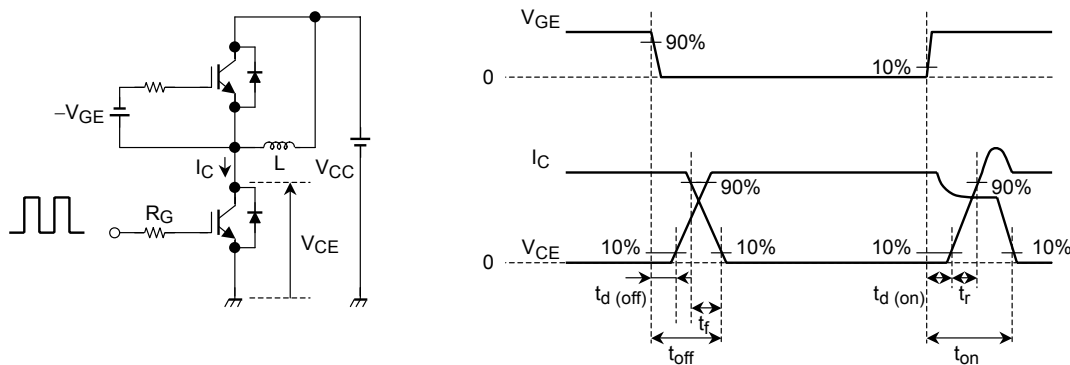


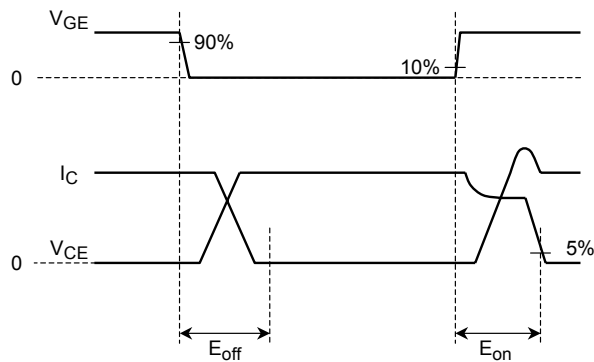
Electrical Characteristics (Ta = 25°C)

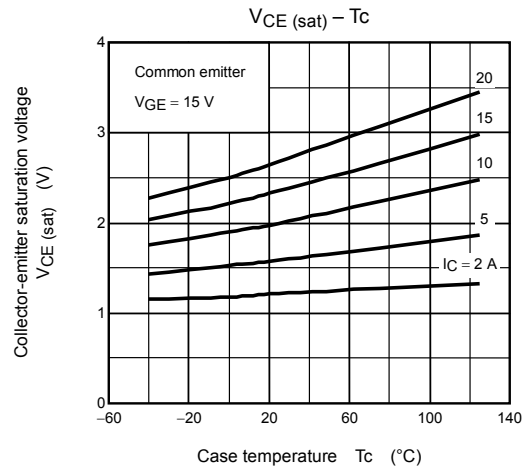
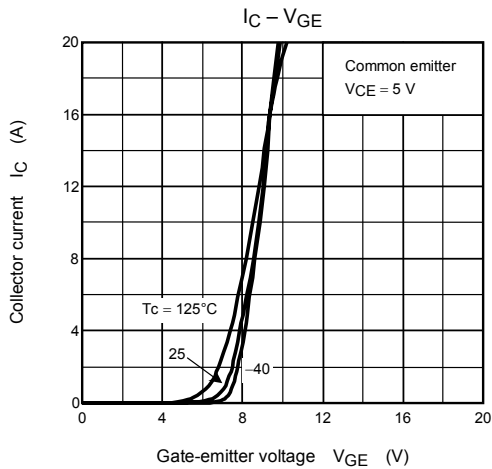
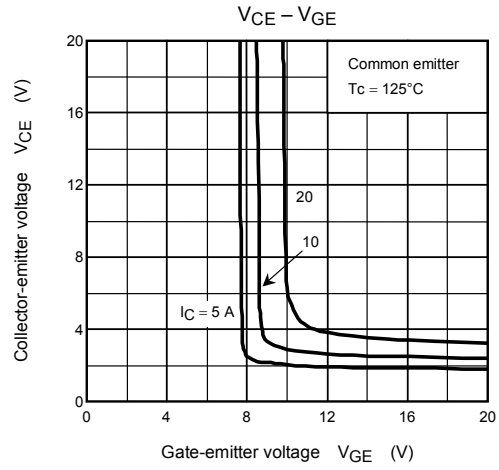
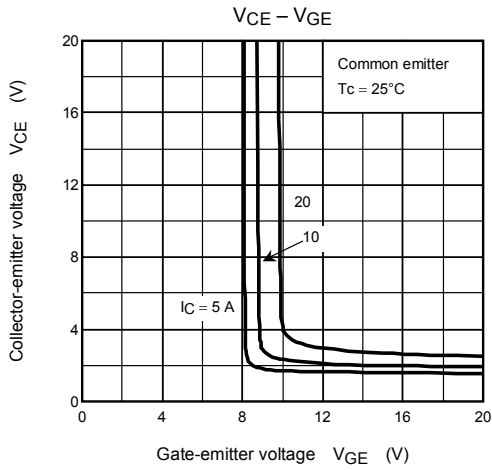
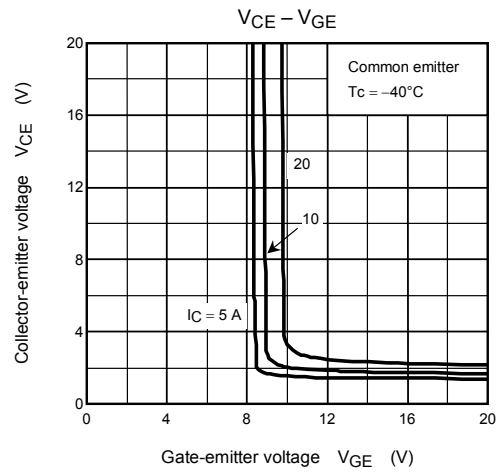
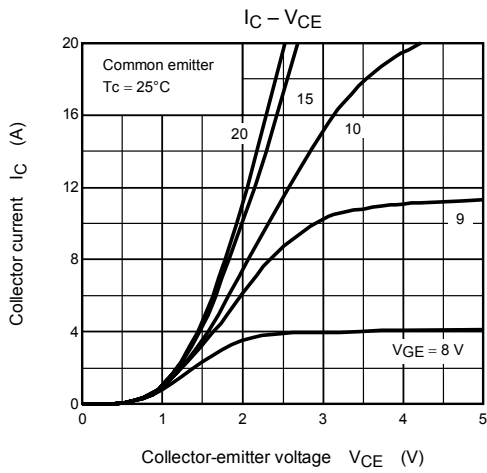
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GES}	$V_{GE} = \pm 25\text{ V}, V_{CE} = 0$	—	—	± 500	nA
