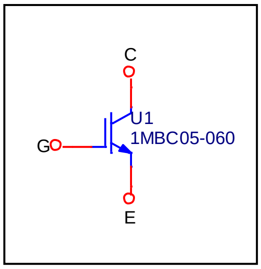
Device Modeling Report

COMPONENTS: Insulated Gate Bipolar Transistor (IGBT)
PART NUMBER: 1MBC05-060
MANUFACTURER: Fuji Electric

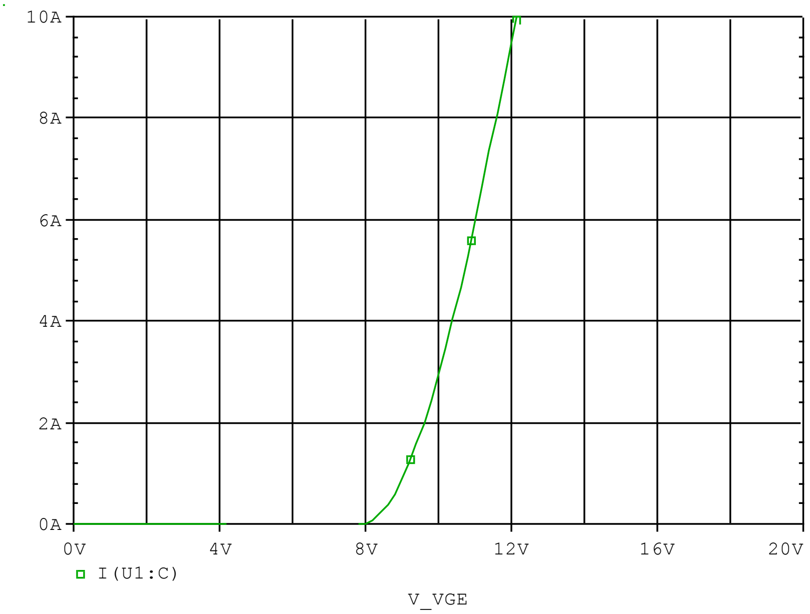
Bee Technologies Inc.

