

GTR Module

Silicon N Channel IGBT

High Power Switching Applications

Motor Control Applications

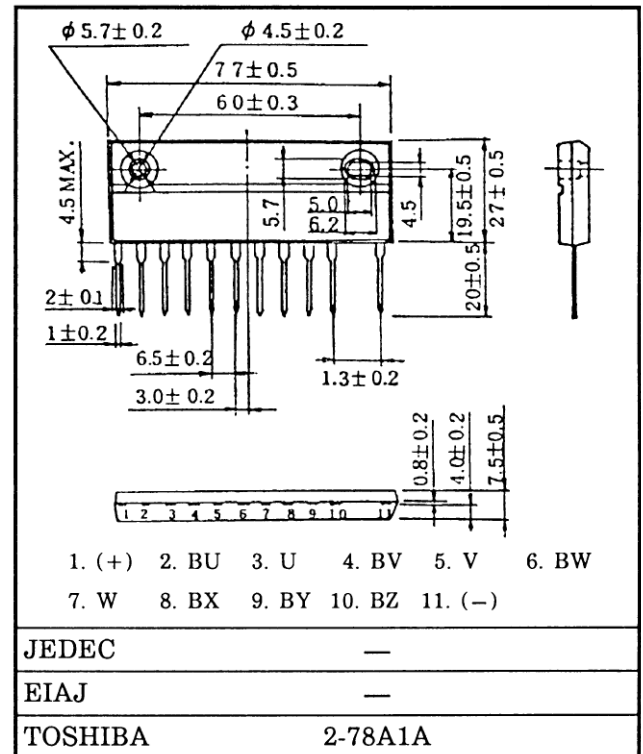
Features

- 6 IGBTs are built into 1 package
- High speed: $t_f = 0.35\mu\text{s}$ (Max.) ($I_C = 20\text{A}$)
 $t_{rr} = 0.15\mu\text{s}$ (Max.) ($I_C = 20\text{A}$)
- Low saturation voltage: $V_{CE(sat)} = 4.0\text{V}$ (Max.) ($I_F = 20\text{A}$)
- Enhancement mode
- The electrodes are isolated from case

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

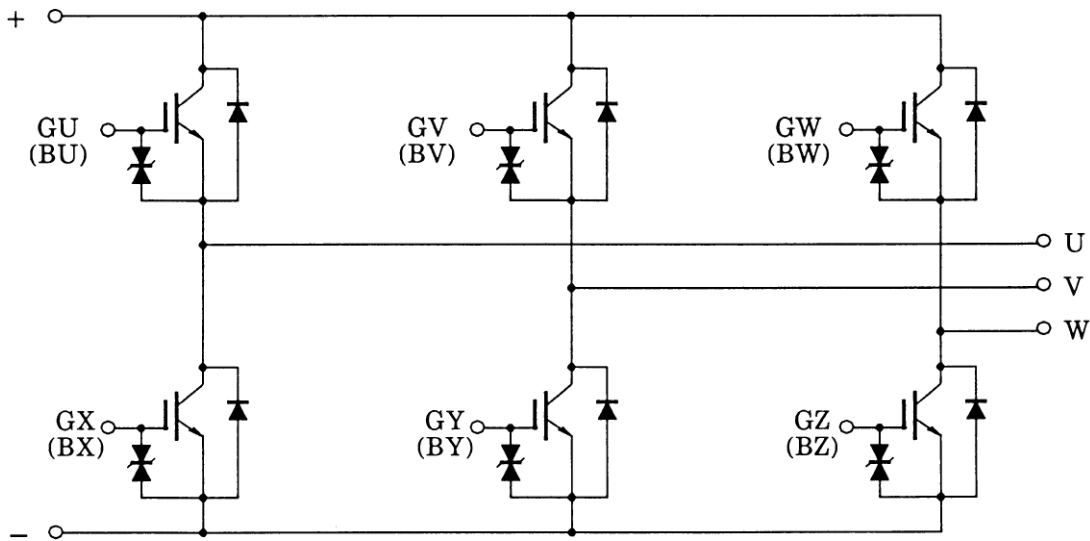
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V_{CES}	600	V
Gate-Emitter Voltage		V_{GES}	± 20	V
Collector Current	DC	I_C	20	A
	1ms	I_{CP}	40	
Forward Current	DC	I_F	20	A
	1ms	I_{FM}	40	
Collector Power Dissipation ($T_c = 25^\circ\text{C}$)		P_C	60	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-40 ~ 125	$^\circ\text{C}$
Isolation Voltage		V_{Isol}	2500 (AC 1 Minute)	V
Screw Torque		—	1.5	N \cdot m

