

### GTR Module

### Silicon N Channel IGBT

### High Power Switching Applications

### Motor Control Applications

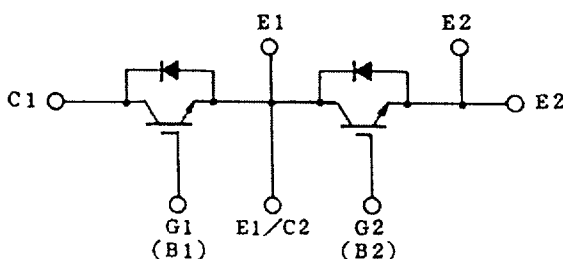
#### Features

- High input impedance
- High speed:  $t_f = 1.0\mu\text{s}$  (Max.)  
 $t_{rr} = 0.5\mu\text{s}$  (Max.)
- Low saturation:  $V_{CE(sat)} = 2.7\text{V}$  (Max.)
- Enhancement mode
- The electrodes are isolated from case
- Includes a complete half bridge card in one package

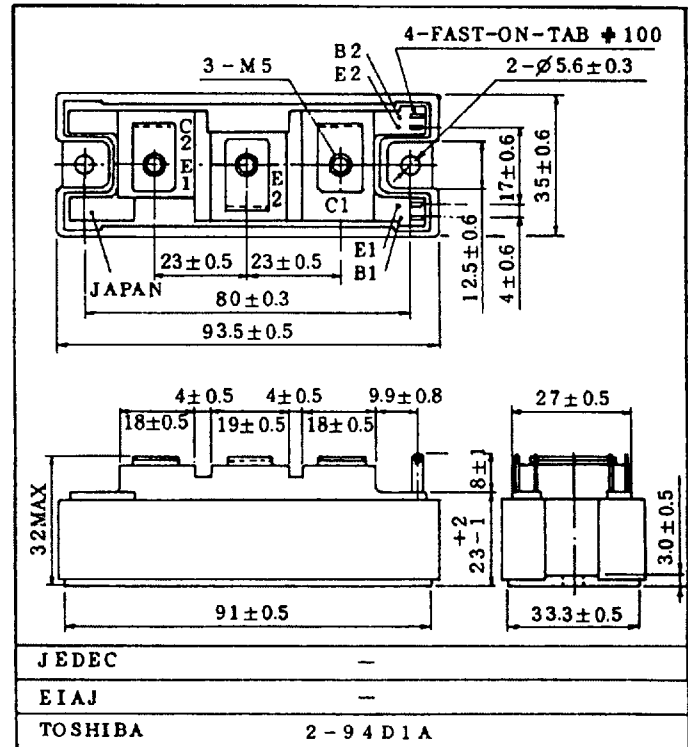
#### Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	$V_{CES}$	1200	V
Gate-Emitter Voltage	$V_{GES}$	$\pm 20$	V
Collector Current	DC	$I_C$	50
	1ms	$I_{CP}$	100
Forward Current	DC	$I_F$	50
	1ms	$I_{FM}$	100
Collector Power Dissipation ( $T_c = 25^\circ\text{C}$ )	$P_C$	400	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40 ~ 125	$^\circ\text{C}$
Isolation Voltage	$V_{isol}$	2500 (AC 1 min.)	V
Screw Torque (Terminal/Mounting)	—	3/3	N $\neq$ m