Circuit Configuration

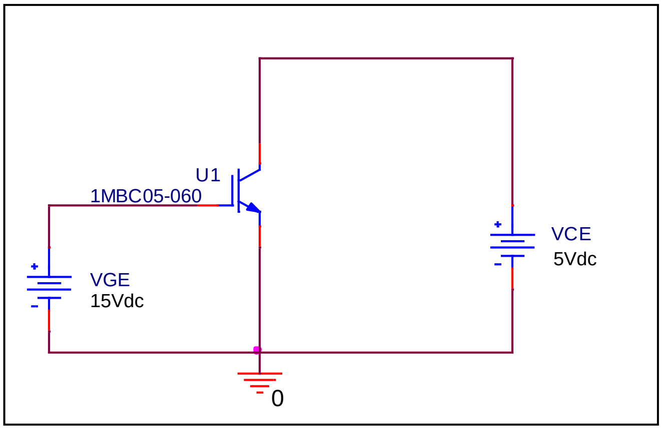


Transfer Characteristics

Circuit Simulation result

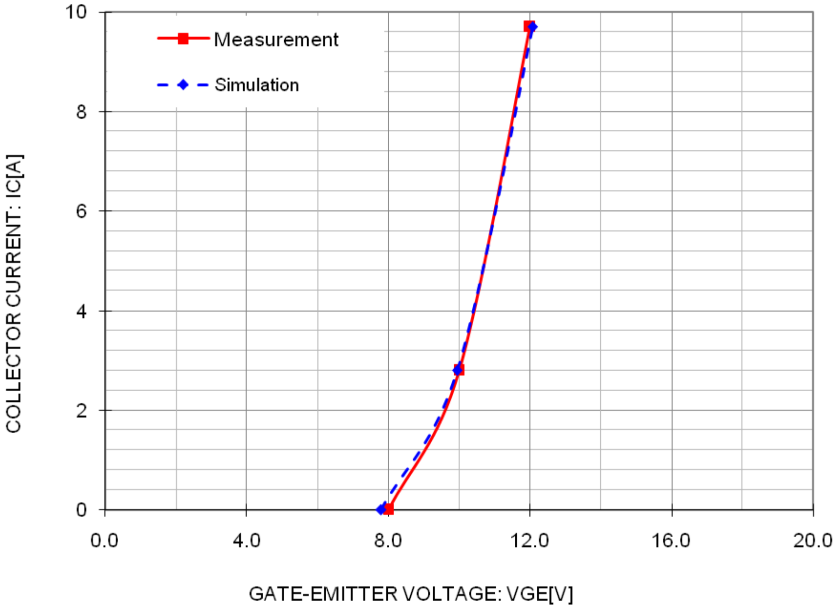


Evaluation circuit



Comparison Graph

Simulation result



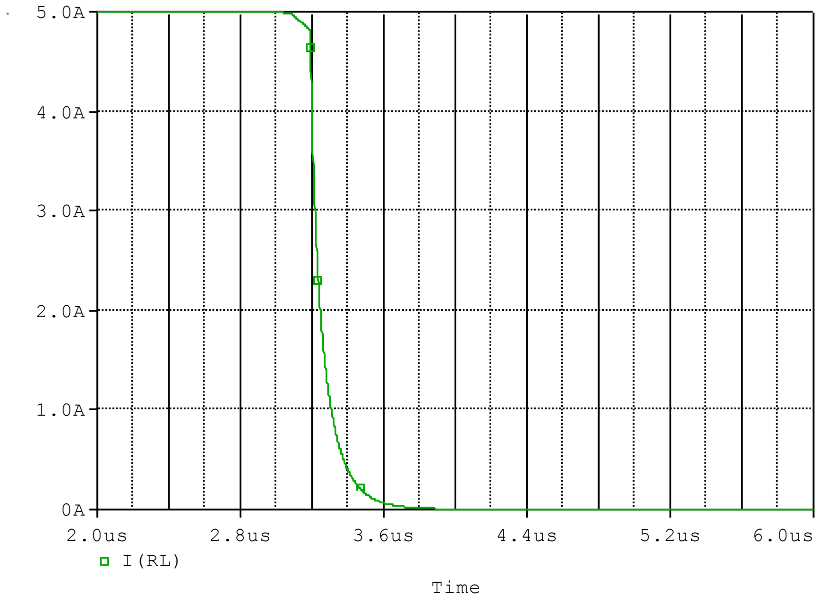
Comparison table

Test condition: V_{CE} =5 (V)

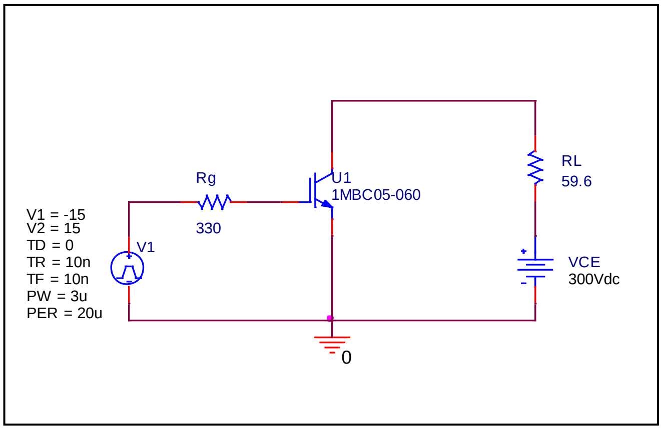
IC (A)	VGE (V)		%Error
	Measurement	Simulation	
0.000	8.000	7.800	-2.50
2.800	10.000	9.944	-0.56
9.700	12.000	12.067	0.56

