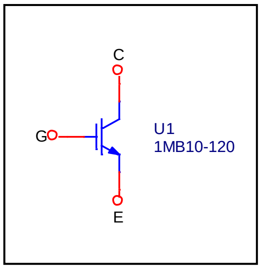
Device Modeling Report

COMPONENTS: Insulated Gate Bipolar Transistor (IGBT)
PART NUMBER: 1MB10-120
MANUFACTURER: FUJI ELECTRIC

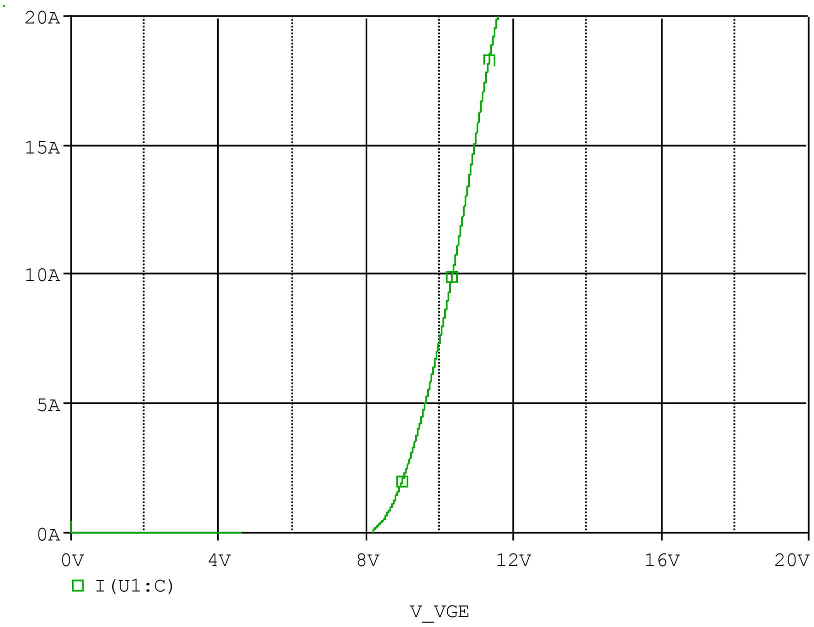
Bee Technologies Inc.

