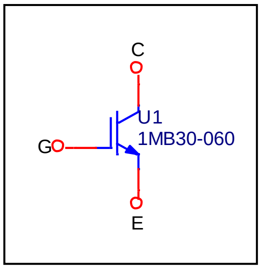
Device Modeling Report

COMPONENTS: Insulated Gate Bipolar Transistor (IGBT)
PART NUMBER: 1MB30-060
MANUFACTURER: Fuji Electric

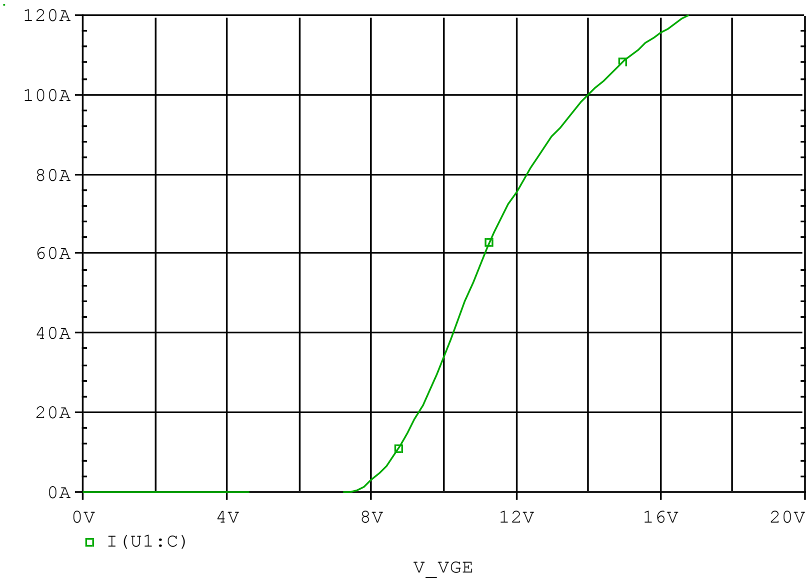
Bee Technologies Inc.