Collector cut-off current		I_{CES}	$V_{CE} = 600\text{ V}, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage		$V_{GE(OFF)}$	$I_C = 1\text{ mA}, V_{CE} = 5\text{ V}$	3.5	—	6.5	V
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 10\text{ A}, V_{GE} = 15\text{ V}$	—	2.0	2.45	V
Input capacitance		C_{ies}	$V_{CE} = 10\text{ V}, V_{GE} = 0, f = 1\text{ MHz}$	—	1550	—	pF
Switching time	Turn-on delay time	$t_d(on)$	Inductive load $V_{CC} = 300\text{ V}, I_C = 10\text{ A}$ $V_{GG} = +15\text{ V}, R_G = 68\ \Omega$	—	0.06	—	μs
	Rise time	t_r		—	0.03	—	
	Turn-on time	t_{on}		—	0.17	—	
	Turn-off delay time	$t_d(off)$		—	0.24	—	
	Fall time	t_f		—	0.03	—	
	Turn-off time	t_{off}		—	0.30	—	
Switching loss	Turn-on switching loss	E_{on}	(Note 1)	—	0.26	—	mJ
	Turn-off switching loss	E_{off}	(Note 2)	—	0.18	—	
Peak forward voltage		V_F	$I_F = 10\text{ A}, V_{GE} = 0$	—	—	2.0	V