Unit in mm



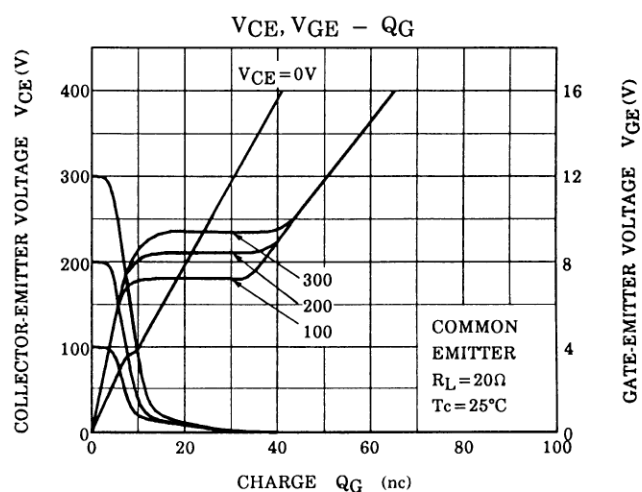
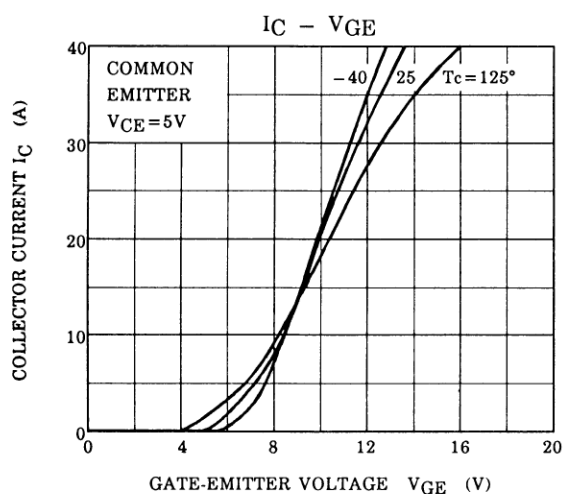
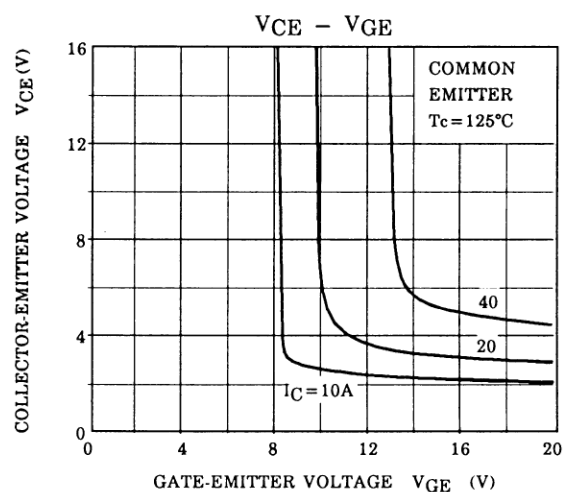
