

# GT10J301

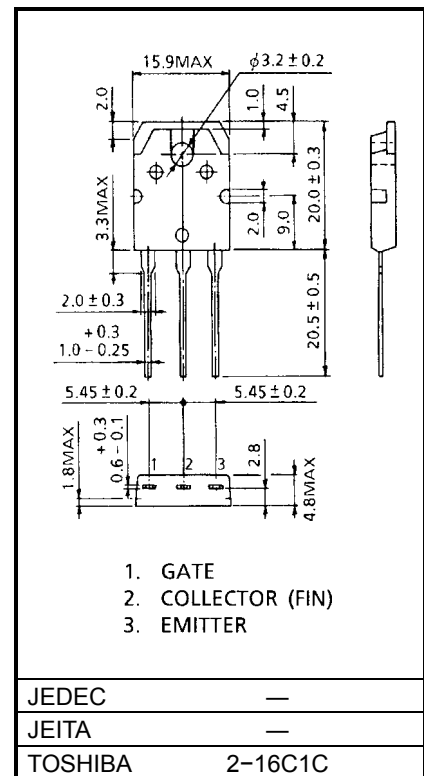
Unit: mm

HIGH POWER SWITCHING APPLICATIONS  
MOTOR CONTROL APPLICATIONS

- The 3rd Generation.
- Enhancement-Mode.
- High Speed. :  $t_f = 0.30\mu s$  (Max.)
- Low Saturation Voltage. :  $V_{CE(sat)} = 2.7V$  (Max.)
- FRD included between Emitter and Collector.

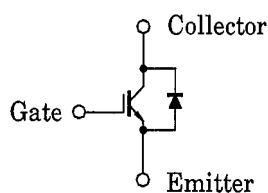
### MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		$V_{CES}$	600	V
Gate-Emitter Voltage		$V_{GES}$	$\pm 20$	V
Collector Current	DC	$I_C$	10	A
	1ms	$I_{CP}$	20	A
Emitter-Collector Forward Current	DC	$I_F$	10	A
	1ms	$I_{FM}$	20	A
Collector Power Dissipation (Tc = 25°C)		$P_C$	90	W
Junction Temperature		$T_j$	150	°C
Storage Temperature Range		$T_{stg}$	-55~150	°C



Weight: 4.6 g

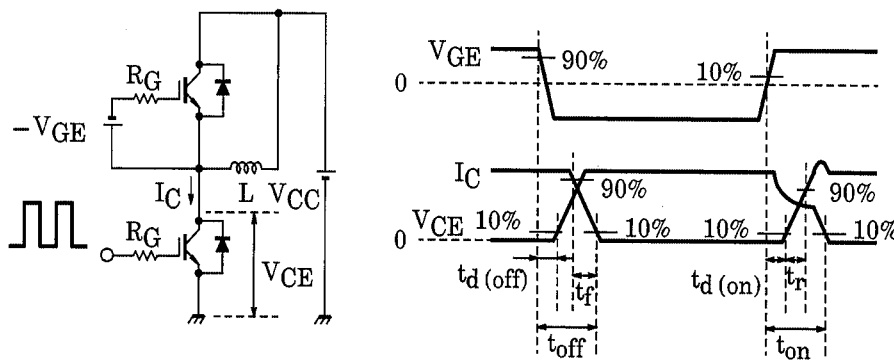
### EQUIVALENT CIRCUIT



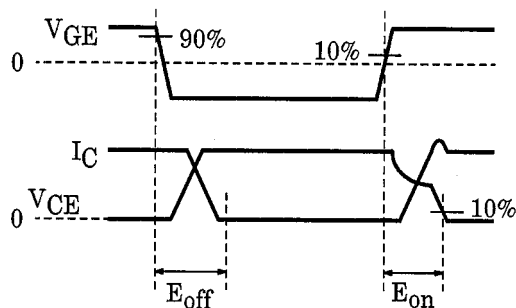
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