#### Equivalent Circuit



Unit in mm



Weight : 202g

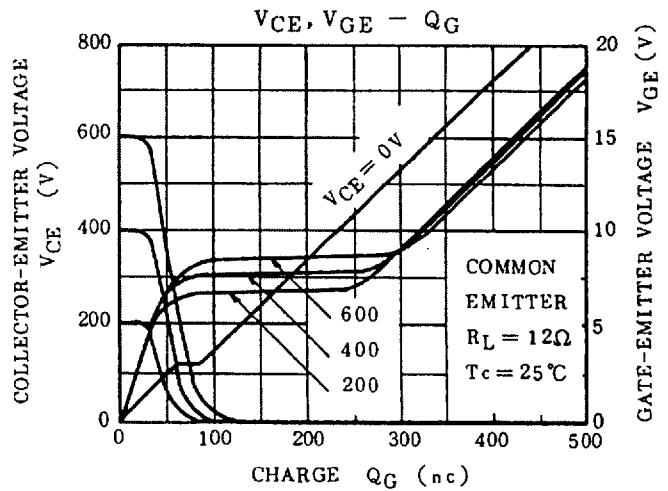
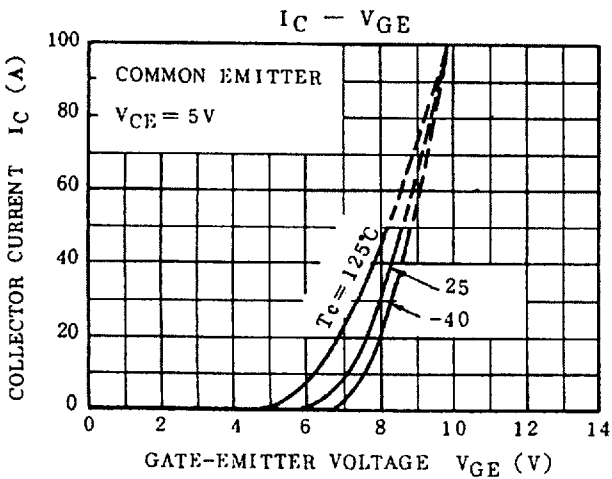
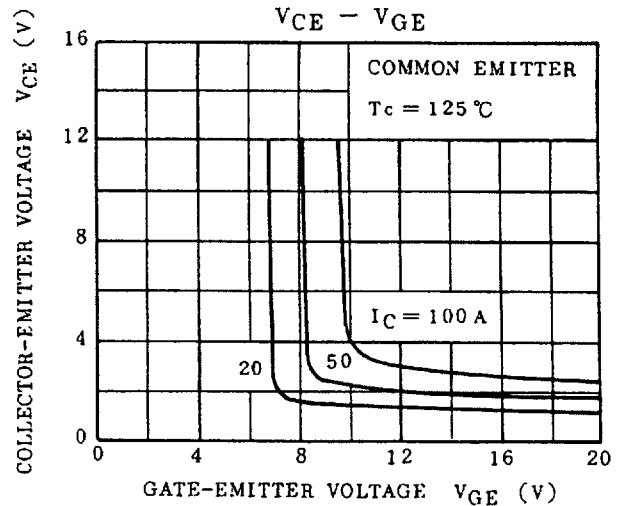
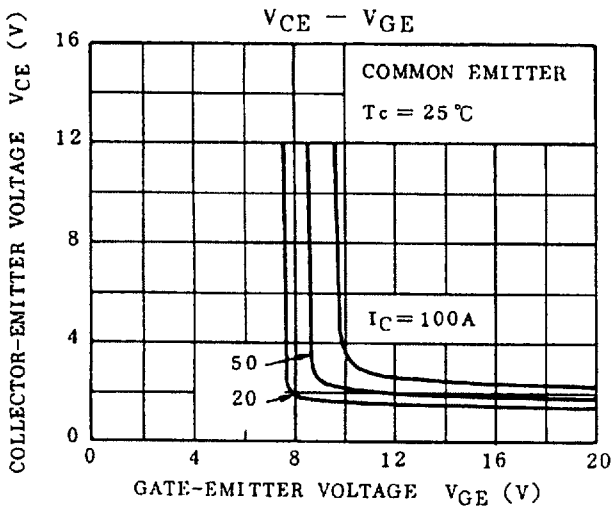
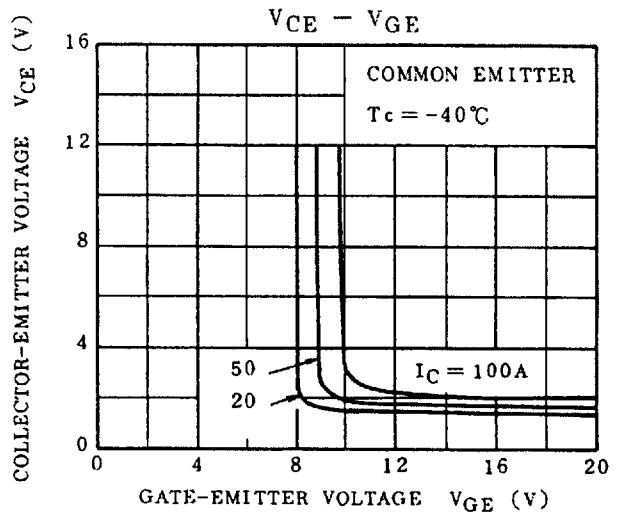
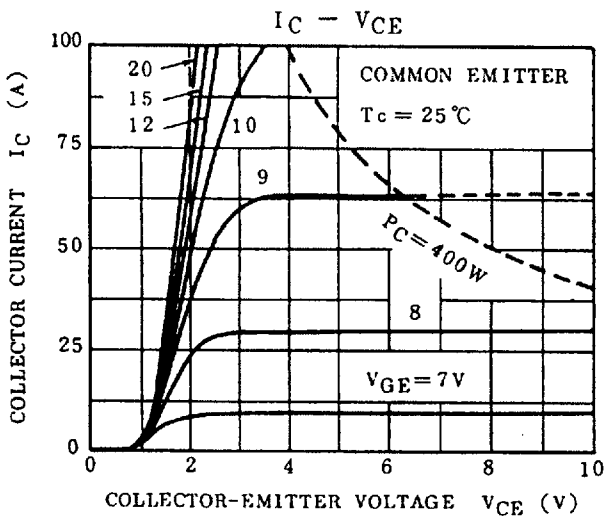
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Electrical Characteristics (Ta = 25°C)