Fall Time Characteristics

Circuit Simulation result



Evaluation circuit

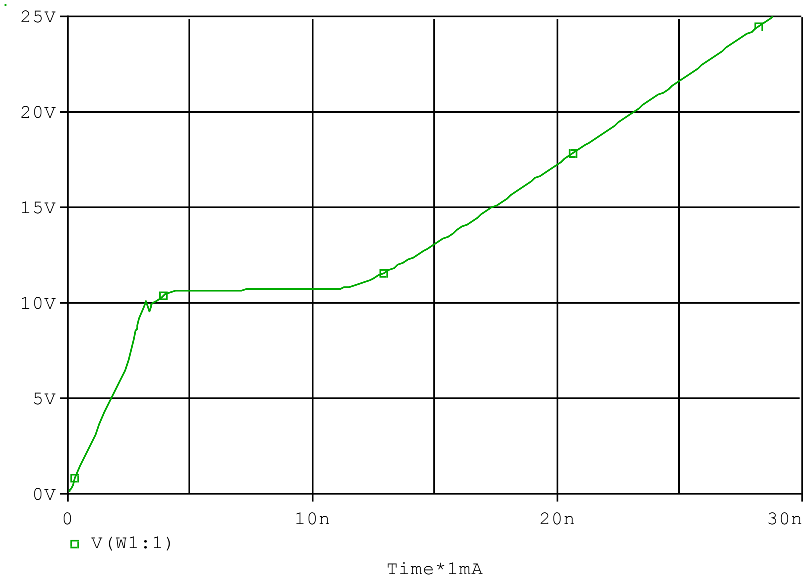


Test condition: IC=5 (A), VCC=300 (V)

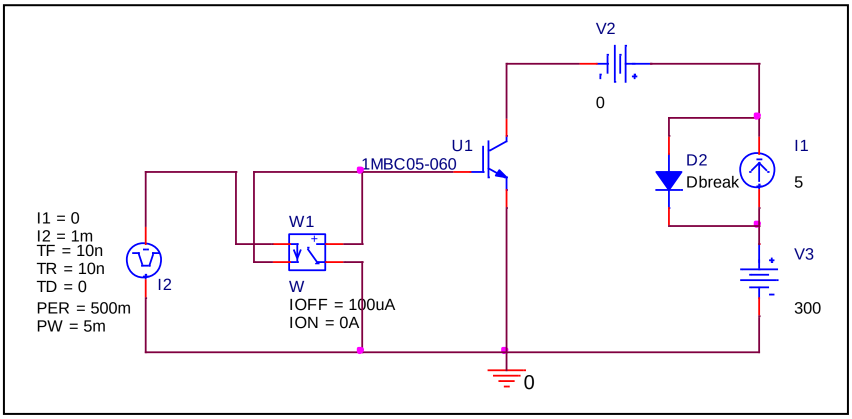
Parameter	Unit	Measurement	Simulation	%Error
tf	us	0.180	0.183	1.403

Gate Charge Characteristics

Circuit Simulation result



Evaluation circuit

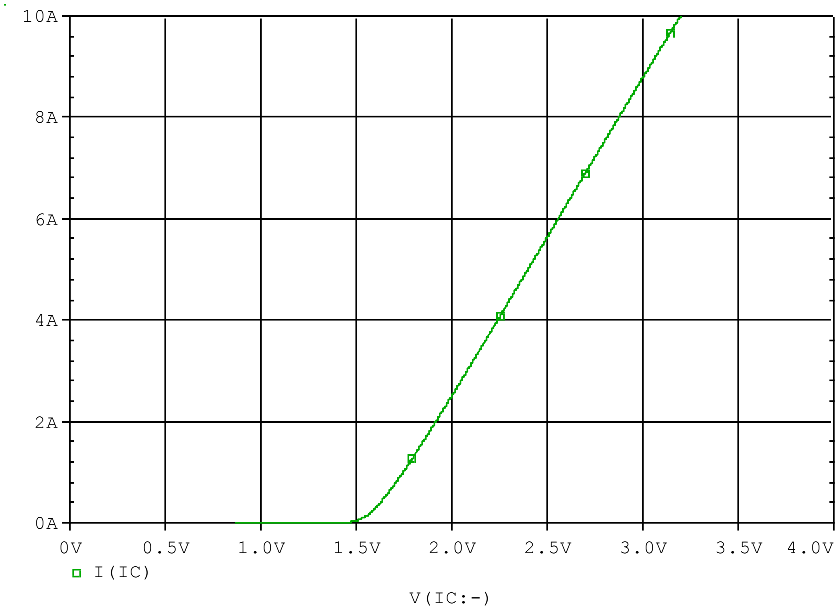


Test condition: VCC=300 (V), IC=5 (A), VGE=15 (V)