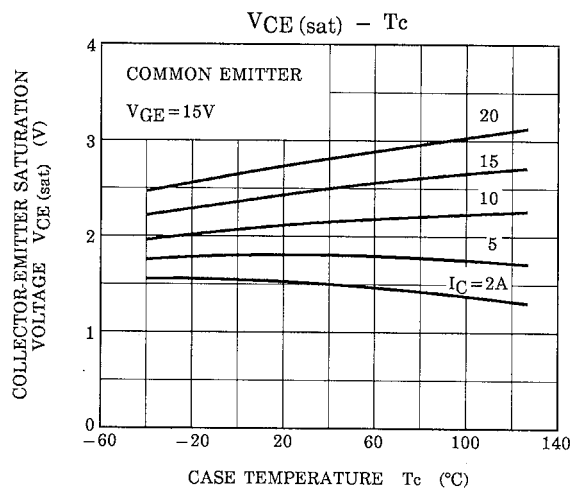
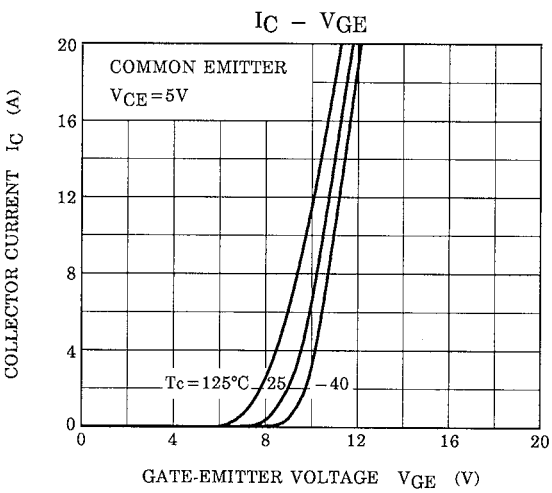
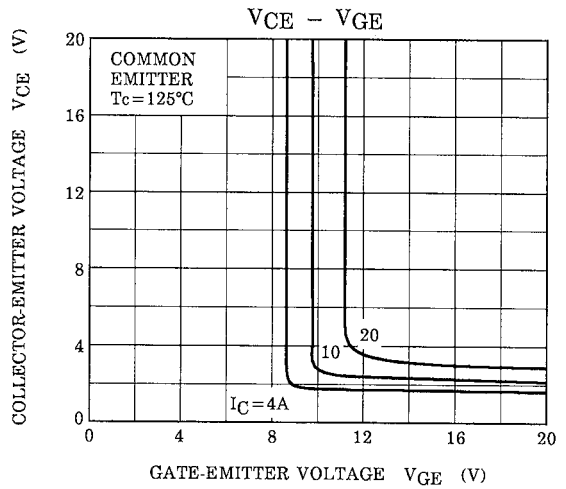
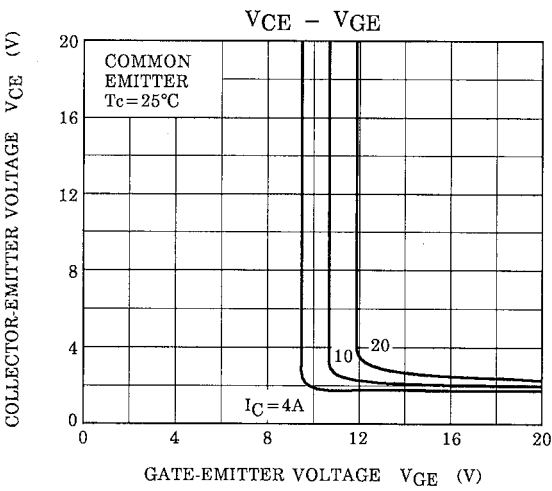
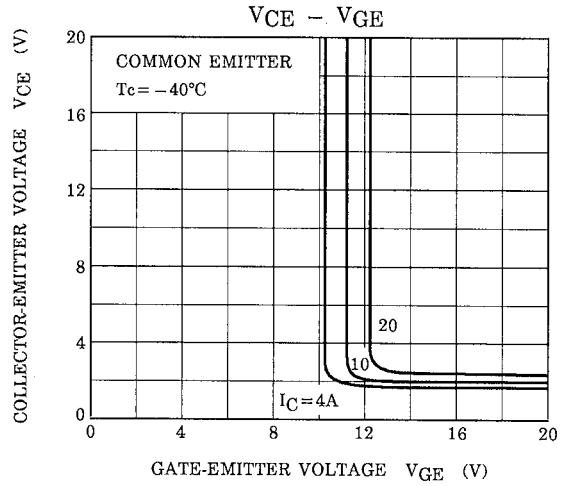
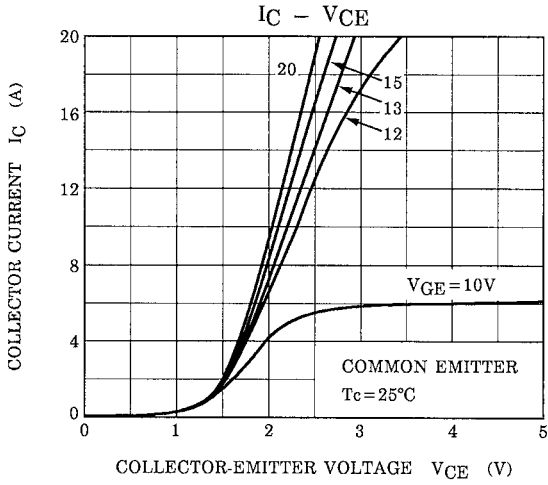
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Gate Leakage Current		$I_{GES}$	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	$\pm 500$	nA
Collector Cut-Off Current		$I_{CES}$	$V_{CE} = 600V, V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-Off Voltage		$V_{GE(OFF)}$	$I_C = 1mA, V_{CE} = 5V$	5.0	—	8.0	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 10A, V_{GE} = 15V$	—	2.1	2.7	V
Input Capacitance		$C_{ies}$	$V_{CE} = 20V, V_{GE} = 0, f = 1MHz$	—	720	—	pF
Switching Time	Rise Time	$t_r$	Inductive Load $V_{CC} = 300V, I_C = 10A$ $V_{GG} = \pm 15V, R_G = 100\Omega$ (Note 1)	—	0.12	—	$\mu s$
	Turn-On Time	$t_{on}$		—	0.40	—	
	Fall Time	$t_f$		—	0.15	0.30	
	Turn-Off Time	$t_{off}$		—	0.70	—	
Peak Forward Voltage		$V_F$	$I_F = 10A, V_{GE} = 0$	—	—	2.0	V
Reverse Recovery Time		$t_{rr}$	$I_F = 10A, di/dt = -100A/\mu s$	—	—	200	ns
Thermal Resistance (IGBT)		$R_{th(j-c)}$	—	—	—	1.39	°C/W
Thermal Resistance (Diode)		$R_{th(j-c)}$	—	—	—	2.91	°C/W