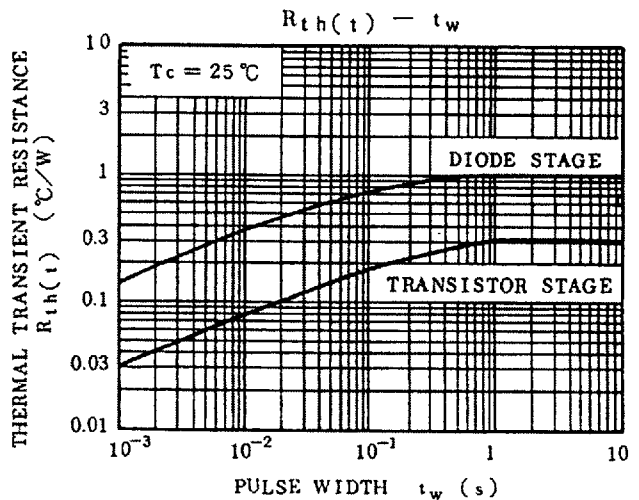
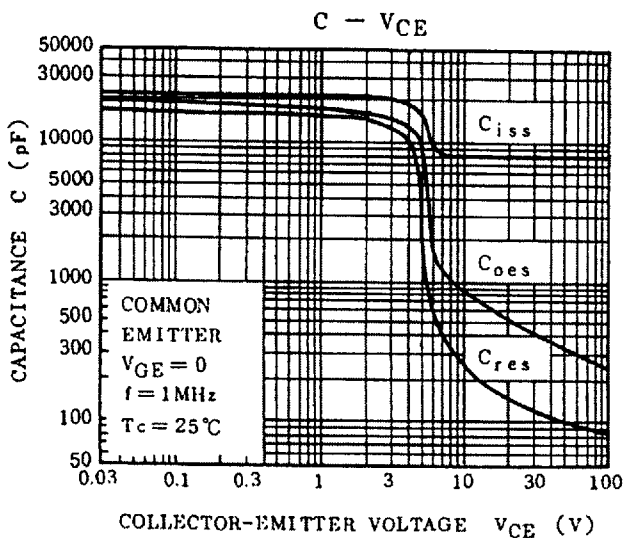
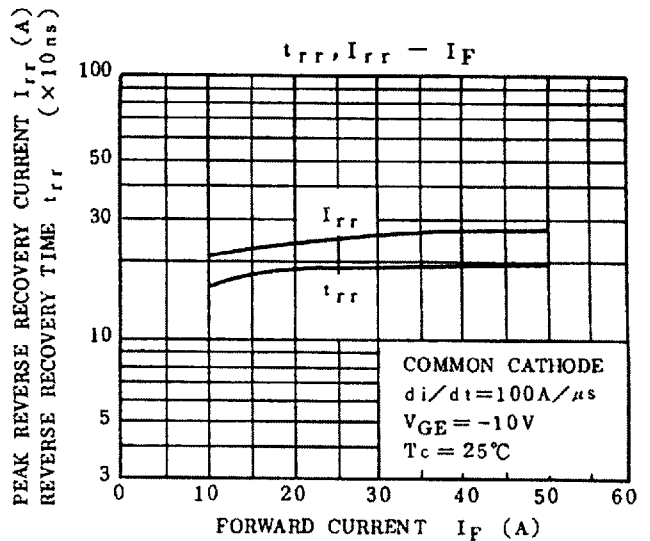
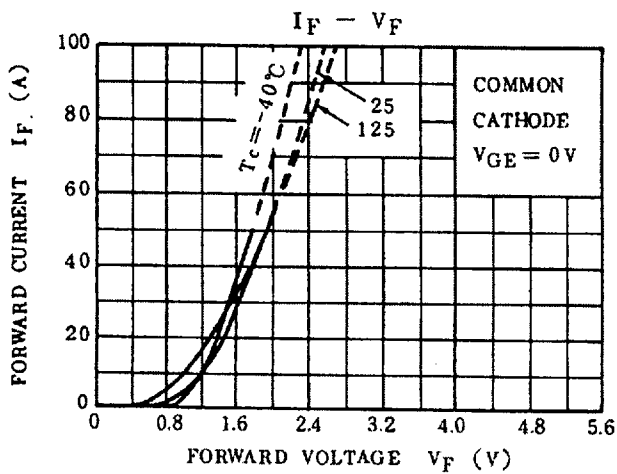
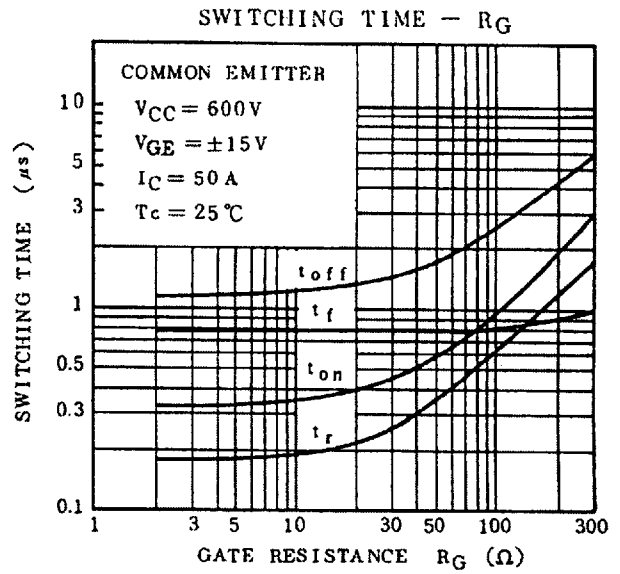
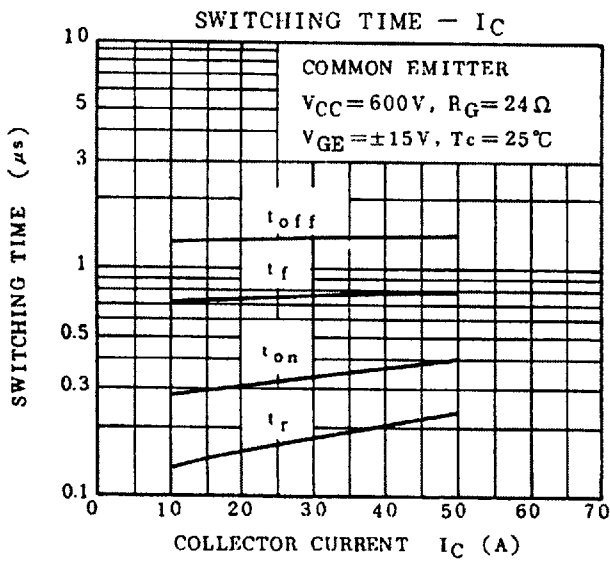
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		$I_{GES}$	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	$\pm 500$	nA
Collector Cut-off Current		$I_{CES}$	$V_{CE} = 1200V, V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-off Voltage		$V_{GE(OFF)}$	$I_C = 50mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 50A, V_{GE} = 15V$	—	2.2	2.7	V
Input Capacitance		$C_{ies}$	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	7800	—	pF
Switching Time	Rise Time	$t_r$		—	0.3	0.6	μs
	Turn-on Time	$t_{on}$		—	0.4	0.8	
	Fall Time	$t_f$		—	0.6	1.0	
	Turn-off Time	$t_{off}$		—	1.2	1.8	
Forward Voltage		$V_F$	$I_F = 50A, V_{GE} = 0$	—	2.0	2.5	V
Reverse Recovery Time		$t_{rr}$	$I_F = 50A, V_{GE} = -10V$ $di/dt = 100A/\mu s$	—	0.25	0.5	μs
Thermal Resistance		$R_{th(j-c)}$	Transistor	—	—	0.31	°C/W
			Diode	—	—	1.0	