Circuit Configuration

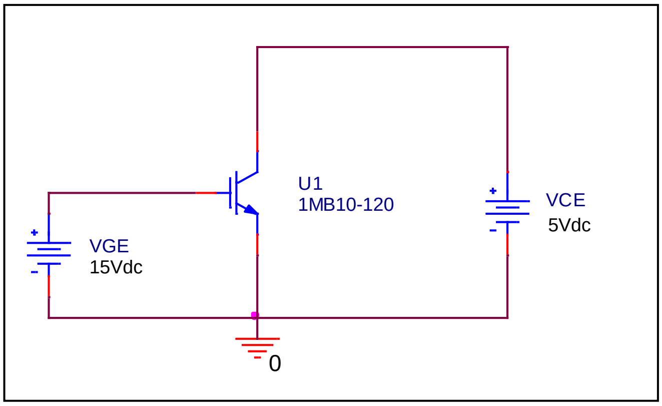


Transfer Characteristics

Circuit Simulation result

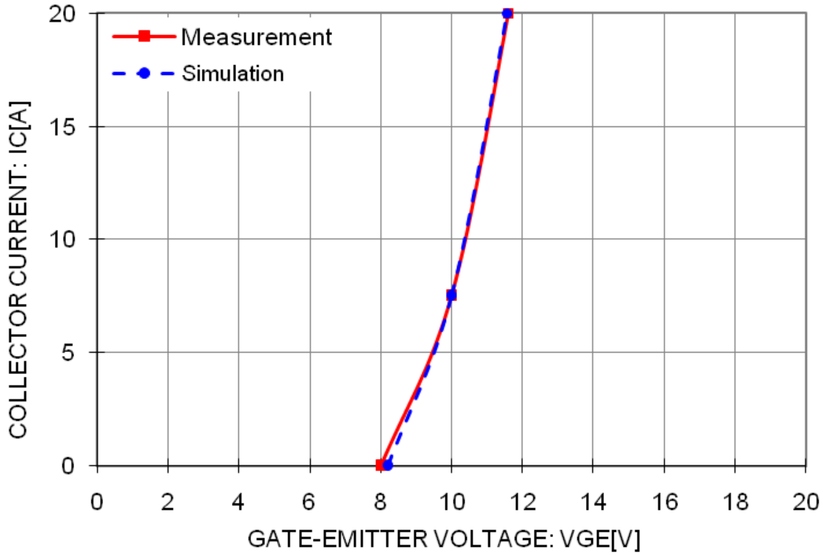


Evaluation circuit



Comparison Graph

Simulation result



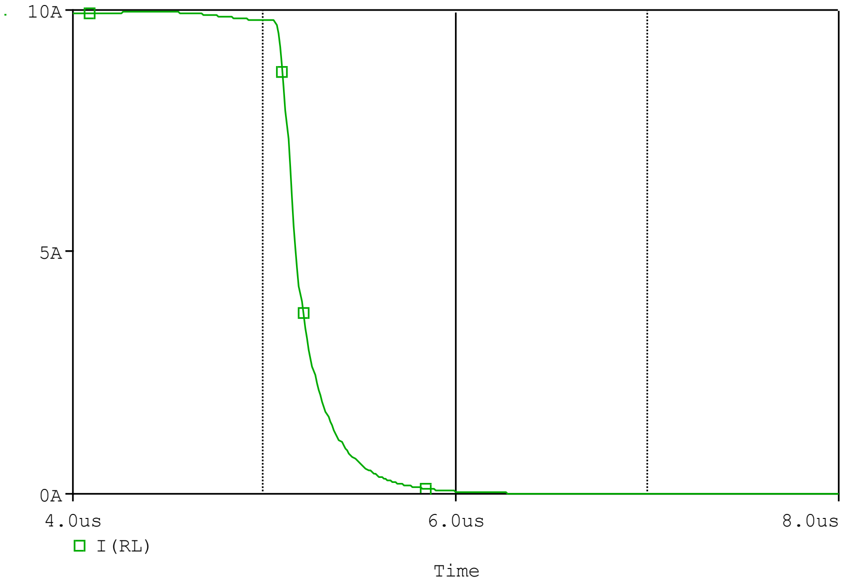
Comparison table

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

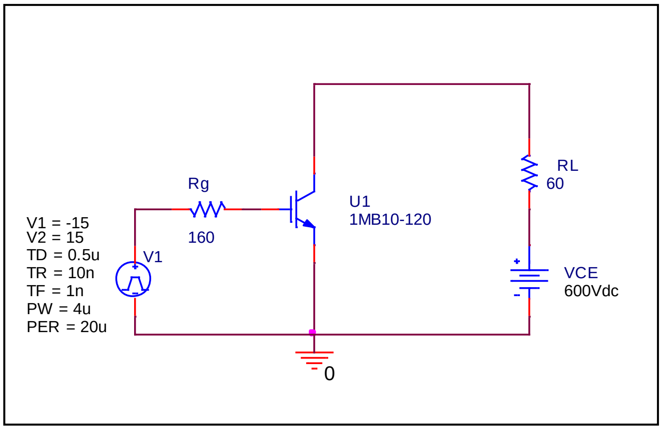
IC (A)	VGE (V)		%Error
	Measurement	Simulation	
0.000	8.000	8.194	2.43
7.500	10.000	10.000	0.00
20.000	11.600	11.567	-0.28

