

### GTR Module

### Silicon N Channel IGBT

### High Power Switching Applications

### Motor Control Applications

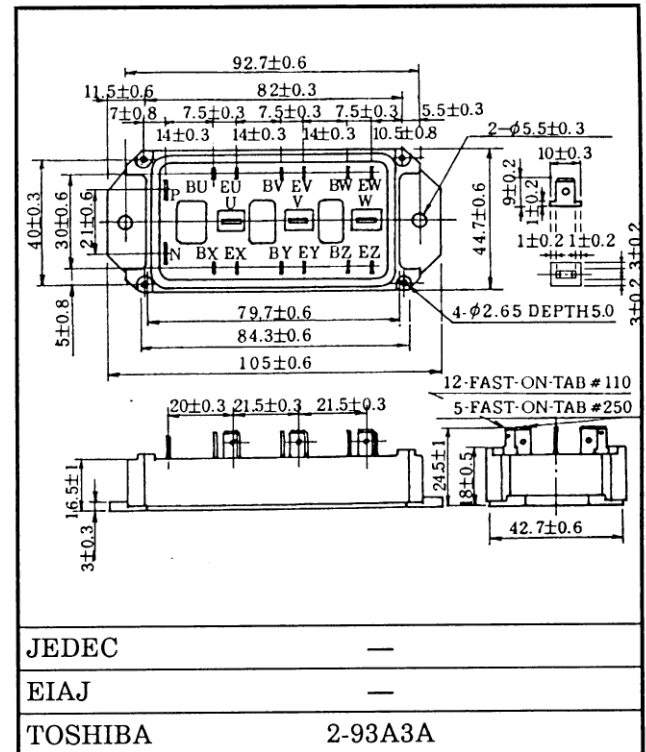
#### Features

- 6 IGBTs are built into 1 package
- High speed:  $t_f = 0.5\mu s$  (Max.)  
 $t_{rr} = 0.5\mu s$  (Max.)
- Low saturation voltage:  $V_{CE(sat)} = 4.0V$  (Max.)
- Enhancement mode
- The electrodes are isolated from case

#### Maximum Ratings ( $T_a = 25^\circ C$ )

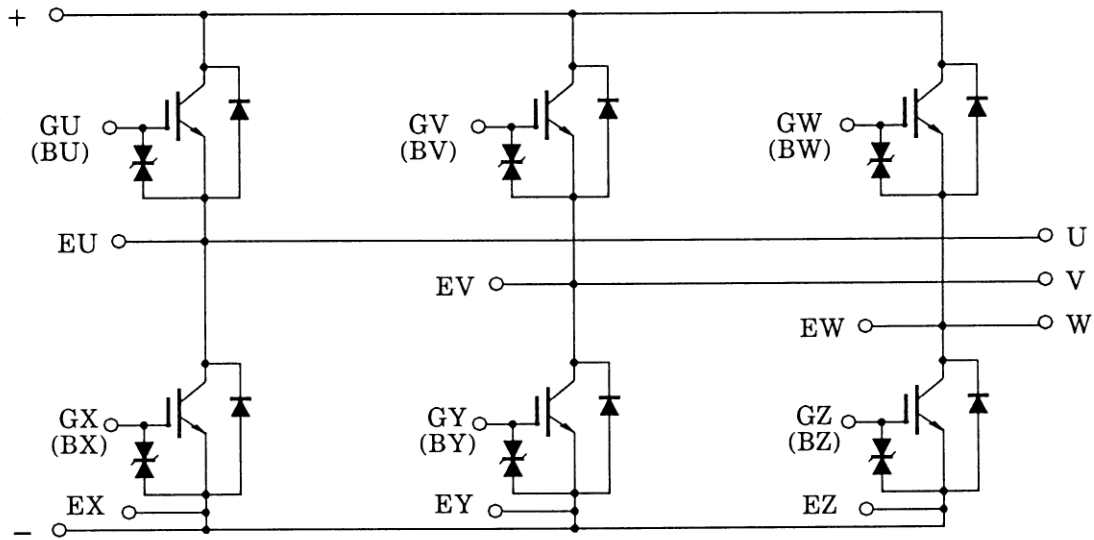
CHARACTERISTICS		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		$V_{CES}$	1200	V
Gate-Emitter Voltage		$V_{GES}$	$\pm 20$	V
Collector Current	DC	$I_C$	25	A
	1ms	$I_{CP}$	50	
Forward Current	DC	$I_F$	25	A
	1ms	$I_{FM}$	50	
Collector Power Dissipation ( $T_c = 25^\circ C$ )		$P_C$	200	W
Junction Temperature		$T_j$	150	$^\circ C$
Storage Temperature Range		$T_{stg}$	-40 ~ 125	$^\circ C$
Isolation Voltage		$V_{Isol}$	2500 (AC 1 Minute)	V
Screw Torque		—	3	N $\cdot$ m

