

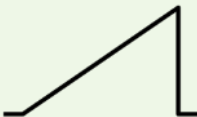





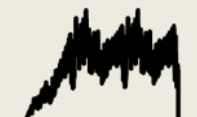
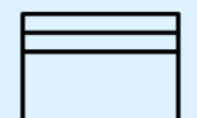

Pre-Reqs :			Computes :
none	<div><div>Ramp</div><div></div><div><p><i>Description:</i> Current injection of increasing intensity at a rate much slower than the time constant of the neuron. <i>Details:</i> Ramp of 25 pA per 1 second, terminated after a series of action potentials are acquired.</p></div></div>	ap count	
non-is rheobase	<div><div>Long Square</div><div></div><div><p><i>Description:</i> Square pulse of a duration to allow the neuron to come to steady-state. <i>Details:</i> 1 s current injections from -110 pA (or -190 for some Pvalb neurons) to rheobase + 160 pA, in 20 pA increments.</p></div></div>	Vss (i) TABL	
non-is none	<div><div>Short Square</div><div></div><div><p><i>Description:</i> Square pulse brief enough to elicit a single action potential. <i>Details:</i> 3 ms current injections used to find the action potential threshold within 10 pA.</p></div></div>	thresh i	
non-is rest V I-bias x3	<div><div>Short Square</div><div></div><div><p><i>Description:</i> Short pulse stimulus with stepped holding potentials. <i>Details:</i> Bias current brings the neuron to steady state potentials of -60 mV or -80 mV. If the neuron rests at -80 mV or -60 mV, the neuron is held at -70 mV.</p></div></div>	I-th (Vhold	
thresh i none	<div><div>Short Square Triple</div><div></div><div><p><i>Description:</i> Three short pulse stimuli in rapid succession. <i>Details:</i> Three threshold stimuli of 3 ms duration are delivered at decreasing frequencies from ~140 Hz to ~30 Hz.</p></div></div>		
non-is rheobase	<div><div>Noise 1 & 2</div><div></div><div><p><i>Description:</i> Noise pulses offset with square current injections. <i>Details:</i> Pink noise generated from 2 seeds (1 & 2) scaled to three amplitudes, 0.75, 1, and 1.5 times rheobase. Additional details can be found in the Appendix.</p></div></div>		
non-is rb	<div><div>Noise Ramp to Rheobase</div><div></div><div><p><i>Description:</i> Noise pulse offset with a ramp to rheobase current injection. <i>Details:</i> Noise with varying coefficients of variation, scaled to rheobase. Additional details can be found in the Appendix.</p></div></div>		
non-is rb	<div><div>Square 2 s Suprathreshold</div><div></div><div><p><i>Description:</i> Suprathreshold long square current injections to analyze sustained action potential firing. <i>Details:</i> 2 s square current injections to rheobase + 40 pA and 80 pA. Additional details can be found in the Biophysical Models - perisomatic Technical White Paper.</p></div></div>		
none	<div><div>Square 0.5 ms Subthreshold</div><div></div><div><p><i>Description:</i> Brief subthreshold square current injections used to determine membrane capacitance for biophysical models. <i>Details:</i> 0.5 ms square current injections to +/- 200 pA. Additional details can be found in the Biophysical Models - perisomatic Technical White Paper.</p></div></div>		

Figure 3. Electrophysiology stimulus descriptions and details. The square 2 s suprathreshold and 0.5 ms subthreshold stimuli are further described in the Biophysical Model-perisomatic whitepaper located in "[Documentation](#)."