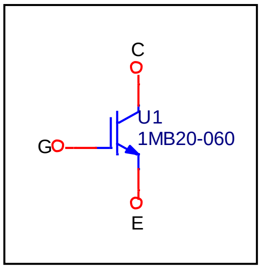
Device Modeling Report

COMPONENTS: Insulated Gate Bipolar Transistor (IGBT)
PART NUMBER: 1MB20-060
MANUFACTURER: Fuji Electric

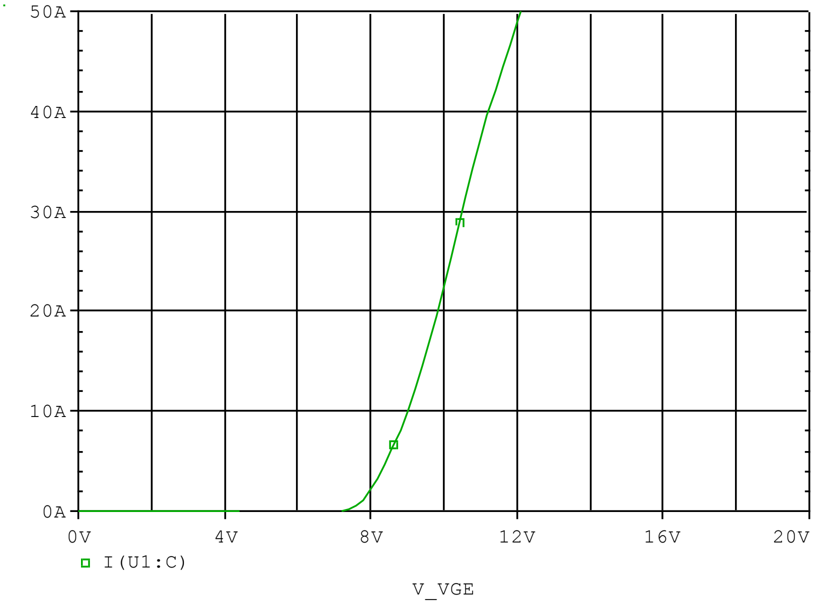
Bee Technologies Inc.