Unit in mm



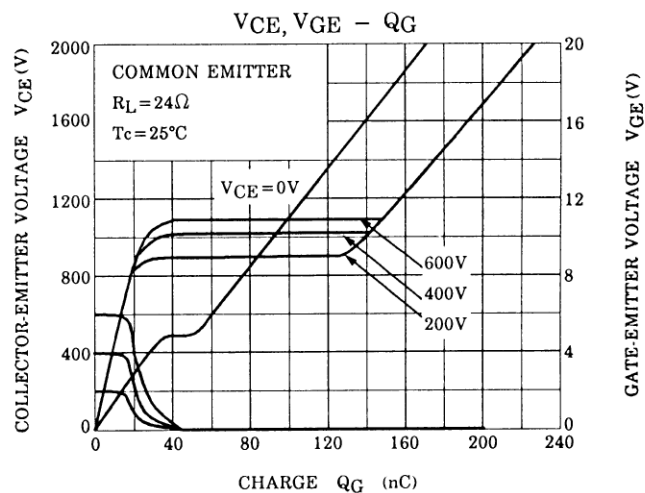
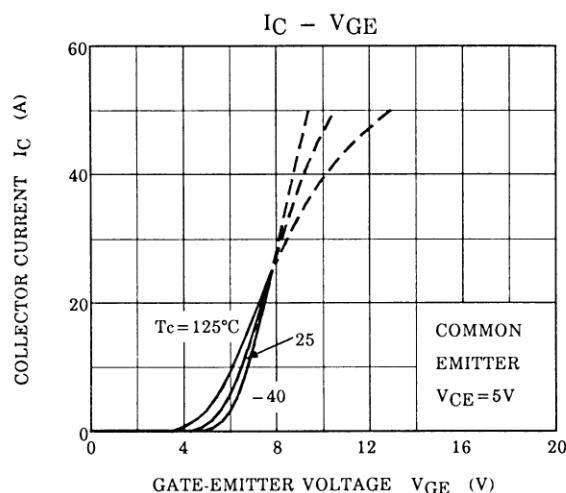
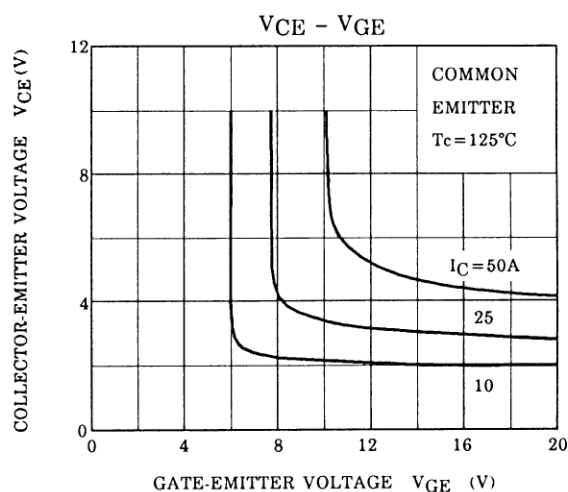
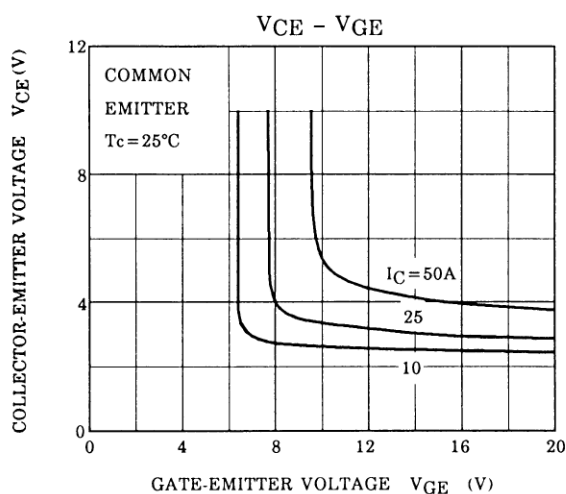
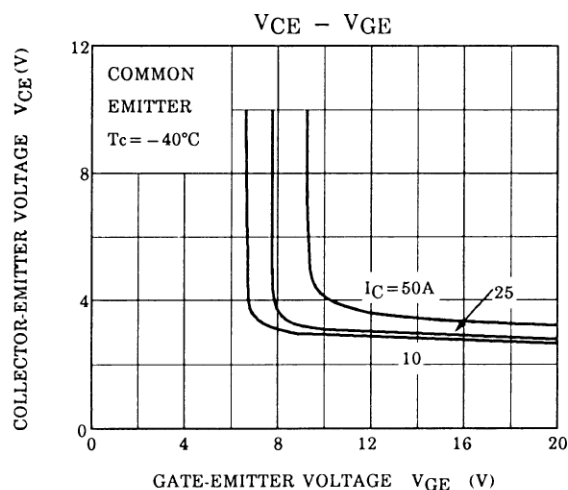
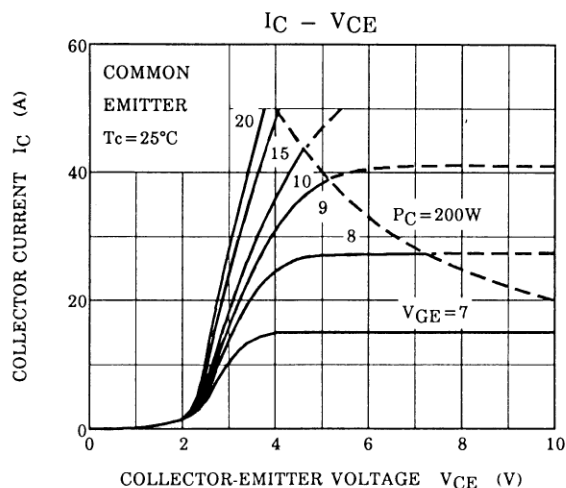
Weight : 220g