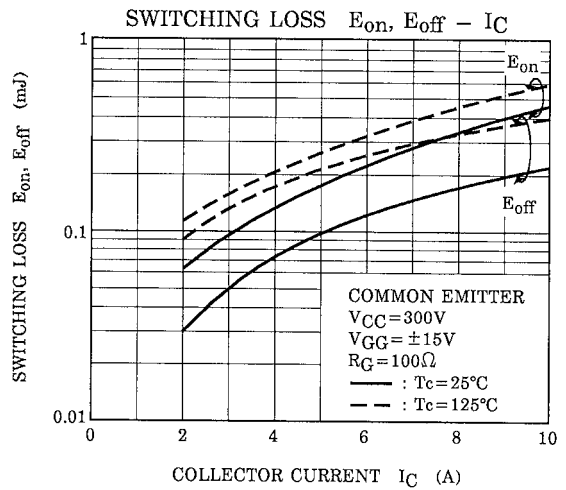
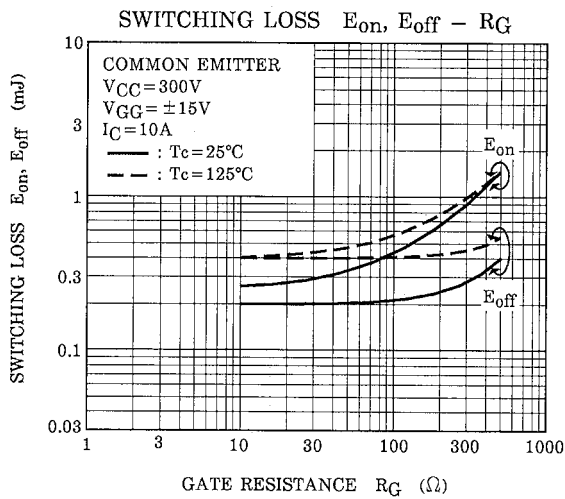
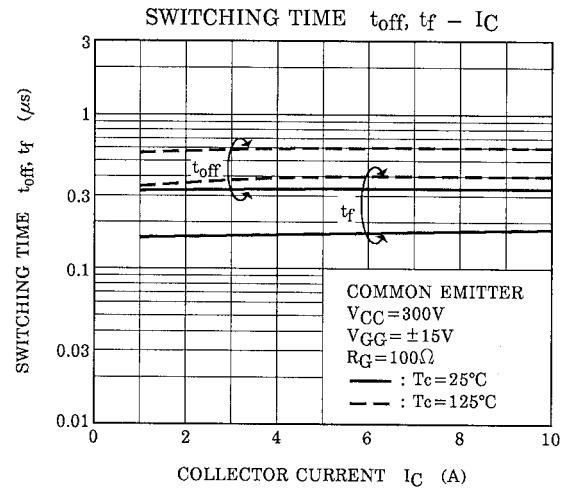
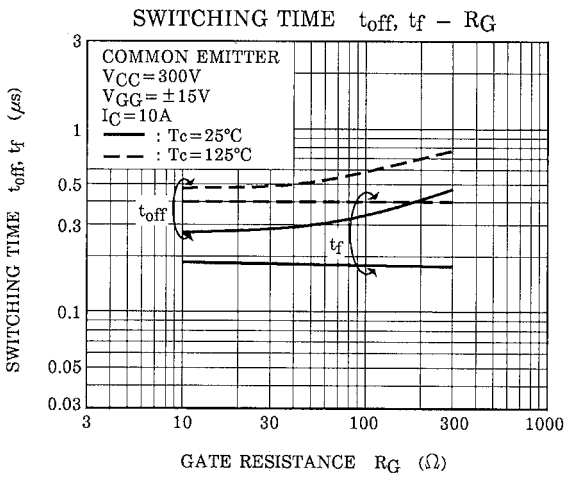
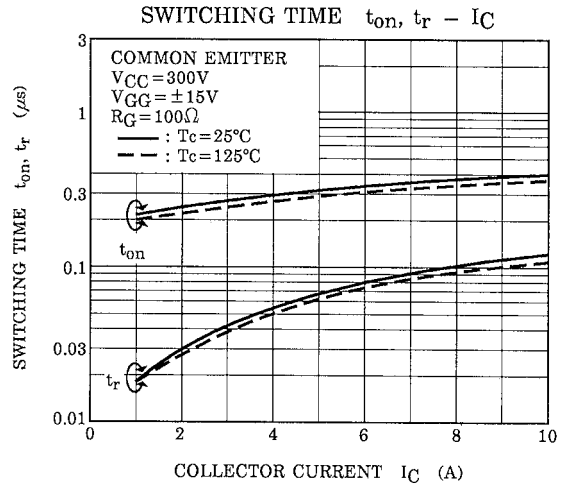
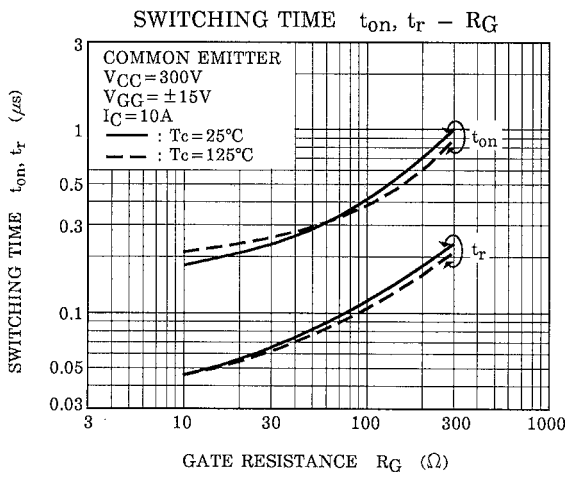
Note 1: Switching time measurement circuit and input / output waveforms

