

The C14051 series realizes compact size, high conversion efficiency, high stabilization circuit and high reliability by various protective functions.

FEATURES

- High output voltage: Max. 10 kV / 0.2 mA
- Wide input voltage range: +11 V to +16 V
- Compact and high conversion efficiency
- High voltage and current output monitor
- Various protective functions

APPLICATIONS

- Scanning electron microscope
- Mass spectrometry
- Electrostatic clampless holder
- Ionization source
- Bias power supply

SPECIFICATIONS



CE (C14051-15 only)

Parameter	C14051-15 ^①	C14051-55 ^①	Unit
Input voltage (Vcc)	+11 to +16		V
Input current ^{②④⑤}	260		mA
Output controlling voltage (Vcont)	By external controlling voltage (0 V to +5 V) or external potentiometer (50 kΩ)		
Controlling voltage input impedance	80		kΩ
Specification guaranteed output voltage range ^③	-2 to -10	+2 to +10	kV
Output accuracy ^④	±2		%
Line regulation (against +11 V to +16 V input change) ^{④⑤} Max.	±0.1		%
Load regulation (against 0 % to 100 % load change) ^④ Max.	±0.1		%
Temperature coefficient ^{④⑤}	±0.01		%/°C
Ripple / Noise (p-p) ^{④⑤}	0.1		V
Output voltage rise time (0 % → 99 %) ^{④⑤}	200		ms
Output current	Max. 0.2		mA
Voltage monitor	Range	0 to +2.5	
	Accuracy	Max. 2	
Current monitor	Range	0 to +4.0	
	Accuracy	Max. 2	
Reference voltage (Vref)	+5.1		V
Operating ambient temperature ^{④⑤⑥}	-10 to +60		°C
Storage temperature ^⑥	-20 to +70		°C
Dimensional outline	W 98 × D 45 × H 25 ^⑦		mm
Weight	160		g
Protective functions	Installed input FUSE ^⑧ / Reversed power input protection Overheat protection / Controlling voltage input protection Output overcurrent protection / Output overvoltage protection		—

NOTE: ①The specification table is typical value unless there is a definition such as "Max."

②V_{cc}=+12 V

③The voltage from 0 V to 2000 V can be output but all characteristics are not necessarily satisfied

④At maximum output voltage ⑤At maximum output current

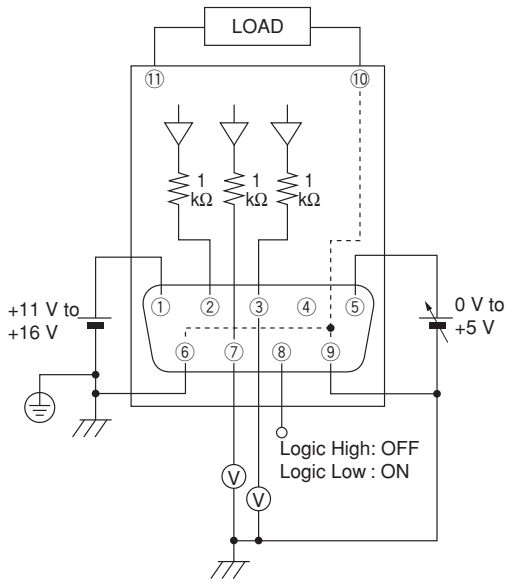
⑥At ambient humidity below 80 % (no condensation)

⑦Excluding the projection and the cable ⑧Not exchangeable

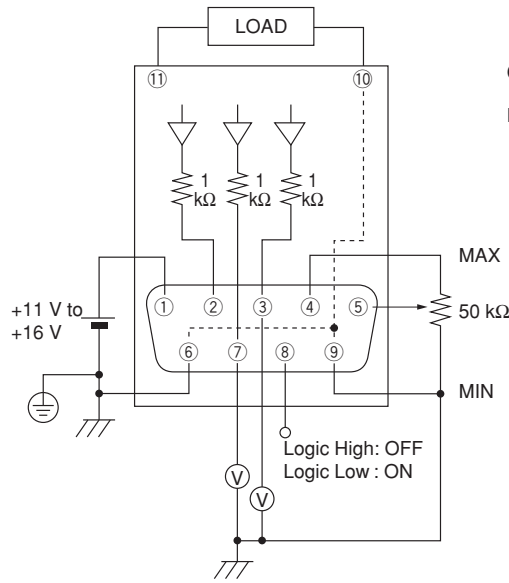
10 kV OUTPUT HIGH VOLTAGE POWER SUPPLY C14051 SERIES