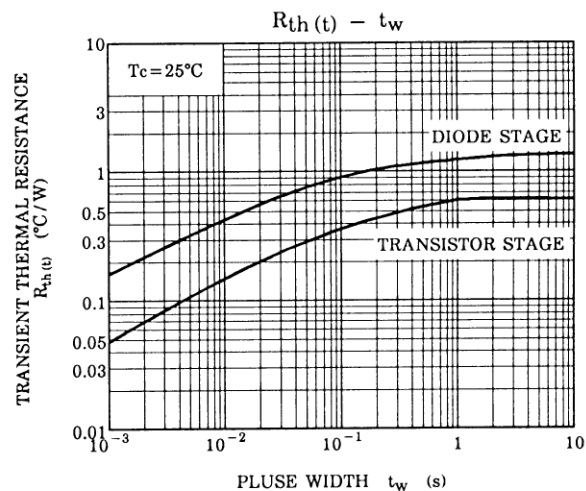
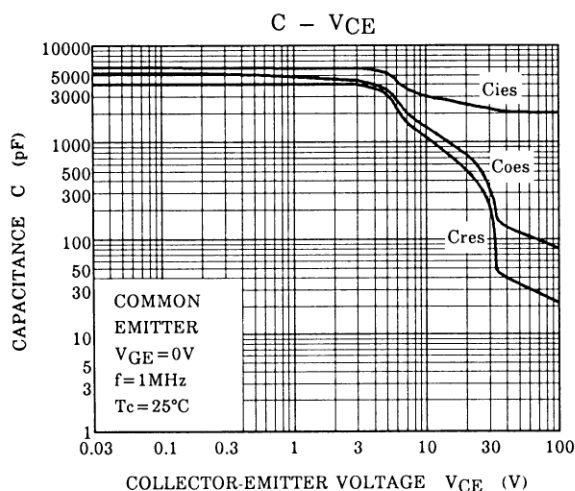
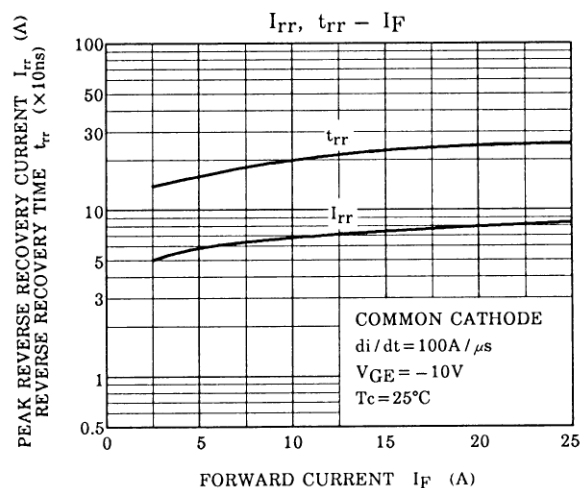
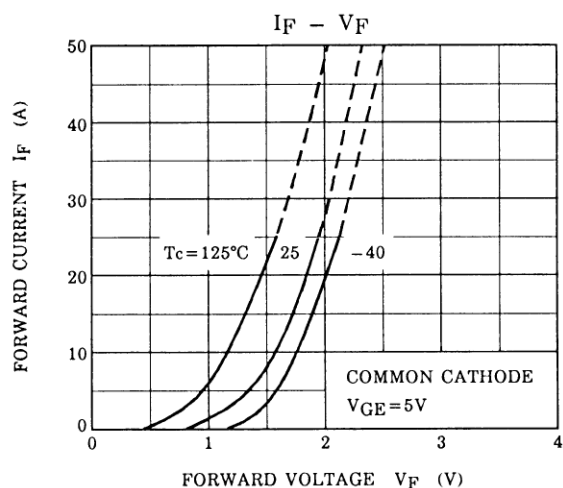
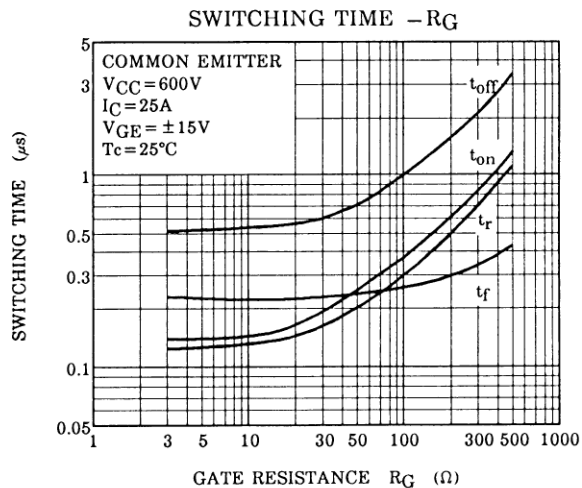
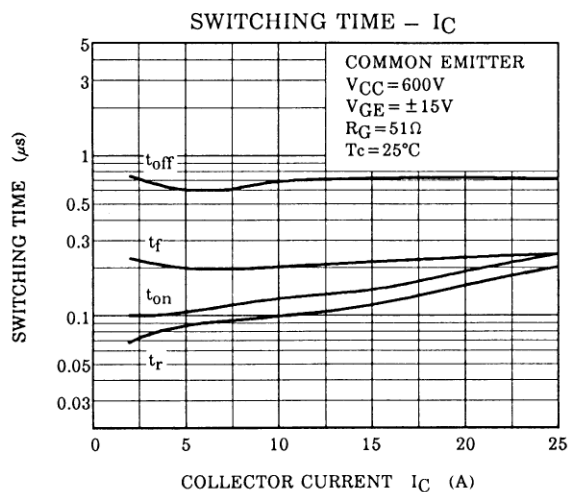
Equivalent Circuit

