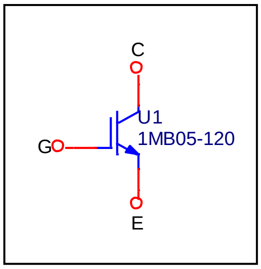
Device Modeling Report

COMPONENTS: Insulated Gate Bipolar Transistor (IGBT)
PART NUMBER: 1MB05-120
MANUFACTURER: Fuji Electric

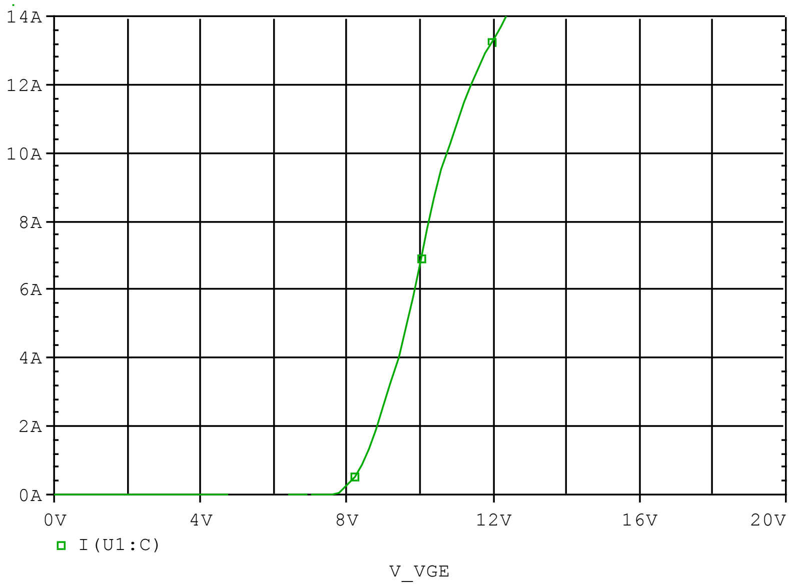
Bee Technologies Inc.