Figure 1: Output voltage controlling

●BY EXTERNAL VOLTAGE



●BY EXTERNAL POTENTIOMETER



Connector: D-sub 9 pin

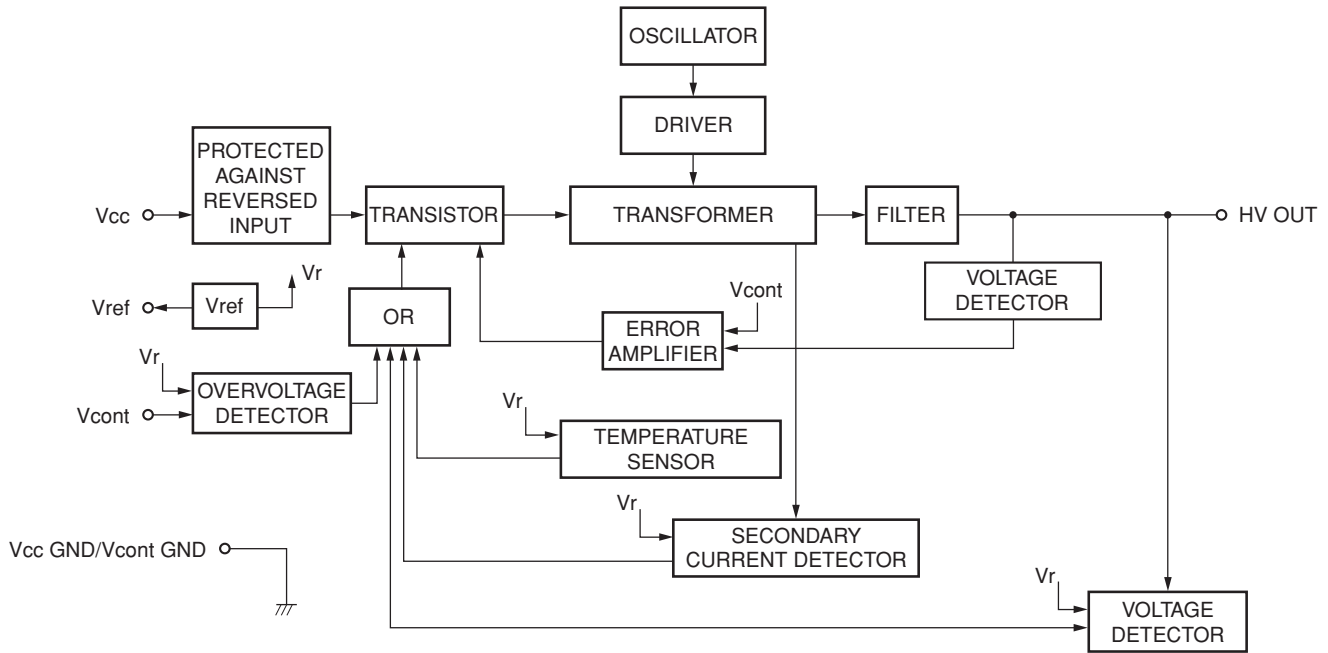
PIN ASSIGNMENT

- ① Vcc +11 V to +16 V
- ② ERROR OUT (0 V or +5 V)
- ③ CURRENT MONITOR OUT
- ④ Vref +5.1 V
- ⑤ Vcont 0 V to +5 V
- ⑥ Vcc GND
- ⑦ HV MONITOR OUT
- ⑧ ON / OFF IN
- ⑨ Vcont GND
- ⑩ HV GND
- ⑪ HV OUT

- * The instability in the external controlling voltage should be minimized as it directly affects the output voltage quality
- * The housing is internally connected to pin ⑥.
- * Pin ⑥ and Pin ⑨ and ⑩ are internally connected.

