

STEP RECOVERY DIODES (SRDS) COMB GENERATORS

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Diodes switching from forward to reverse polarization deliver in a certain time all the charge stored on both sides of the space-charge/depletion region. **SRDs** have a **PIN-like** structure with a **special doping profile** allowing the reverse current to circulate across the depletion region for a short time before **abruptly dropping to zero in few tens of ps.**

The sharp variation of the circuit current can be used to generate **short voltage pulses** on a load. The spectrum of the output signal is a **series of peaks** containing **all the harmonics** of the **input sine-wave** and may extends well beyond **10 GHz** (comb generator).

SRDs are used to generate very short pulses (time domain) or to extract any required harmonics of the input signal by properly filtering the output voltage (frequency multiplier).