Circuit Configuration

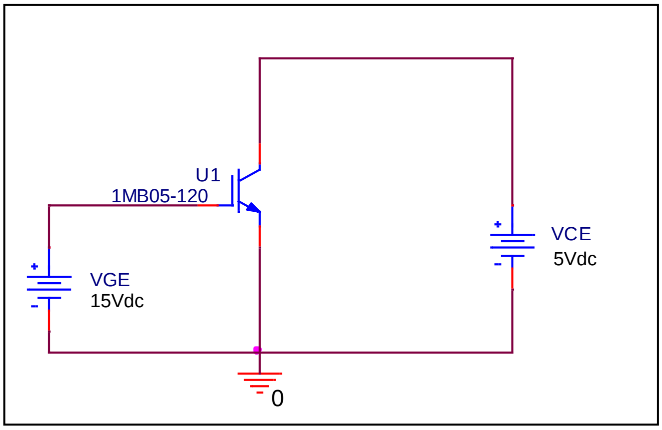


Transfer Characteristics

Circuit Simulation result

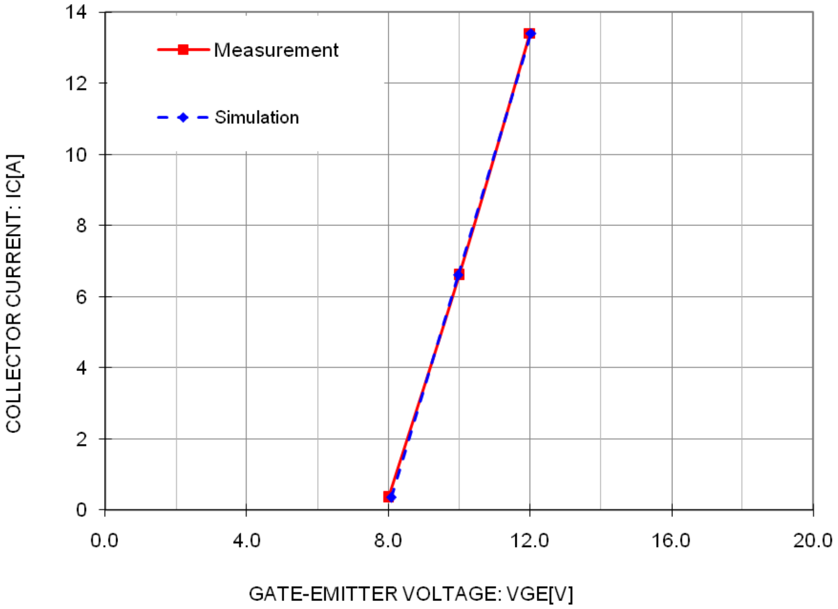


Evaluation circuit



Comparison Graph

Simulation result



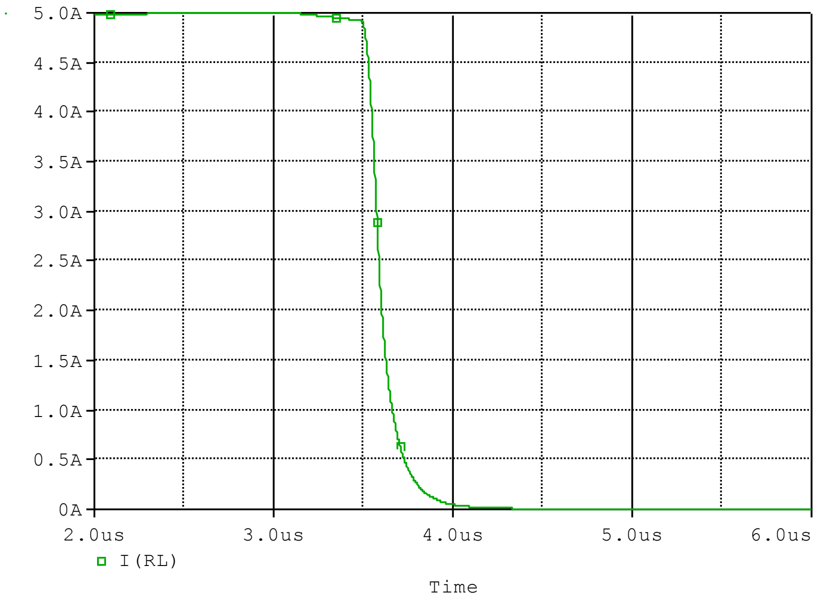
Comparison table

Test condition: VCE =5 (V)

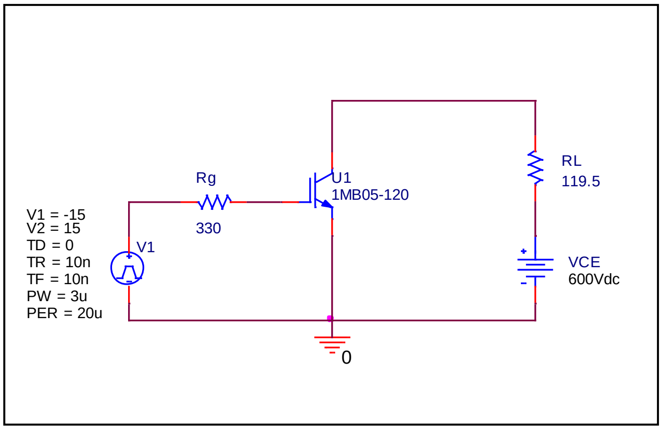
IC (A)	VGE (V)		%Error
	Measurement	Simulation	
0.350	8.000	8.082	1.02
6.600	10.000	9.970	-0.30
13.400	12.000	12.037	0.31