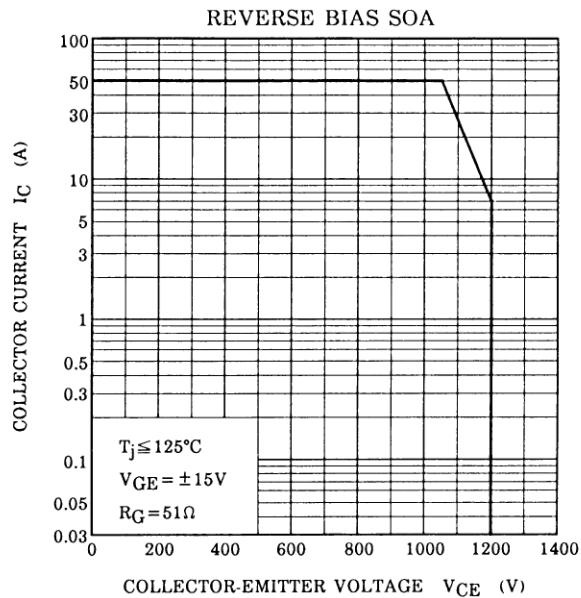
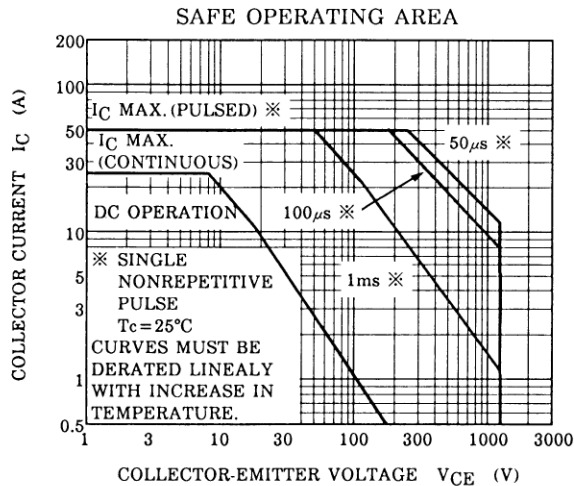