Circuit Configuration

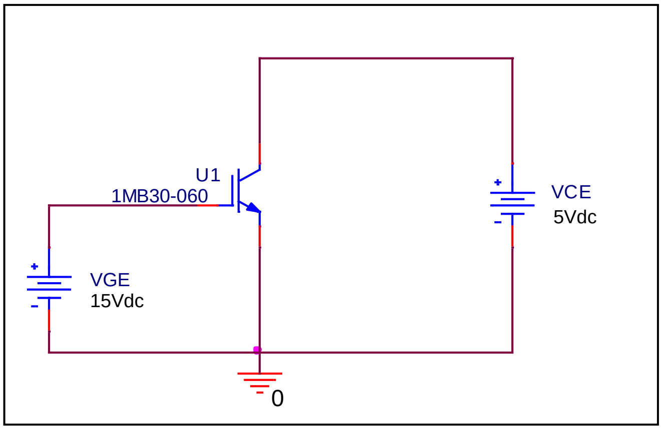


Transfer Characteristics

Circuit Simulation result

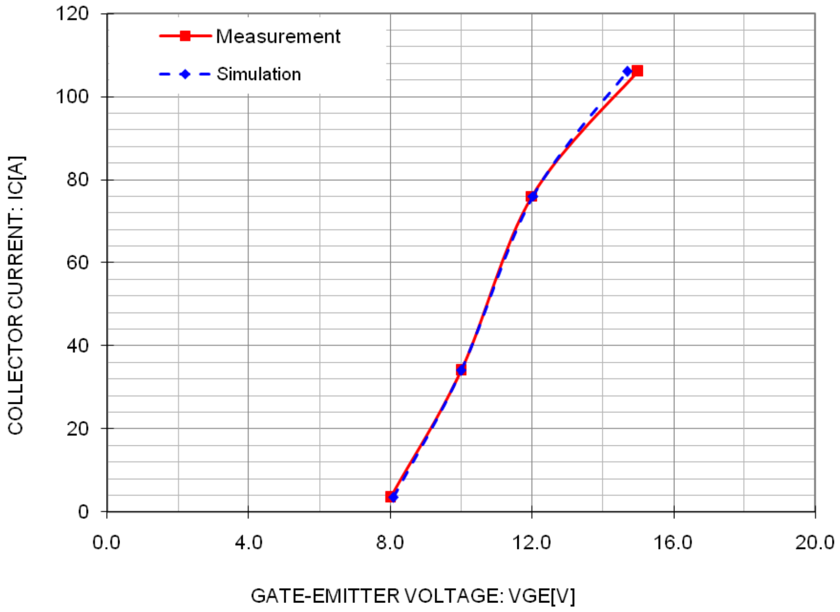


Evaluation circuit



Comparison Graph

Simulation result



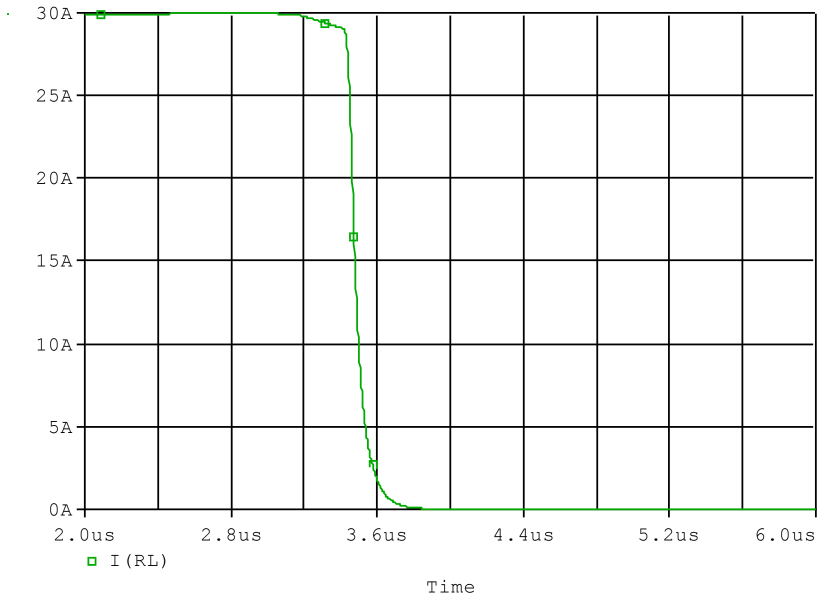
Comparison table

Test condition: VCE =5 (V)

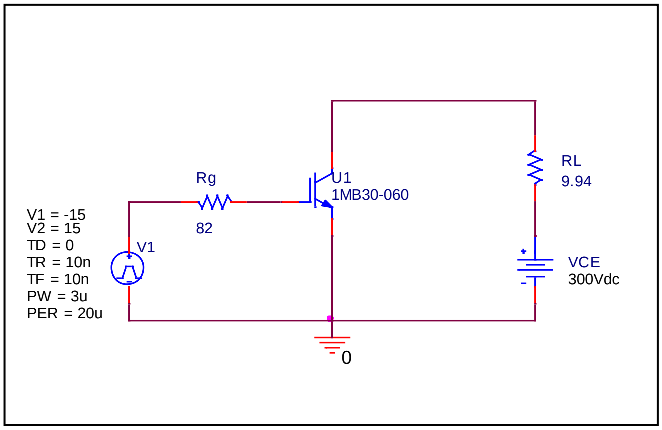
IC (A)	VGE (V)		%Error
	Measurement	Simulation	
3.500	8.000	8.075	0.93
34.000	10.000	9.995	-0.05
76.000	12.000	12.027	0.22
106.000	15.000	14.693	-2.05

