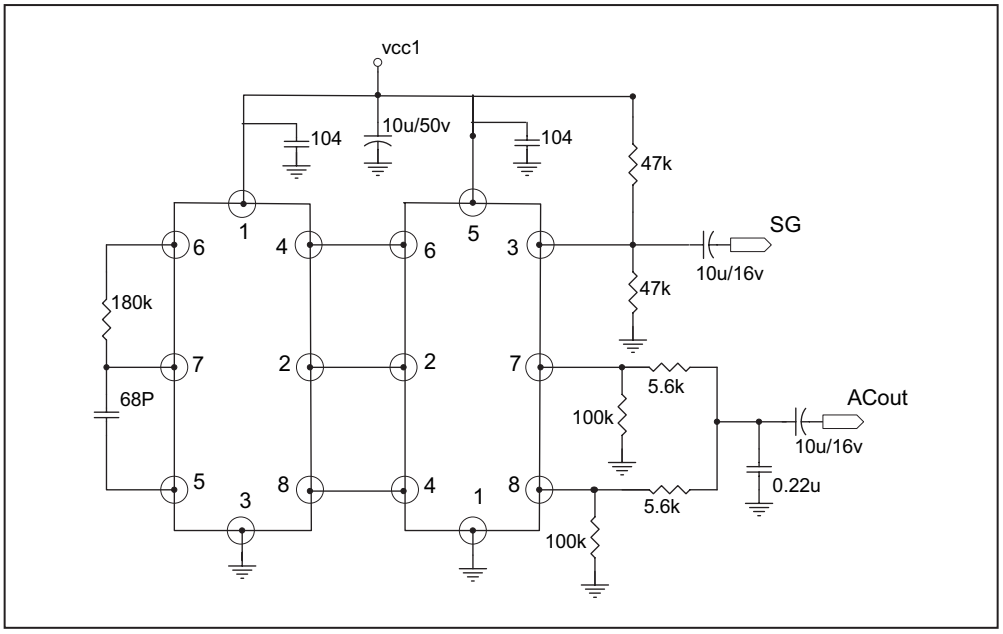
4. Absolute Maximum Ratings (Tamb=25°C)

Parameter	Symbol	Min	Max	Unit
Collector Supply Voltage	V_{CC}	-0.3	12	V
Input Voltage	V_I, V_O	-0.3	V_{CC}+0.3	V
Power Dissipation	P_D		200	mW
Operating Temperature	Tamb	-10	70	°C
Storage Temperature	Tstg	-30	125	°C

5. Electrical Characteristics (Ta=25°C, V_{CC}=20V, Unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Drain Supply Current	I cc	RL=∞, F0=40KHZ		0.5		mA
Total Power Dissipation	Ptot			2.5		mW
Input Current “H” Level	VIH	VCC=5V, 10V	VCC-1		V_{CC}	V
Input Current “L” Level	VIL	VCC=5V, 10V	0		1	V
Input High Leakage Current	IIH (L)	VI=10V			30	μA
Input Low Leakage Current	IIL (L)	VI=10V			30	μA
Output Current “H” Level	IOH(1)	VCC=5V, VO=4V	0.5			mA
Output Current “L” Level	IOL(1)	VCC=5V, VO=1V	0.4			mA
Output Leakage Current “H” Level	IOH(L1)	VCC=10V, VO=VCC			30	μA
Output Leakage Current “L” Level	IOL(L1)	VCC=10V, VO=VSS			30	μA
Output Current “H” Level	IOH(L2)	VCC=5V, VO=4V	0.7			mA
Output Current “L” Level	IOL(L2)	VCC=5V, VO=1V	1			mA
Output Leakage Current “H” Level	IOH(L2)	VCC=10V, VO=VCC			30	μA
Output Leakage Current “L” Level	IOL(L2)	VCC=10V, VO=VSS			30	μA
Output Current “H” Level	IOH(3)	VCC=5V, VO=4V	5			mA
Output Current “L” Level	IOL(3)	VCC=5V, VO=1V	5			mA
Output Leakage Current “H” Level	IOH(L3)	VCC=10V, VO=VCC			30	μA
Output Leakage Current “L” Level	IOL(L3)	VCC=10V, VO=VSS			30	μA

6. Application Circuit



7. Mechanical Drawing

DIP-8 unit : mm