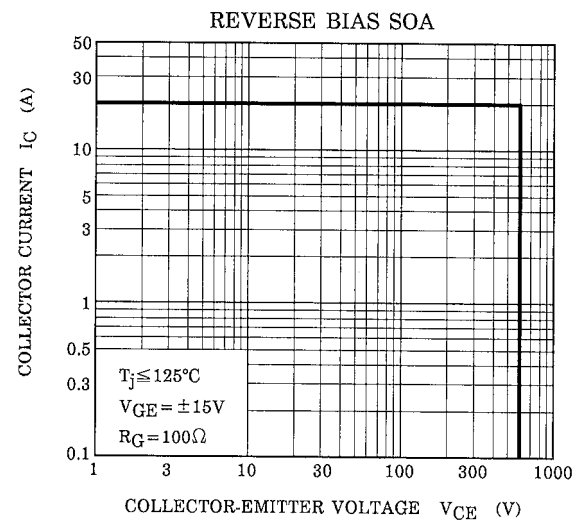
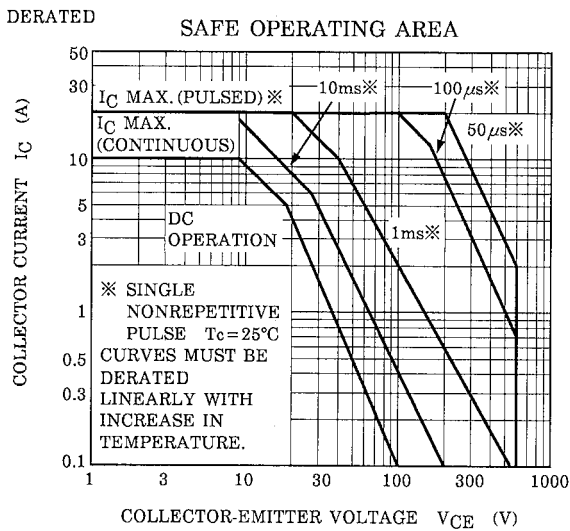
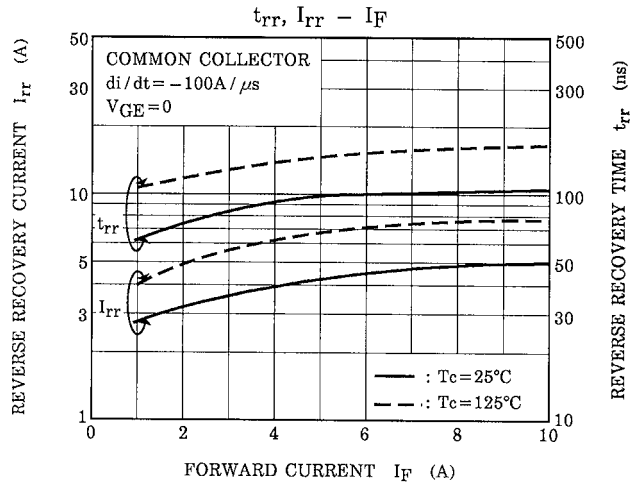
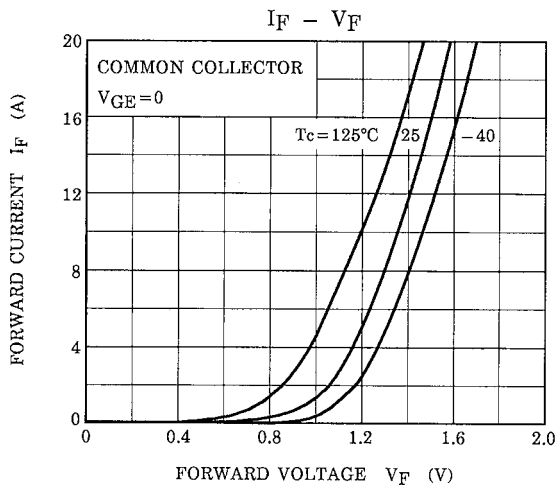
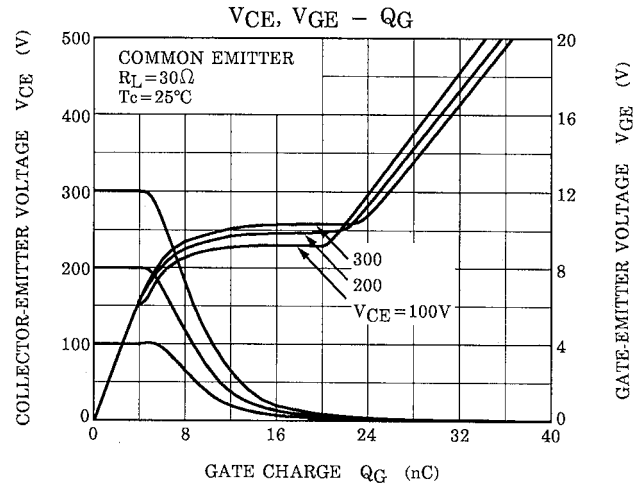
