

Optocoupler VOD3120

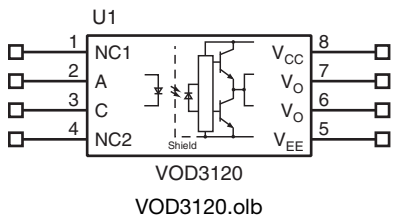
2.5 A Output Current IGBT and MOSFET Driver

DESCRIPTION

The device consists of a LED optically coupled to an integrated circuit with a power output stage. This optocoupler is ideally suited for driving power IGBTs and MOSFETs used in motor control inverter applications. The PSpice models have been written from device characterization data and were tested with simulation program OrCAD16.6.

The symbol and model files as well as the netlist are in the symbol library file VOD3120.olb, model library file VOD3120.lib, and netlist file VOD3120.txt respectively for this model.

This document is intended as a guideline of simulating with provided model and does not constitute as commercial product, neither a substitute to datasheet.

PART	MODEL DESCRIPTION	SYMBOL FILE	MODEL FILE
VOD3120	2.5 A Output Current IGBT and MOSFET Driver	 <p>VOD3120 VOD3120.olb</p>	VOD3120.lib

RECOMMENDED USE OF THE MODEL

- This model is designed only for use at 25 °C and should be used as is
- This model has been created and tested with OrCAD version 16.6
- The olb file (symbol) is not down-compatible. Users of the earlier versions need to create the symbols on their platform and associate with relative PSpice model data

SIMULATED PARAMETERS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	SIMULATION DATA	UNIT
INPUT				
Forward voltage	$I_F = 10\text{ mA}$	V_F	1.287	V
SWITCHING ⁽¹⁾				
Propagation delay time to logic high output	$R_g = 10\text{ }\Omega$, $C_g = 25\text{ nF}$, $f = 10\text{ kHz}$, duty cycle = 50 %	t_{PLH}	0.33	μs
Propagation delay time to logic low output		t_{PHL}	0.1	

Note

- See switching time and timing simulation setup for switching parameters

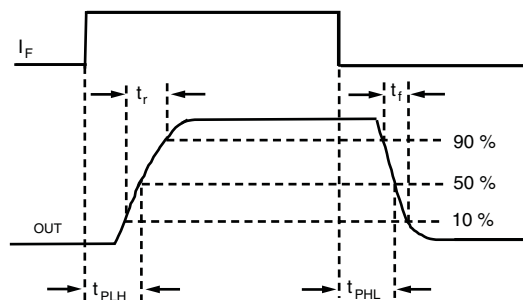


Fig. 1 - t_{PLH} , t_{PHL} , t_r , and t_f Waveforms



EXAMPLE SIMULATION PLOTS USING OrCAD

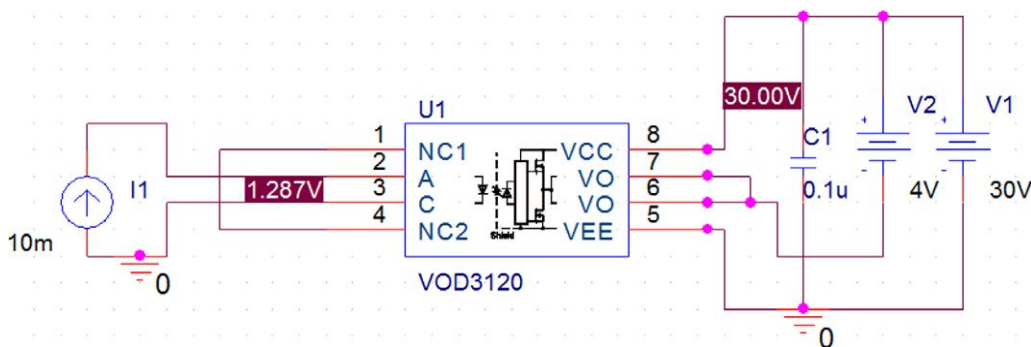


Fig. 2 - Simulation Setup for the DC Characteristics

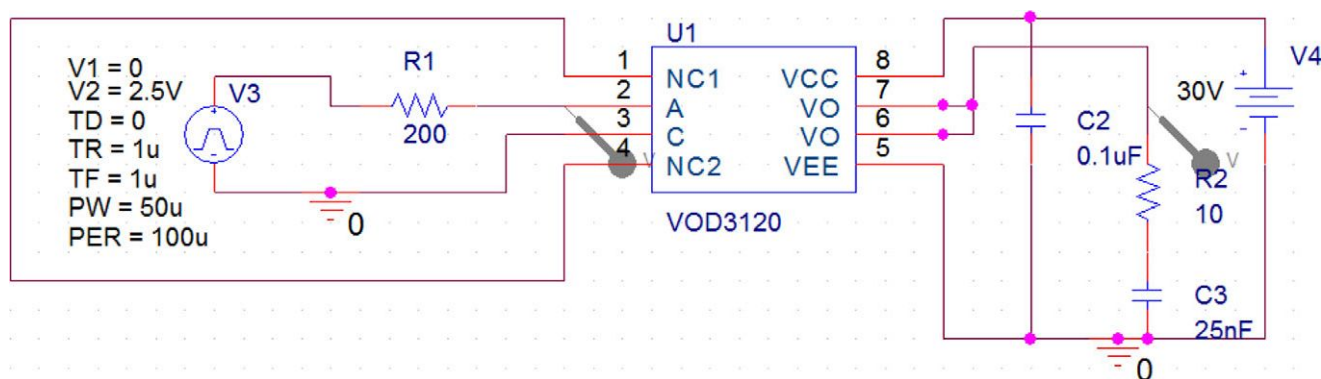


Fig. 3 - Timing Simulation Setup

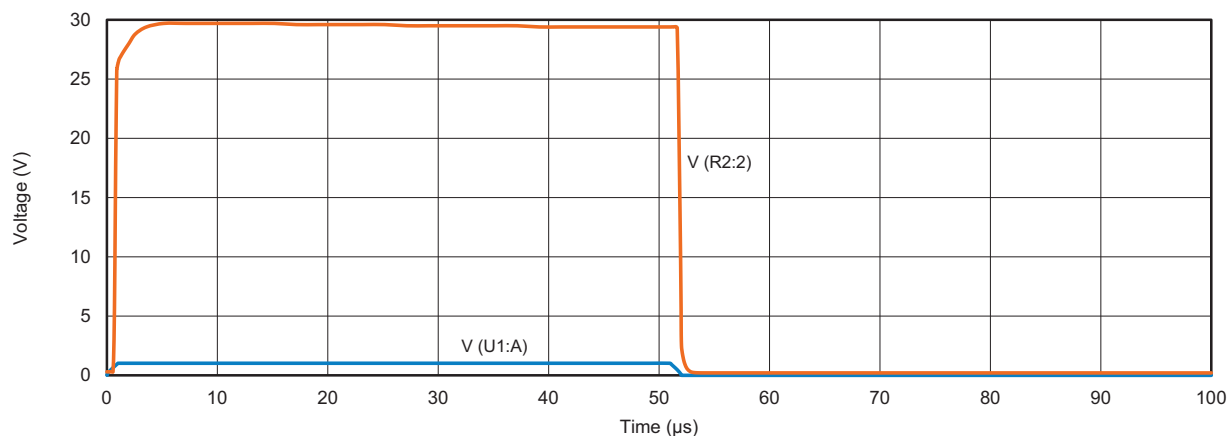


Fig. 4 - Timing Simulation Output Data