Fall Time Characteristics

Circuit Simulation result



Evaluation circuit

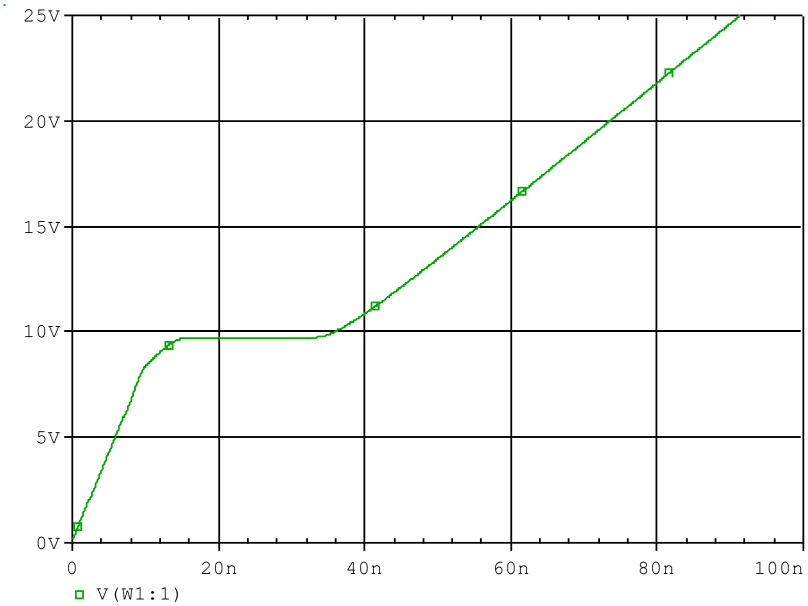


Test condition: I_C=5 (A), V_{CC}=600 (V)

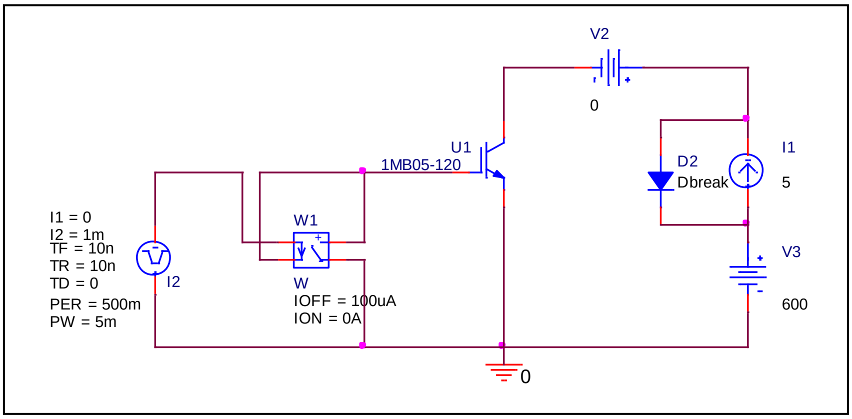
Parameter	Unit	Measurement	Simulation	%Error
tf	us	0.200	0.201	0.357

Gate Charge Characteristics

Circuit Simulation result



Evaluation circuit

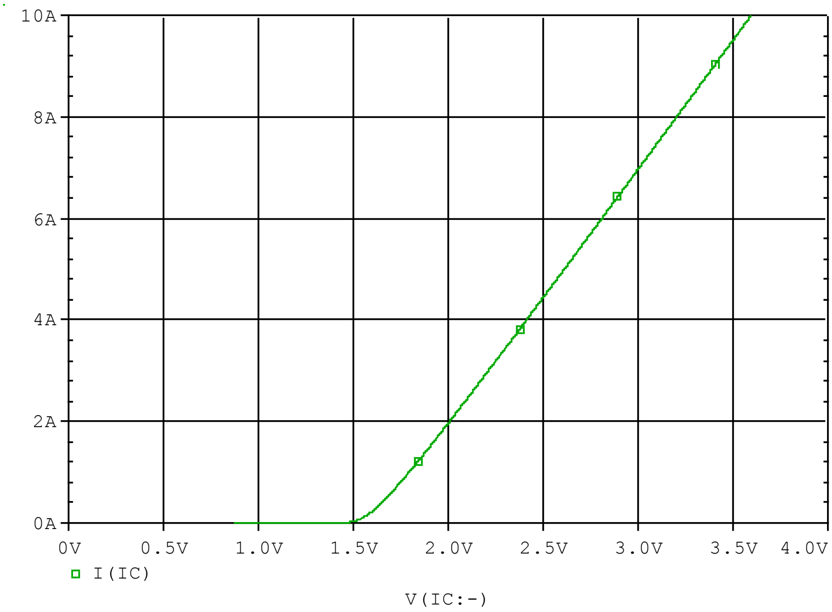


Test condition: VCC=600 (V), IC=5 (A), VGE=15 (V)

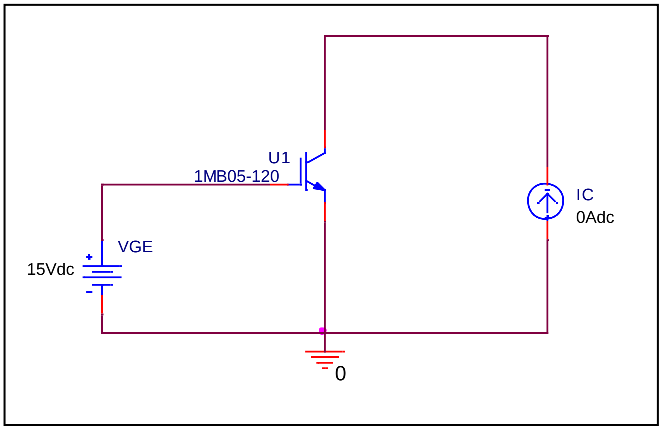
Parameter	Unit	Measurement	Simulation	%Error
Qge	nc	12.000	12.000	0.000
Qgc	nc	26.000	25.565	-1.673
Qg	nc	55.000	55.623	1.133