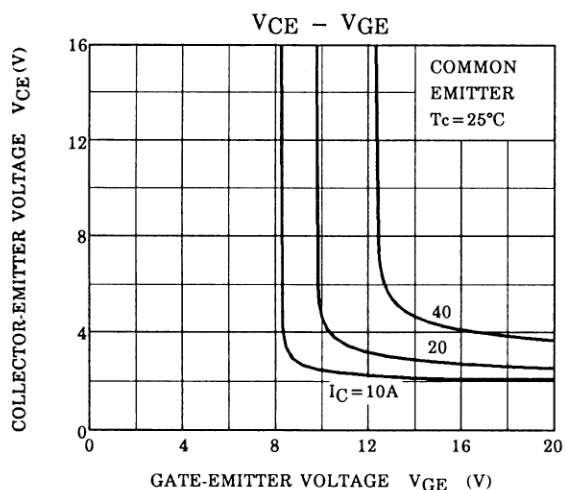
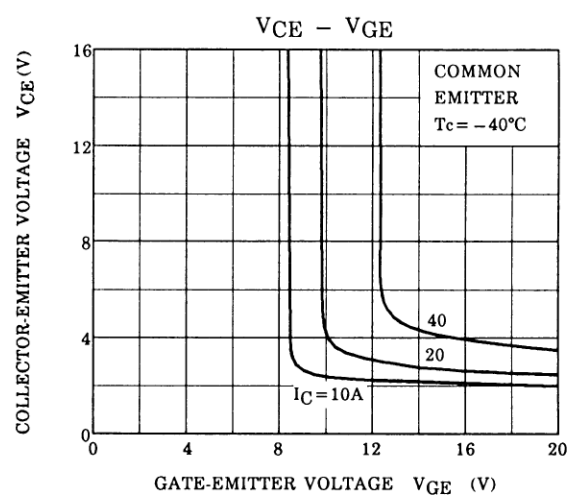
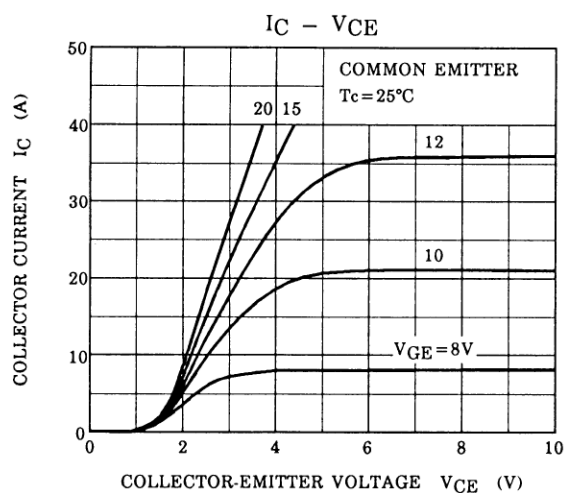
Weight : 44g