Fall Time Characteristics

Circuit Simulation result



Evaluation circuit

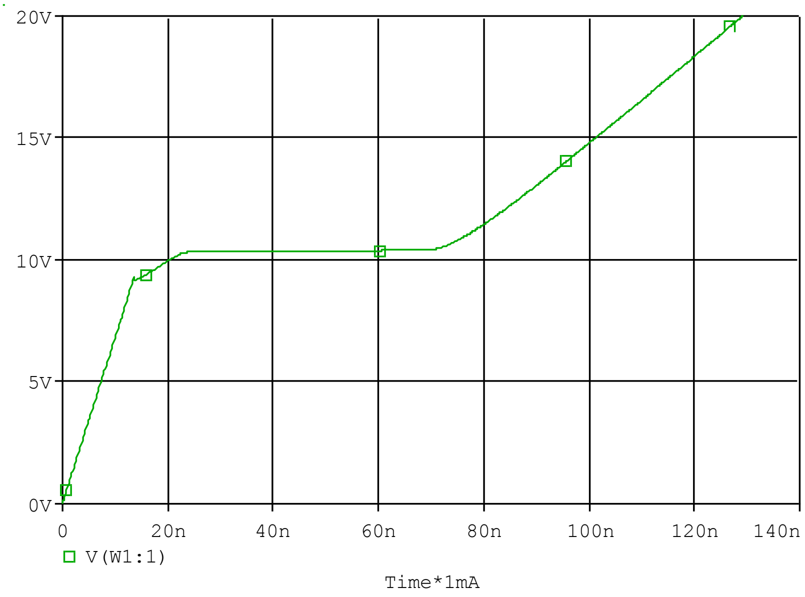


Test condition: IC=10 (A), VCC=600 (V)

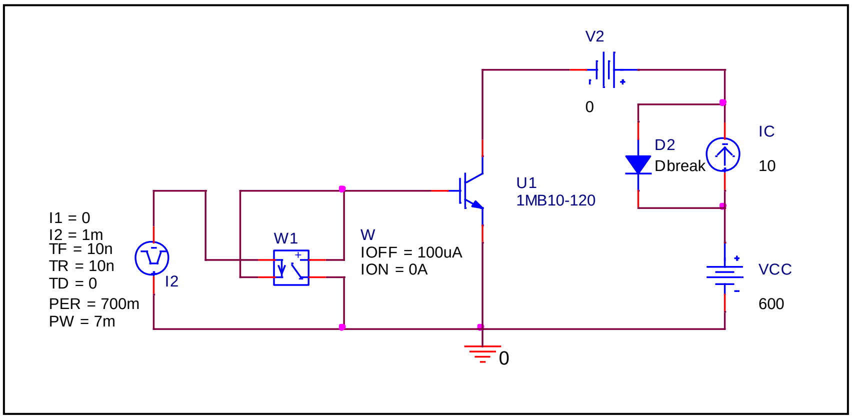
Parameter	Unit	Measurement	Simulation	%Error
tf	us	0.320	0.323	0.94

Gate Charge Characteristics

Circuit Simulation result



Evaluation circuit

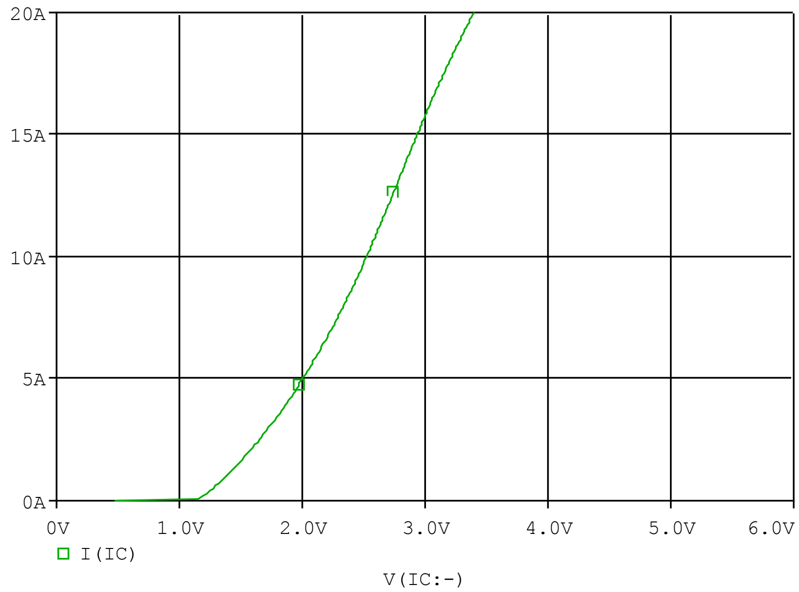


Test condition: V_{CC}=600 (V), I_C=10 (A), V_{GE}=15 (V)