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Figure 2: Circuit block diagram



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Figure 3: Long-term stability

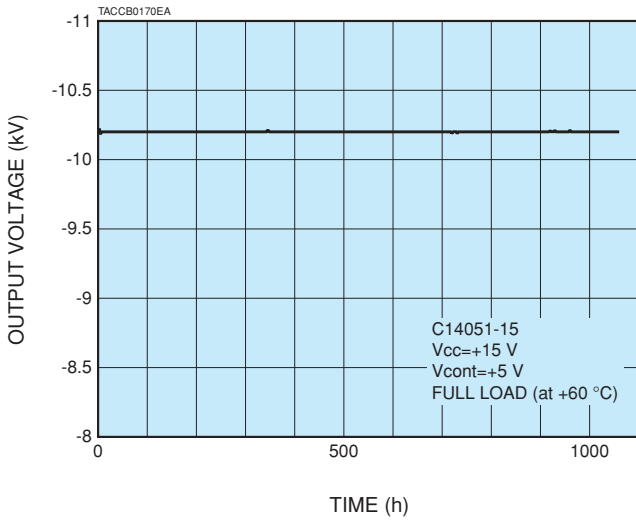


Figure 4: Short-term stability

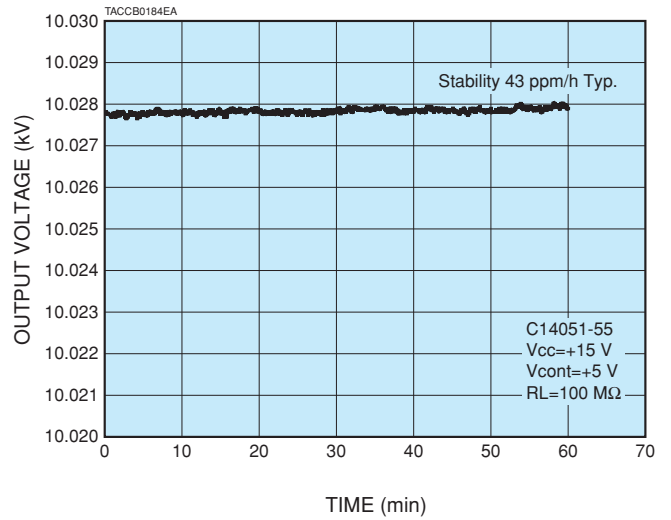


Figure 5: Ripple / Noise

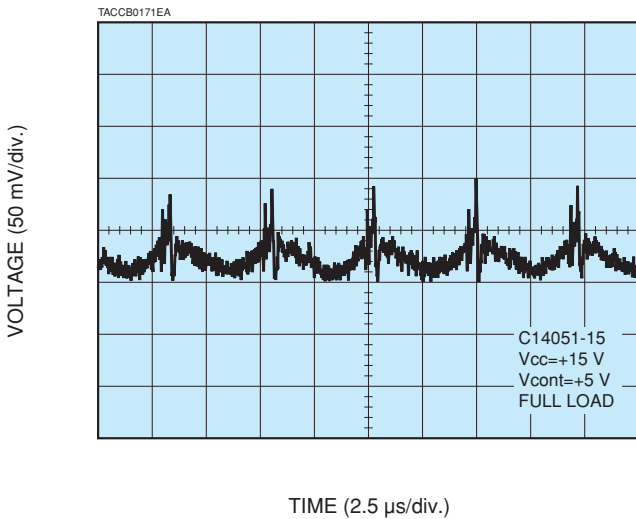


Figure 6: Monitor voltage vs. output voltage

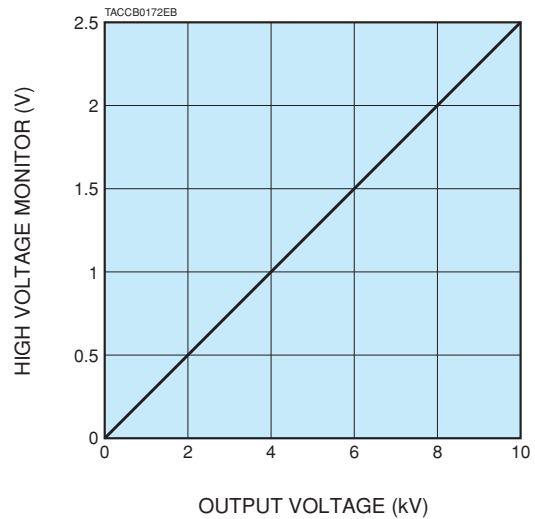
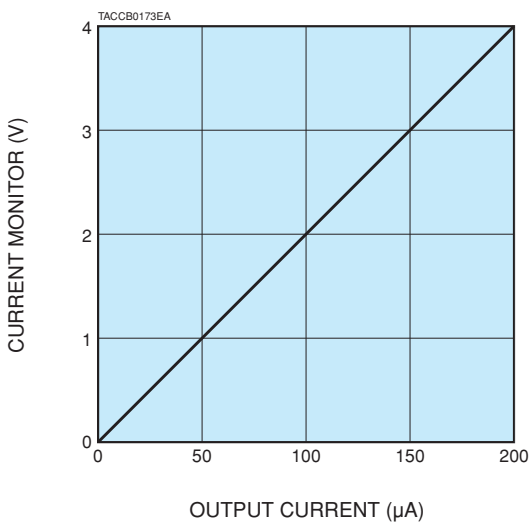