Reverse recovery time		t_{rr}	$I_F = 10\text{ A}, di/dt = -100\text{ A}/\mu\text{s}$	—	100	—	ns

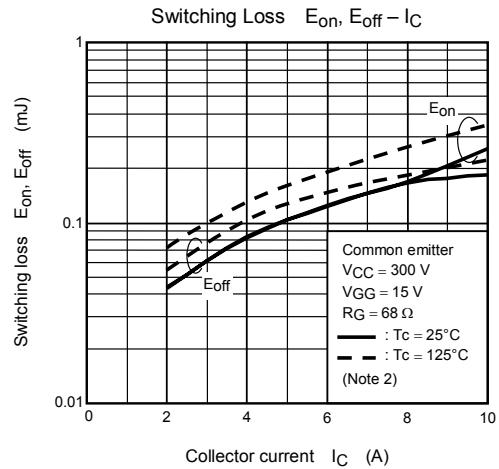
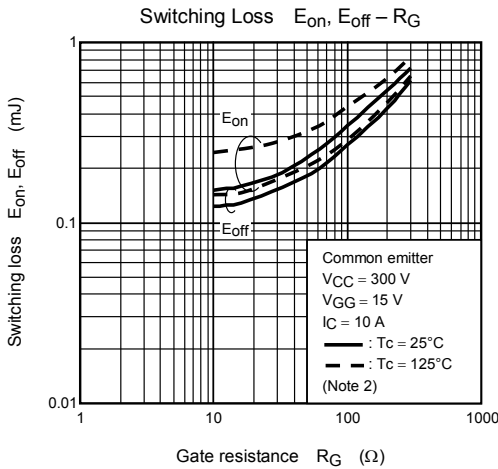
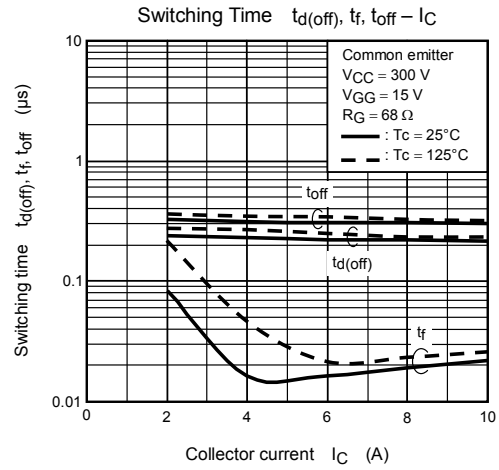
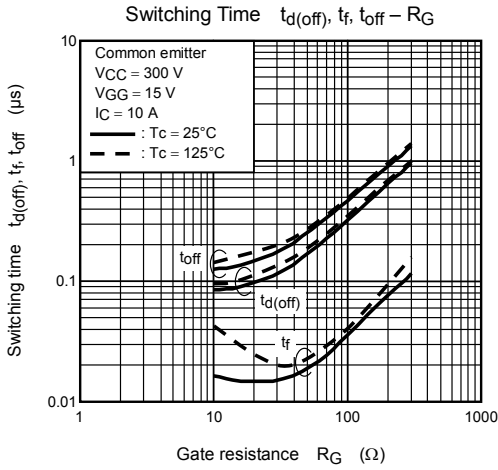
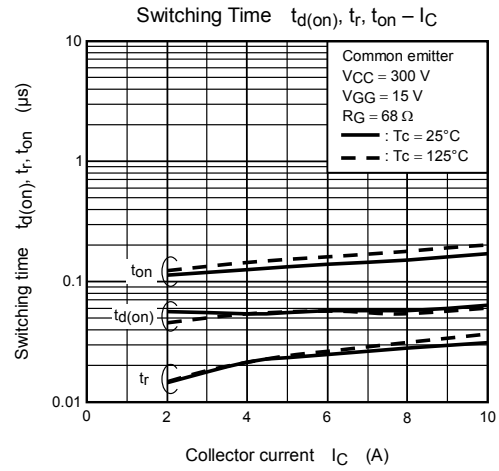
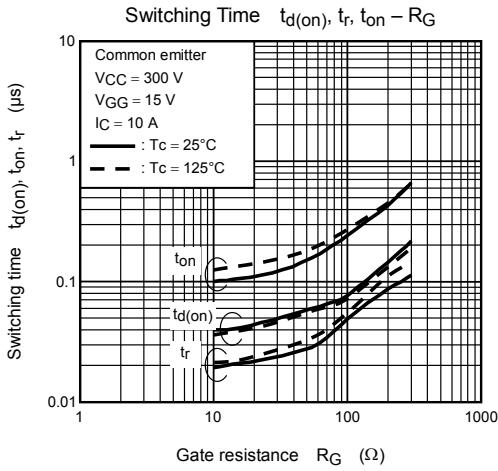
Note 1: Switching time measurement circuit and input/output waveforms