Circuit Configuration

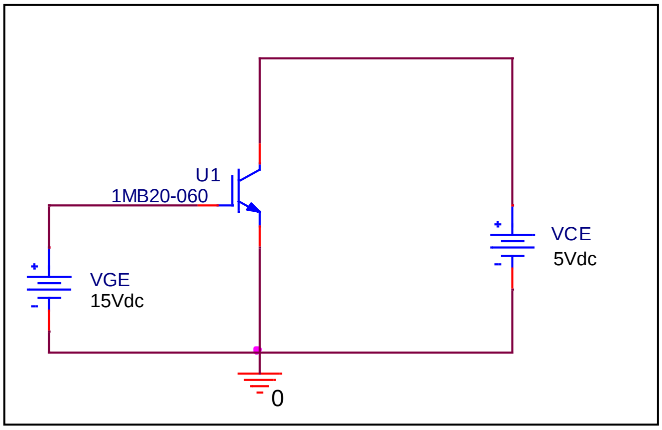


Transfer Characteristics

Circuit Simulation result

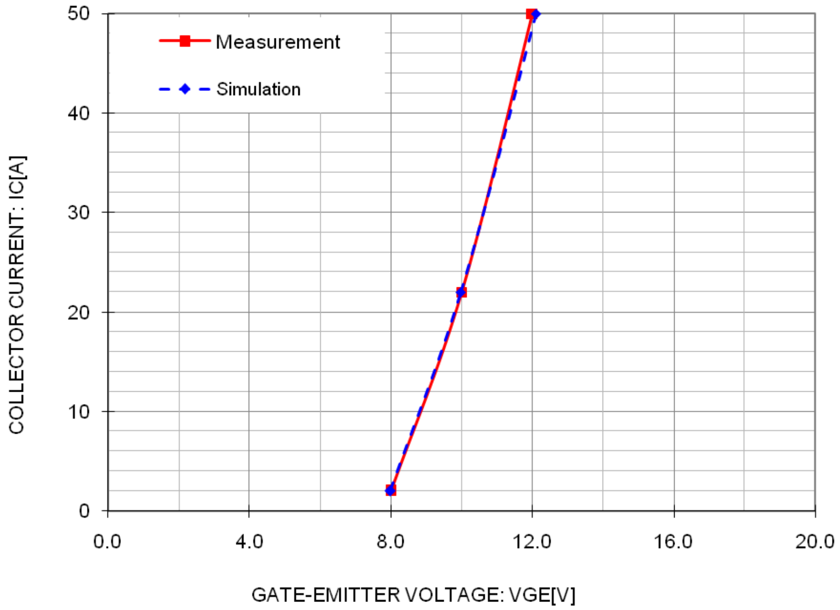


Evaluation circuit



Comparison Graph

Simulation result



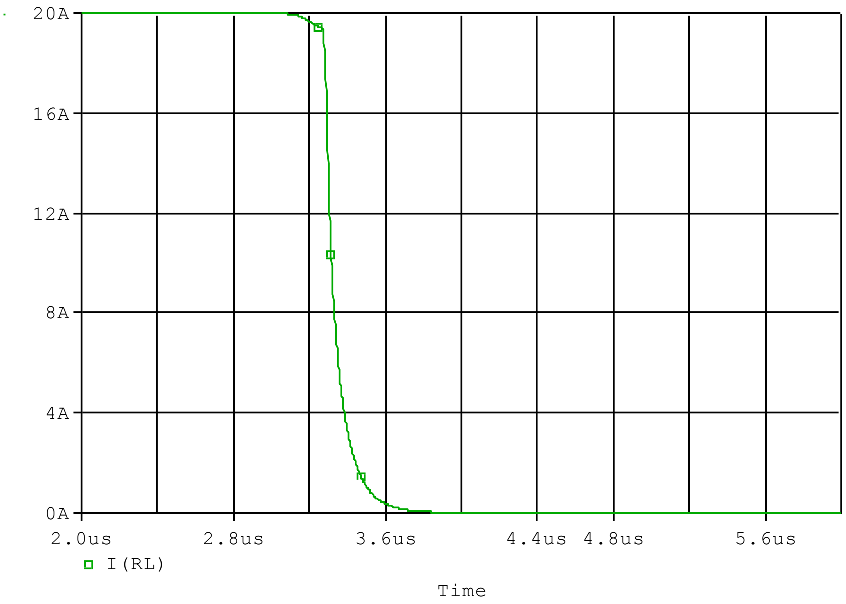
Comparison table

Test condition: VCE =5 (V)

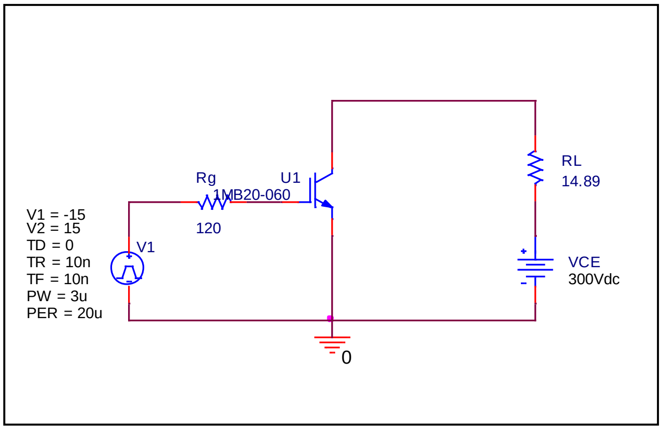
IC (A)	VGE (V)		%Error
	Measurement	Simulation	
2.000	8.000	7.986	-0.17
22.000	10.000	9.972	-0.28
50.000	12.000	12.107	0.89