Fall Time Characteristics

Circuit Simulation result



Evaluation circuit

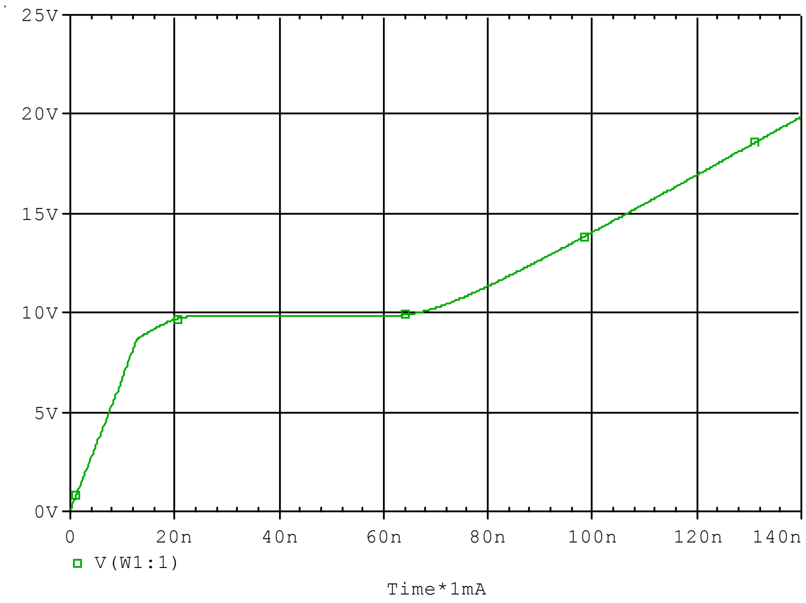


Test condition: IC=30 (A), VCC=300 (V)

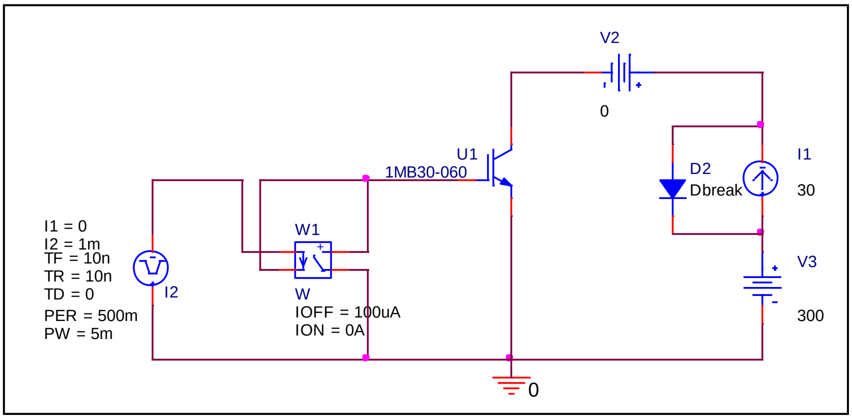
Parameter	Unit	Measurement	Simulation	%Error
tf	us	0.125	0.126	0.456

Gate Charge Characteristics

Circuit Simulation result



Evaluation circuit

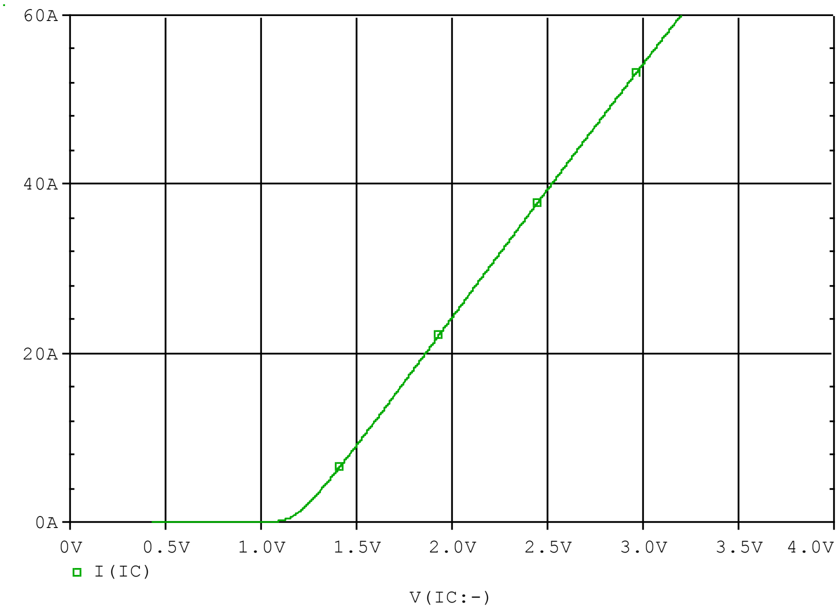


Test condition: VCC=300 (V), IC=30 (A), VGE=15 (V)