Saturation Characteristics

Circuit Simulation result



Evaluation circuit



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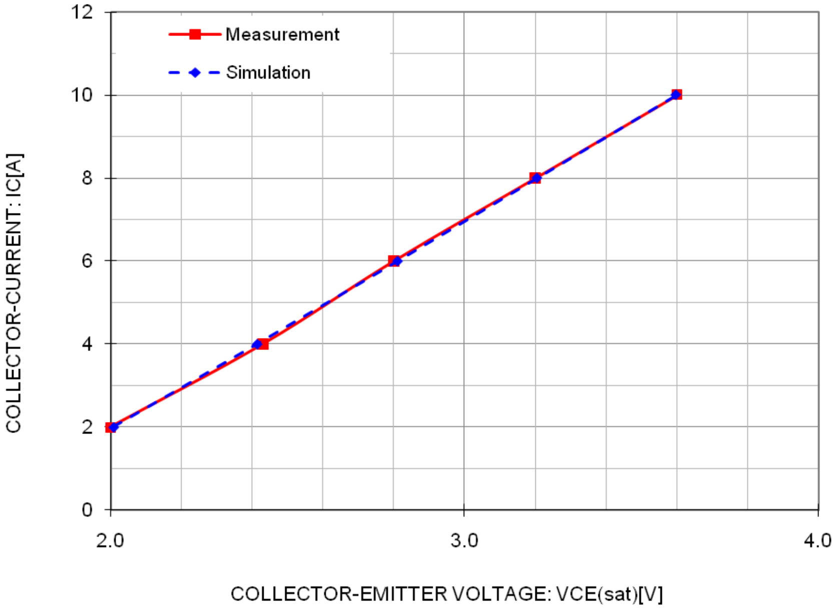
Comparison Graph

Simulation result



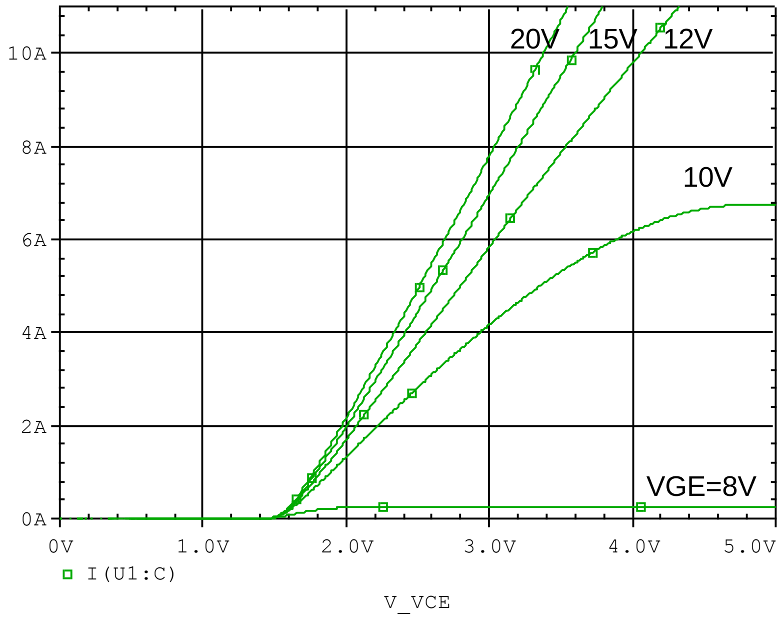
Comparison table

Test condition: V_{GE} =15 (V)

IF(A)	VF (V)		%Error
	Measurement	Simulation	
2.0	2.000	2.01	0.35
4.0	2.430	2.41	-0.71
6.0	2.800	2.81	0.35
8.0	3.200	3.20	0.12
10.0	3.600	3.60	-0.09

Output Characteristics

Circuit Simulation result



Evaluation circuit