Fall Time Characteristics

Circuit Simulation result



Evaluation circuit

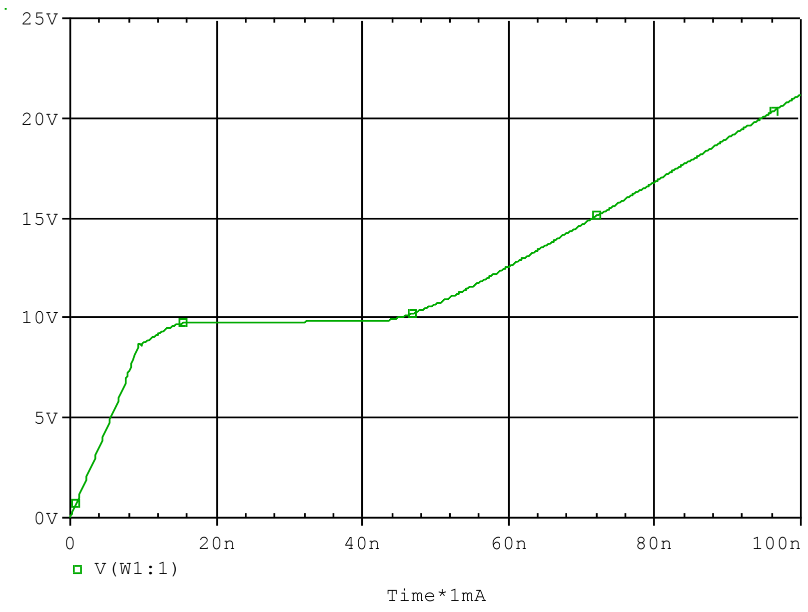


Test condition: IC=20 (A), VCC=300 (V)

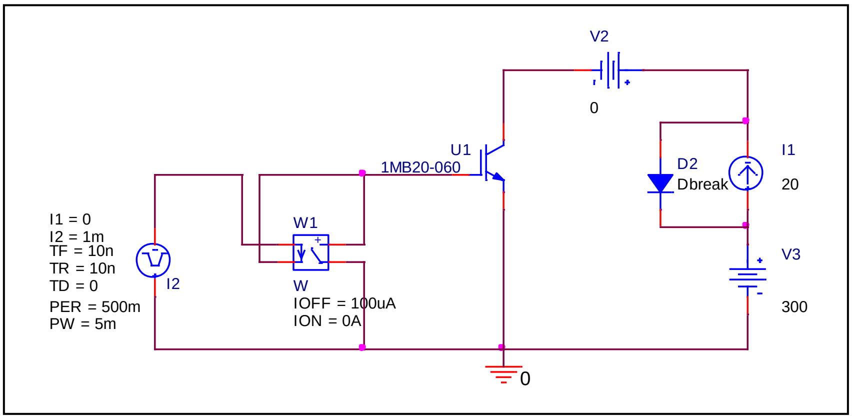
Parameter	Unit	Measurement	Simulation	%Error
tf	us	0.160	0.160	0.081

Gate Charge Characteristics

Circuit Simulation result



Evaluation circuit

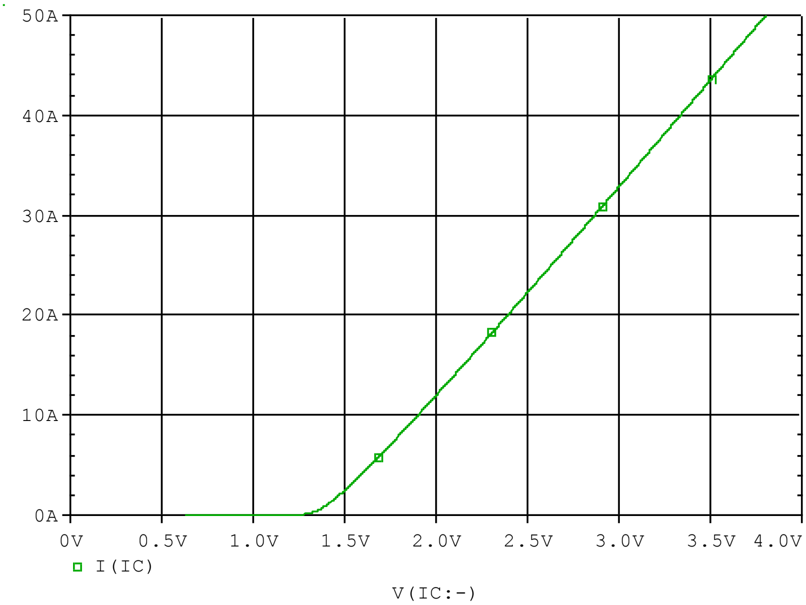


Test condition: VCC=300 (V), IC=20 (A), VGE=15 (V)