Note 1 : Do not apply the over rating voltage.

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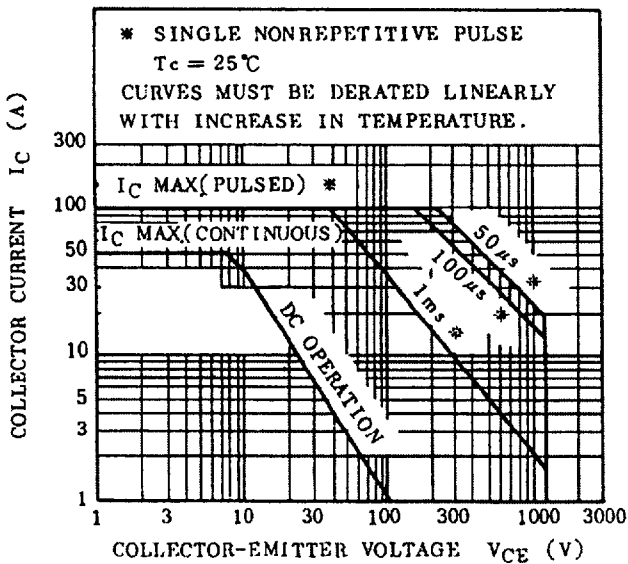


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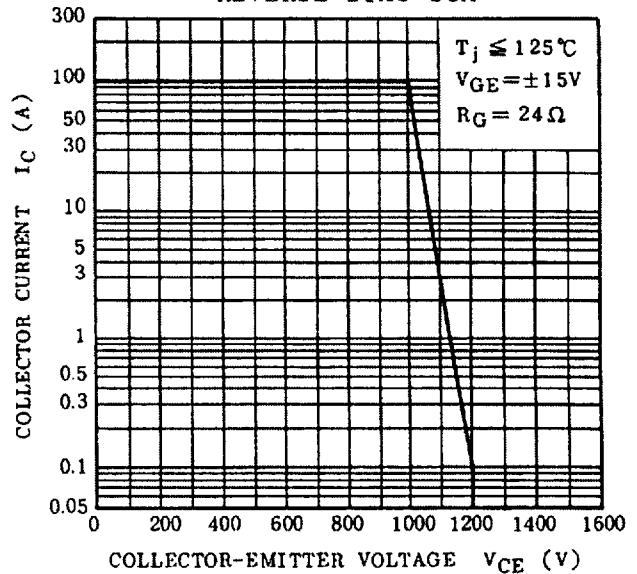


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SAFE OPERATING AREA



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