Figure 7: Monitor voltage vs. output current

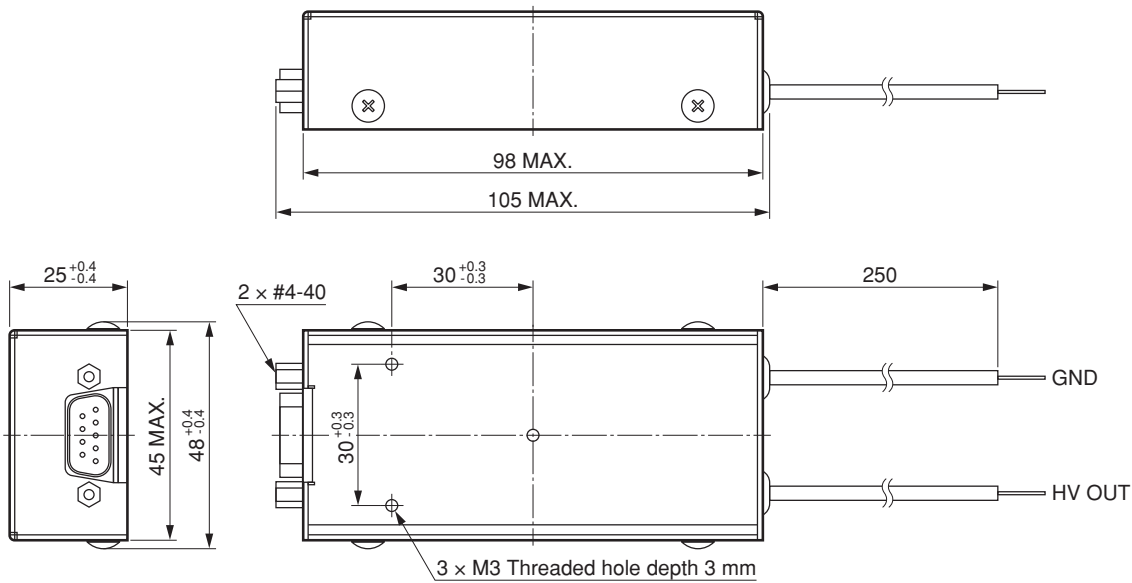


* These figures indicate nominal characteristics.

* Figure 6, 7 are common to C14051-15 and C14051-55.

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Figure 8: Dimensional outline (Unit: mm)



Black: GND (IRRAX, AWG16, Outer diameter 3.1 mm)
Red: HV OUT (CROSS-LINKED POLYETHYLENE, AWG22, Outer diameter 3.0 mm)

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