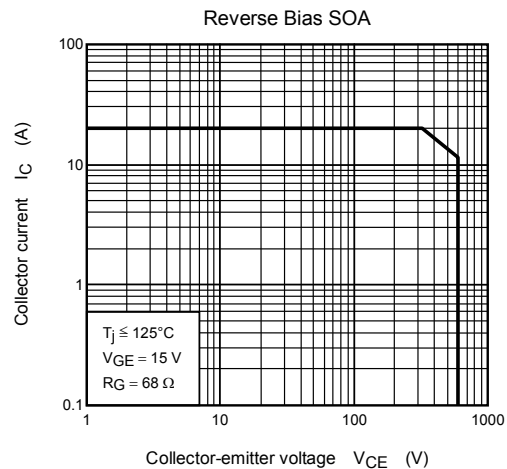
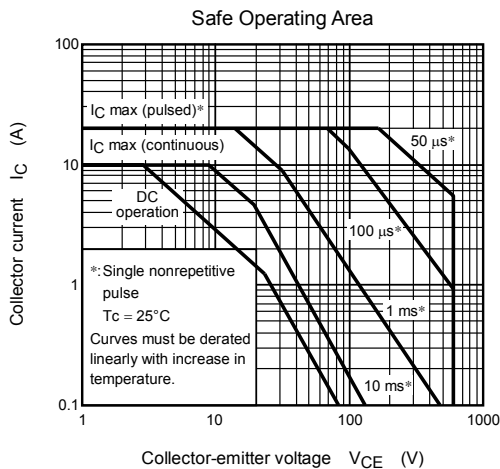
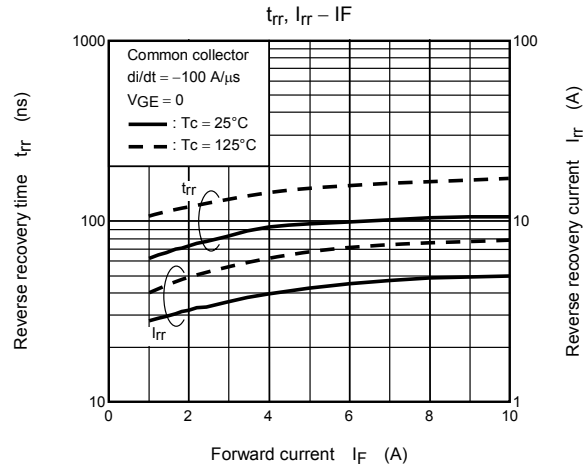
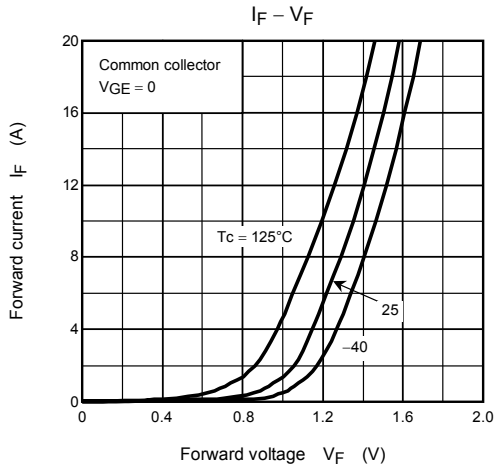
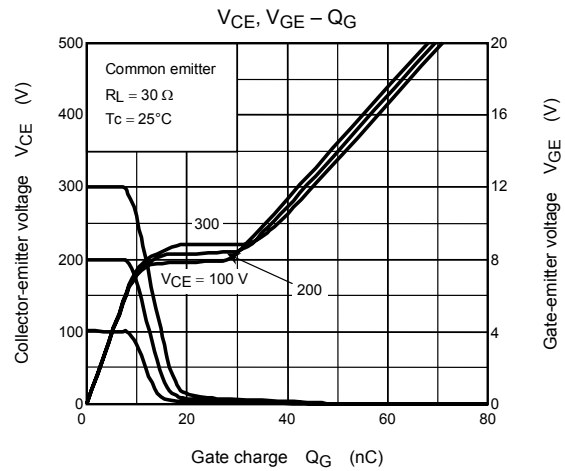
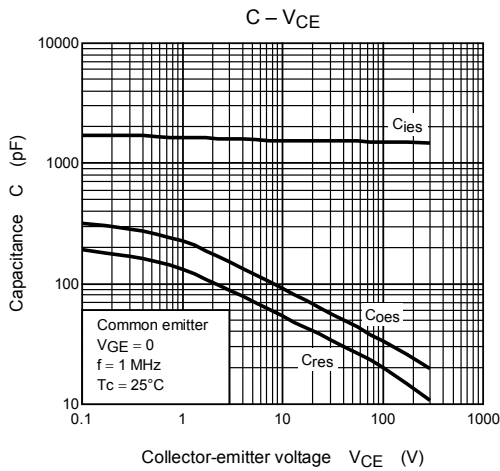


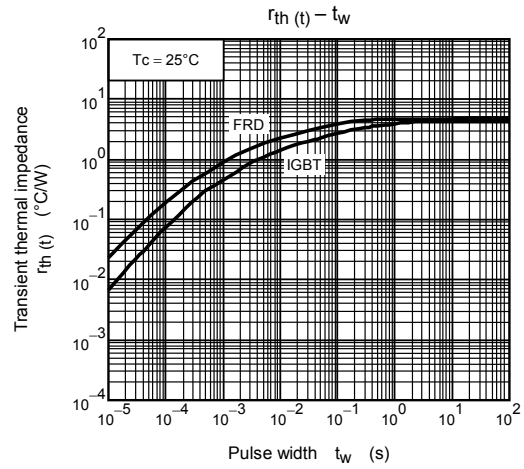
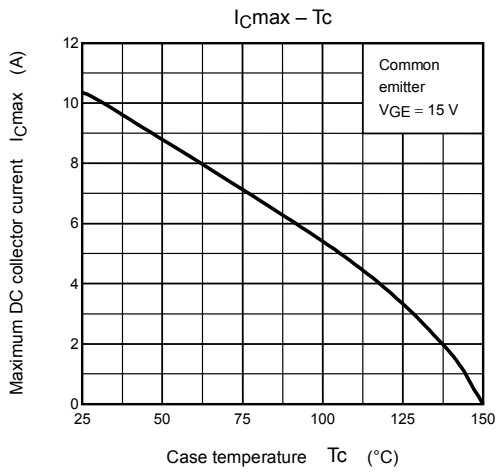
Note 2: Switching loss measurement waveforms











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