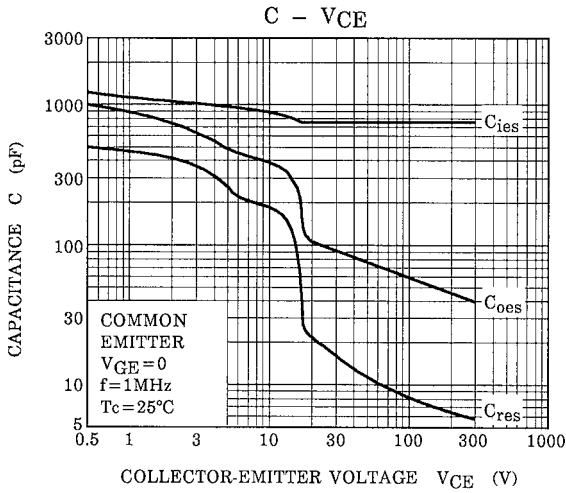


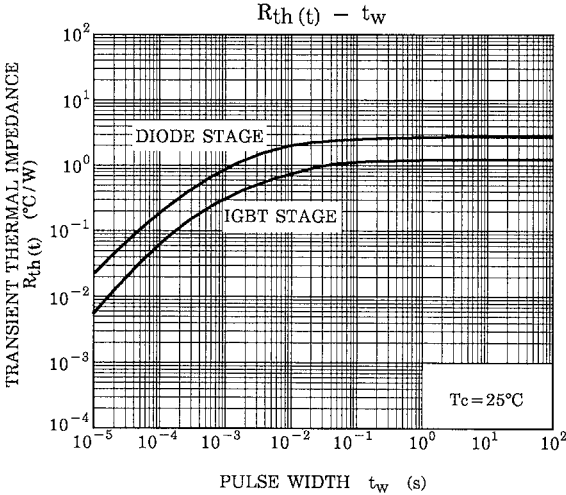
Switching time measurement waveforms











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