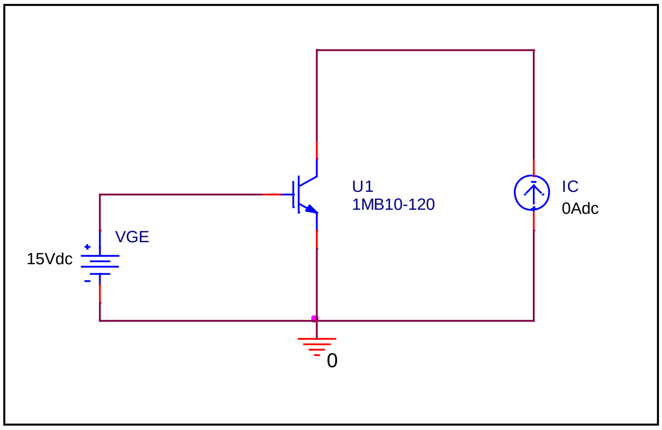
Parameter	Unit	Measurement	Simulation	%Error
Qge	nc	18.000	18.171	0.95
Qgc	nc	53.000	52.317	-1.29
Qg	nc	100.000	101.471	1.47

Saturation Characteristics

Circuit Simulation result

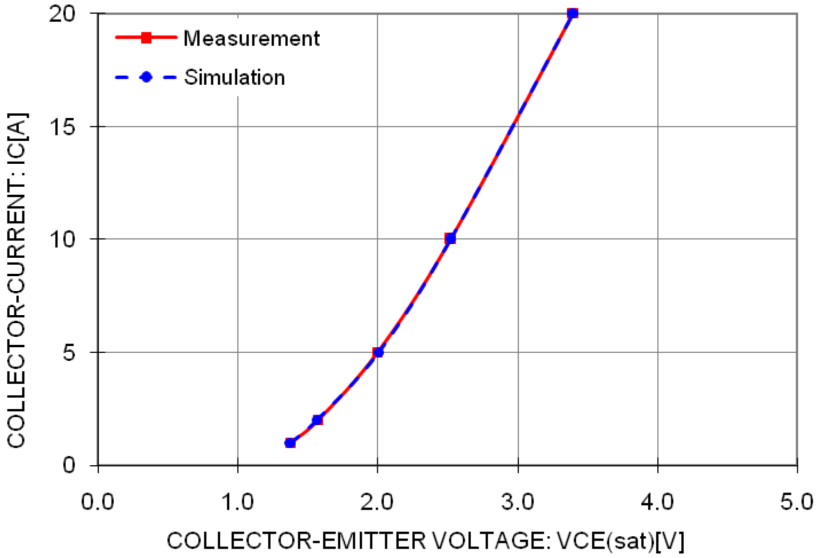


Evaluation circuit



Comparison Graph

Simulation result



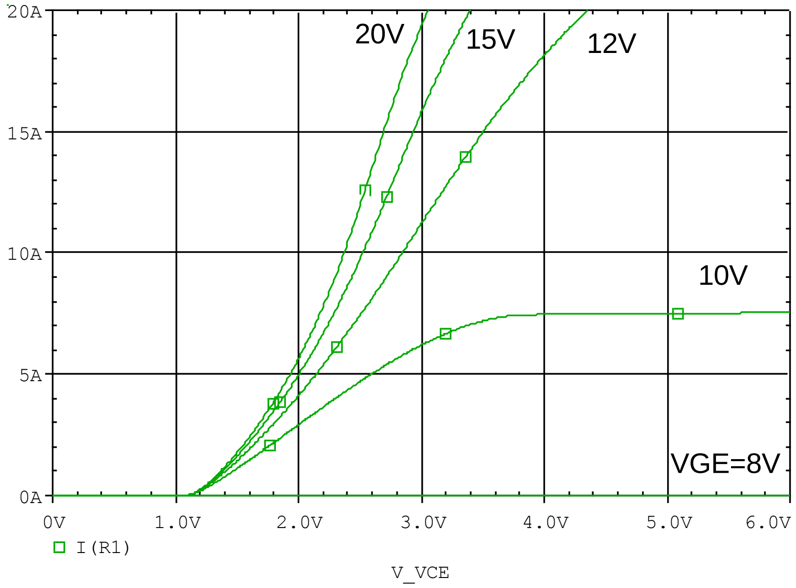
Comparison table

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

Ic(A)	VCE (V)		%Error
	Measurement	Simulation	
1	1.375	1.381	0.44
2	1.575	1.566	-0.60
5	2.000	2.005	0.23
10	2.525	2.524	-0.04
20	3.400	3.400	0.00

Output Characteristics

Circuit Simulation result



Evaluation circuit