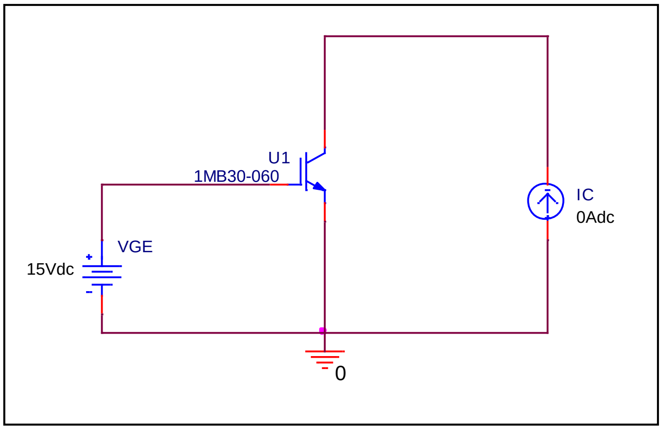
Parameter	Unit	Measurement	Simulation	%Error
Qge	nc	16.000	15.976	-0.150
Qgc	nc	52.000	51.707	-0.563
Qg	nc	106.000	106.636	0.600

Saturation Characteristics

Circuit Simulation result

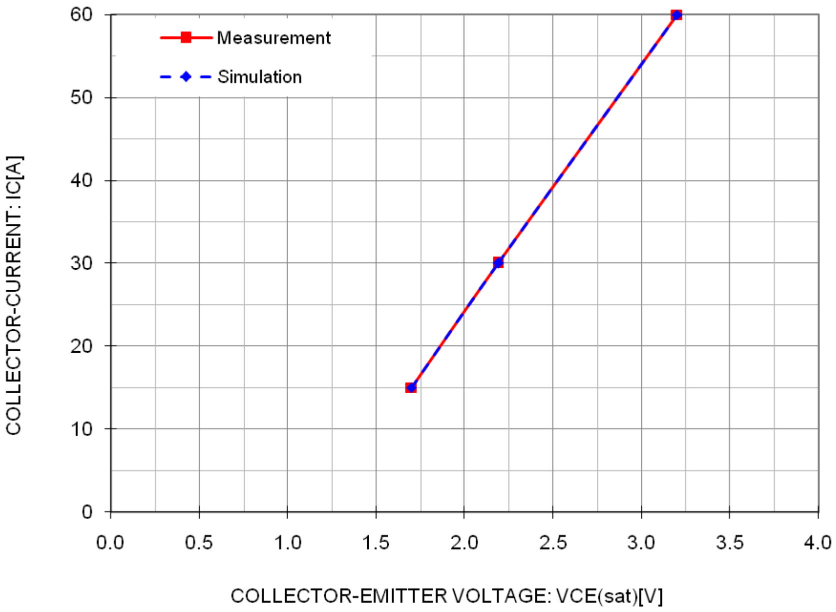


Evaluation circuit



Comparison Graph

Simulation result



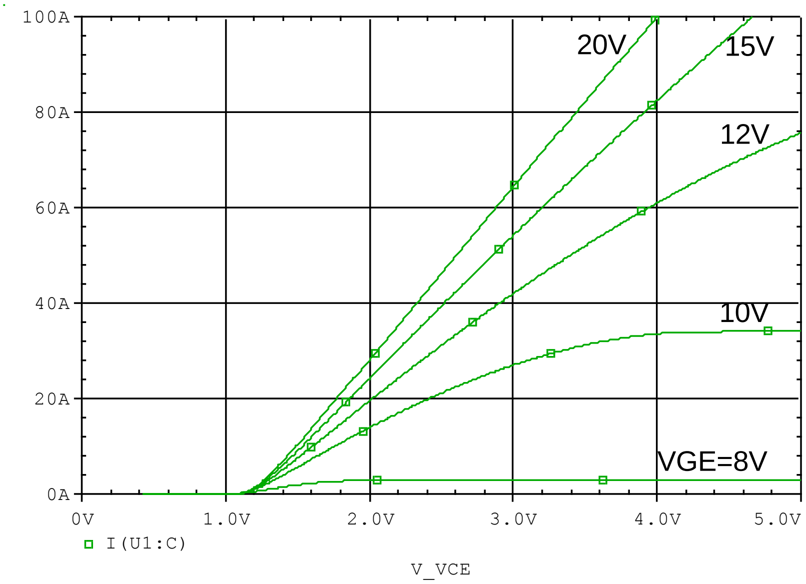
Comparison table

Test condition: VGE =15 (V)

Ic(A)	VCE (V)		%Error
	Measurement	Simulation	
15.0	1.700	1.699	-0.06
30.0	2.190	2.191	0.05
60.0	3.200	3.200	0.00

Output Characteristics

Circuit Simulation result



Evaluation circuit