

SNEG-34E series

Subnanosecond electrical generator

Specifications.

Parameter	Version SNEG-34EA	Version SNEG-34ER
Signal amplitude (into 50 Ohm load)	> 14 V, fixed	> 20 V, adjustable
Polarity	Negative	Negative
Pulse width (FWHM)	< 300 ps	<400 ps
Pulse front duration (10%-90%) ⁺	<150 ps	<200 ps
PRF, external trigger (internally limited)	single shot to 10 MHz	single shot to 2 MHz
Post-pulse ringing	±7% or less	±10% or less
Propagation delay (External Trigger Input to Output pulse)	10-20 ns, fixed	10-25 ns, fixed
Sync delay (Sync Out to Output pulse)	0.5-10 ns, fixed	0.5-10 ns, fixed
Jitter, RMS	4 ps - 15 ps*	4 ps - 15 ps*
DC offset or bias insertion	No	No
Trigger required, "Trigger prescale" input:	2.5 V < Input < 15 V (strictly <5V!)	2.5 V < Input < 15 V (strictly <5V!)
Trigger required, "Trigger direct" input:	2.5 V < Input < 5 V	2.5 V < Input < 5 V
Sync output	3.5V (into 50 Ohm load), pulsewidth 30ns approx.	3.5V (into 50 Ohm load), pulsewidth 30ns approx.
Connectors, signal	SMA (F)	SMA (F)
Connector, power	Barrel, 2.5mm pin (M) To match plug "Lumberg 1634 02".	Barrel, 2.5mm pin (M) To match plug "Lumberg 1634 02".
Power requirement	+14V, (200mA)	+14V, (200mA)
Dimensions	106 x 30 x 120 mm	106 x 30 x 120 mm

⁺ Corresponding pulse front durations (20%-80%) <140 ps and <180 ps.

* Lowest RMS time jitter is obtained when using "Trigger direct" input, at pulse repetition rate ≥ 1MHz.

Description.

SNEG-34E is a series of generators of medium voltage, ultrashort electrical pulses in picosecond range, pulsewidth of 100 ps to 500 ps, and amplitude of 10 V to 30 V (depending on model), on 50-ohm load. The output pulse is of negative polarity. The output pulse possesses a short, virtually linear, front with a longer, quasi-exponential tail.

The triggering is provided by an external clock. A built-in oscillator is available as an option.

The generator is designed in compact and robust module format and powered by a single-rail DC supply.

In the basic version "-EA", the output amplitude is preset at factory. The tuneable "-ER" version allows manual attenuation of output voltage in range 70 % - 100 %.



Figure 1. Front and rear views.

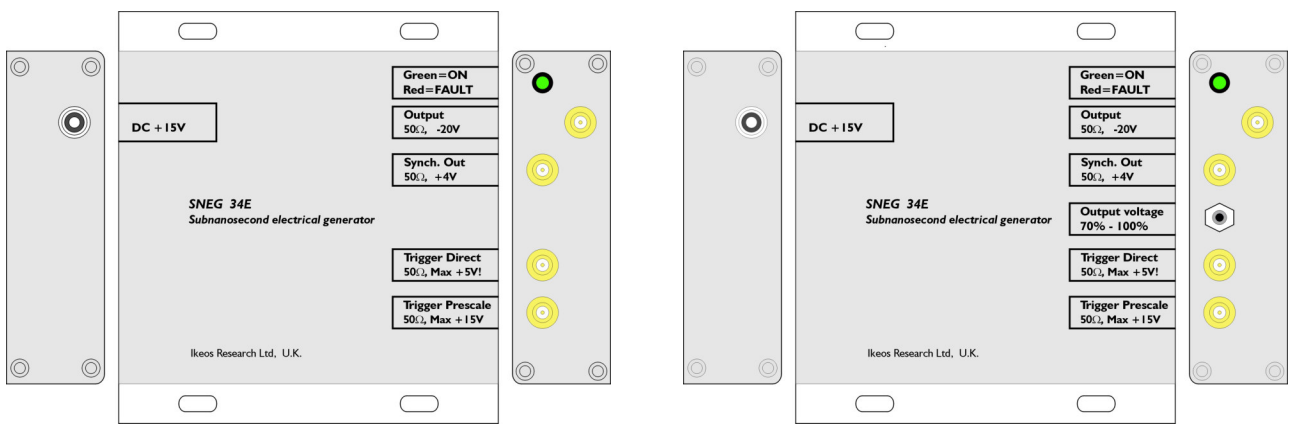


Figure 2. Left: version 34-EA. Right: version 34-ER.

Options

Parameter	Standard	Available options
Polarity	Negative output pulse	External pulse inverter.
Connector, power	Barrel, 2.5mm pin (F)	Power D-Sub 2W2; USB type B; mini-USB; screw wire terminal, 5.2mm or 3.5mm.
Power supply	+14V, (200mA)	12V(200mA); 5V(500mA)
Built-in oscillator	No	10 kHz - 1 MHz