Electrical Characteristics (Ta = 25°C)

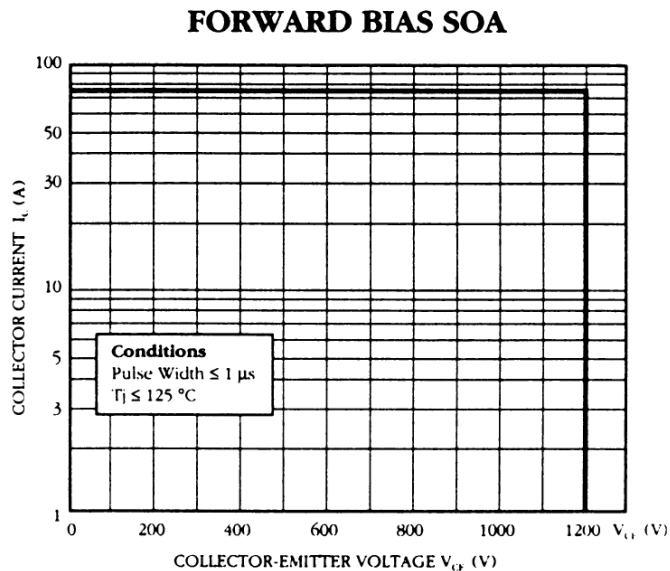
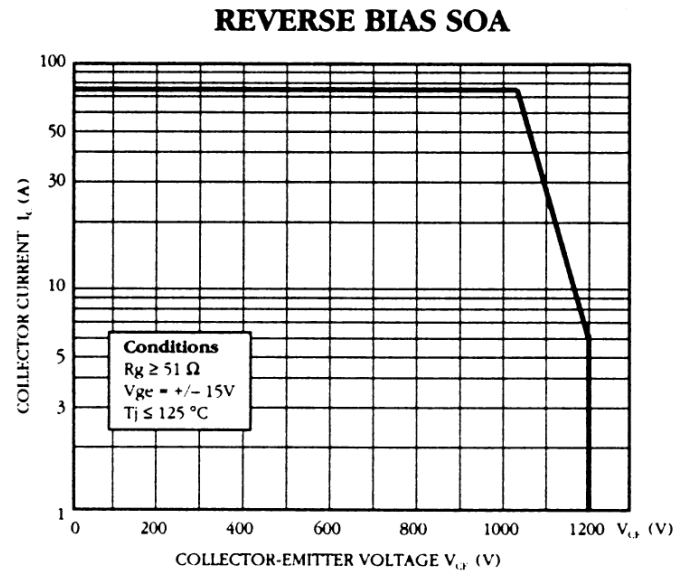
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		$I_{GES}$	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	$\pm 10$	$\mu A$
Collector Cut-off Current		$I_{CES}$	$V_{CE} = 1200V, V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-off Voltage		$V_{GE (OFF)}$	$I_C = 25mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE (sat)}$	$I_C = 25A, V_{GE} = 15V$	—	3.0	4.0	V
Input Capacitance		$C_{ies}$	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	3000	—	pF
Switching Time	Rise Time	$t_r$		—	0.3	0.6	$\mu s$
	Turn-on Time	$t_{on}$		—	0.4	0.8	
	Fall Time	$t_f$		—	0.25	0.5	
	Turn-off Time	$t_{off}$		—	0.8	1.5	
Forward Voltage		$V_F$	$I_F = 25A, V_{GE} = 0$	—	2.0	2.5	V
Reverse Recovery Time		$t_{rr}$	$I_F = 25A, V_{GE} = -10V$ $di/dt = 100A/\mu s$	—	0.2	0.5	$\mu s$
Thermal Resistance		$R_{th (j - c)}$	Transistor	—	—	0.625	$^{\circ}C/W$
			Diode	—	—	1.3	







CHARACTERISTIC	CONDITION	LIMITS	UNIT
PeakCollector Current (I <sub>cp</sub> )	T <sub>j</sub> ≤ 125°C	≤ 75	A
Diode surge current (IFSM)	10ms 1/2 sinewave, T <sub>j</sub> ≤ 25°C, Non-repetitive	≤ 155	A
Diode I <sup>2</sup> t	10ms 1/2 sinewave, Non-repetitive	≥ 120	A <sup>2</sup> s



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