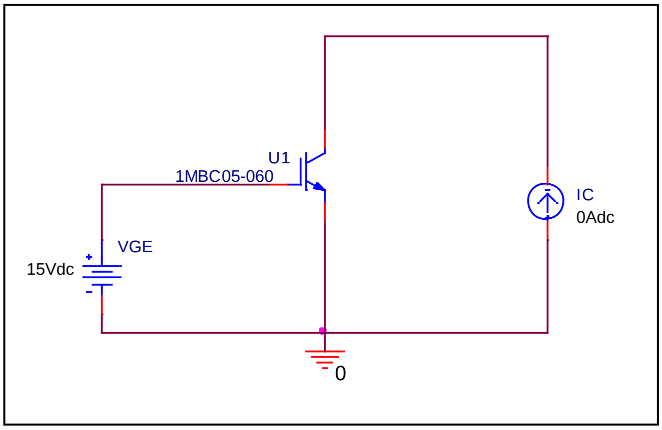
Parameter	Unit	Measurement	Simulation	%Error
Qge	nc	3.500	3.516	0.446
Qgc	nc	8.000	7.995	-0.065
Qg	nc	17.500	17.311	-1.080

Saturation Characteristics

Circuit Simulation result

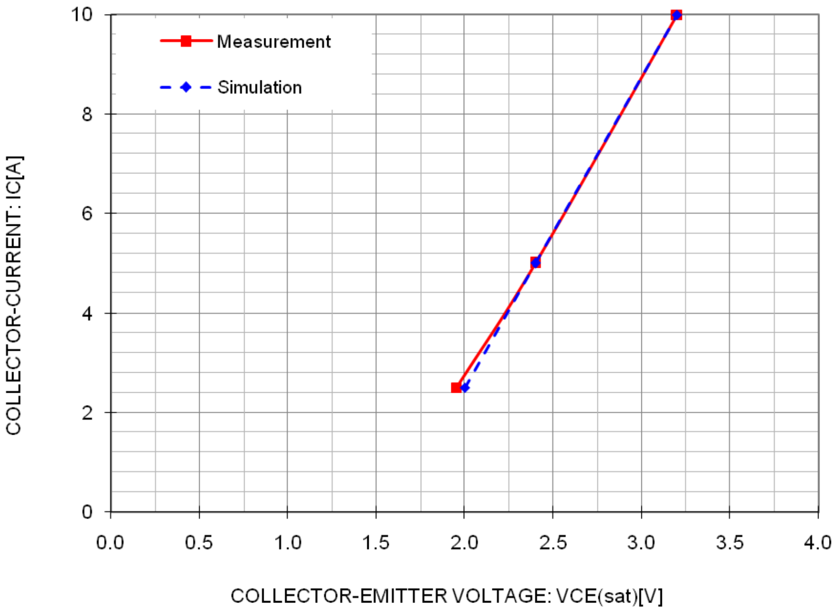


Evaluation circuit



Comparison Graph

Simulation result



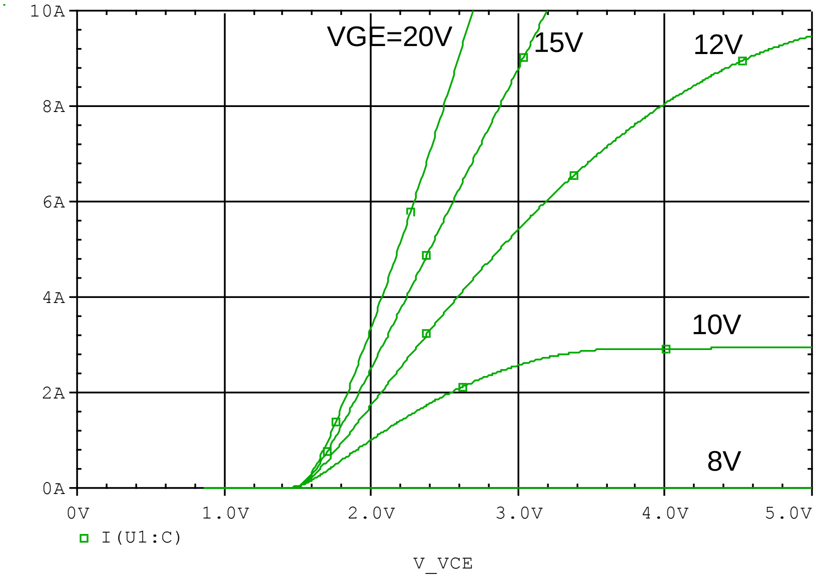
Comparison table

Test condition: VGE =15 (V)

IC (A)	VCE (V)		%Error
	Measurement	Simulation	
2.5	1.950	2.000	2.55
5.0	2.400	2.399	-0.03
10.0	3.200	3.199	-0.04

Output Characteristics

Circuit Simulation result



Evaluation circuit