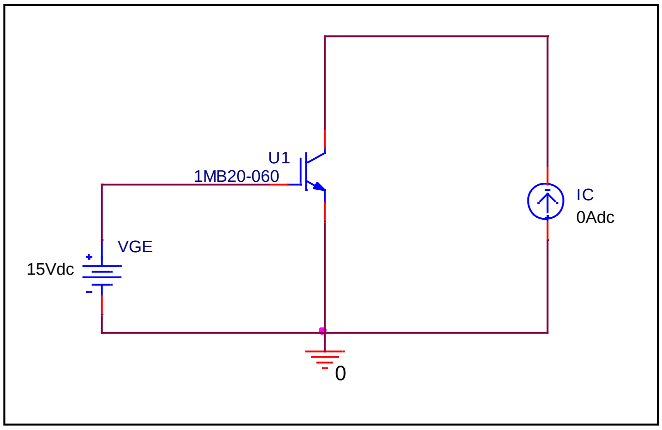
Parameter	Unit	Measurement	Simulation	%Error
Qge	nc	12.000	12.000	0.000
Qgc	nc	34.000	33.913	-0.256
Qg	nc	70.000	71.535	2.193

Saturation Characteristics

Circuit Simulation result

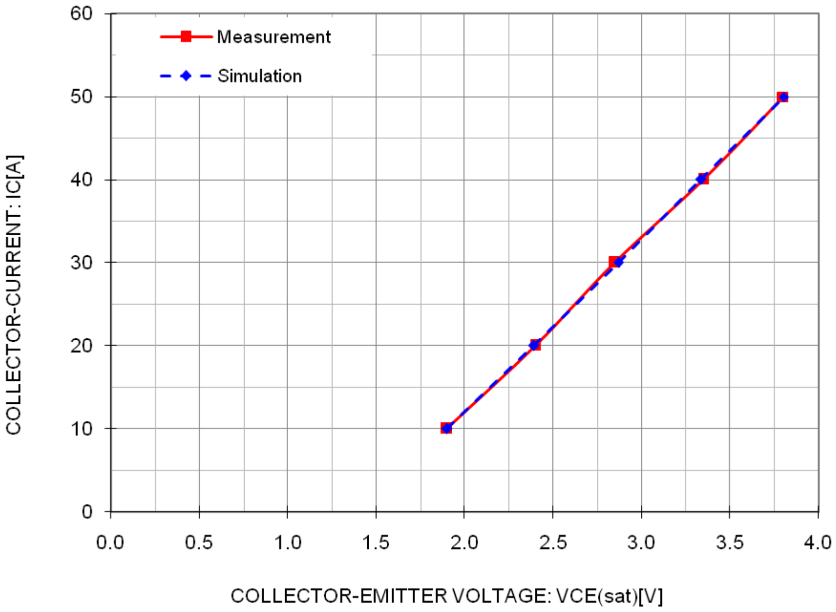


Evaluation circuit



Comparison Graph

Simulation result



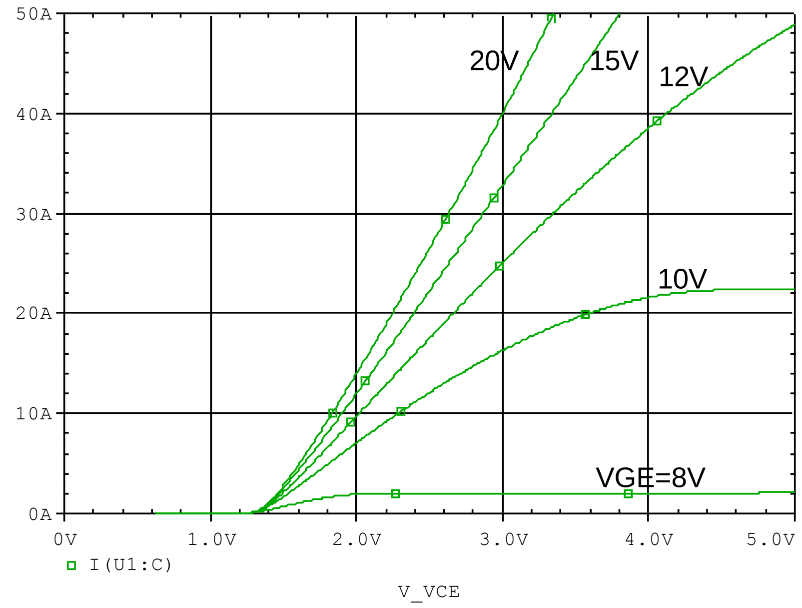
Comparison table

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

Ic(A)	VCE (V)		%Error
	Measurement	Simulation	
10.0	1.900	1.901	0.06
20.0	2.400	2.392	-0.35
30.0	2.850	2.868	0.61
40.0	3.350	3.337	-0.40
50.0	3.800	3.804	0.10

Output Characteristics

Circuit Simulation result



Evaluation circuit