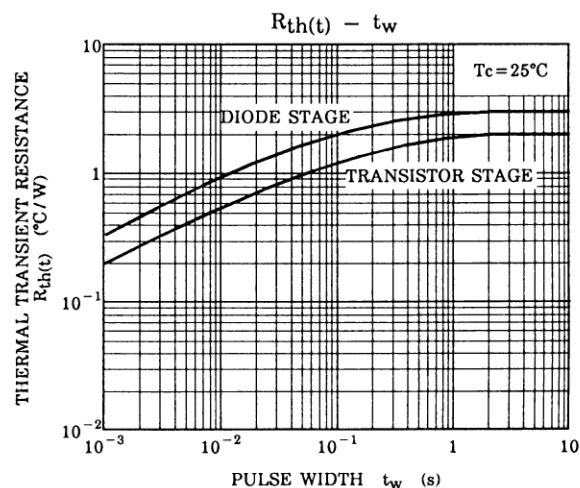
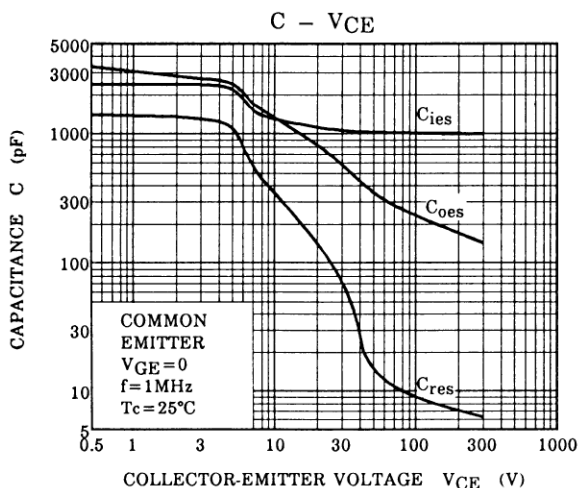
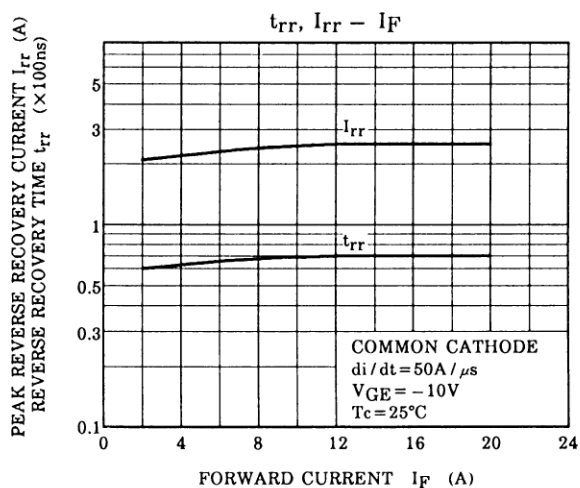
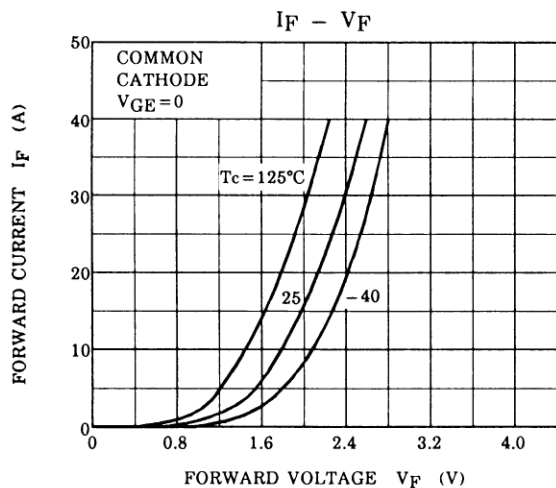
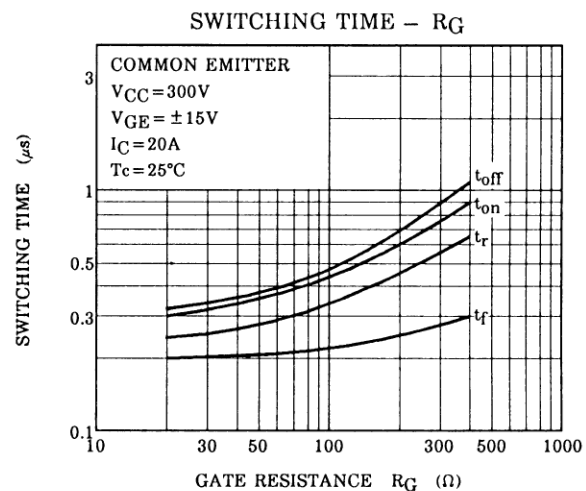
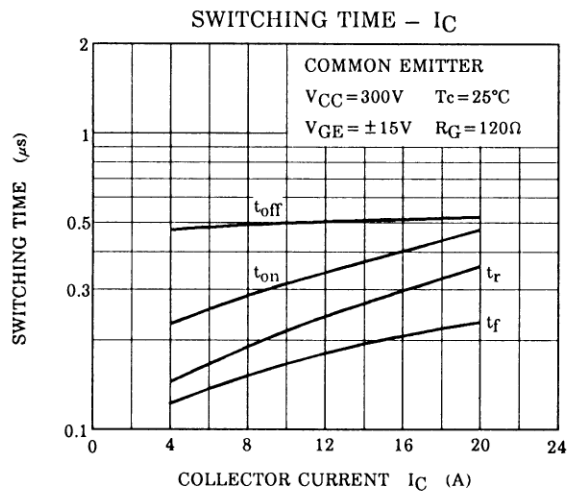
Equivalent Circuit

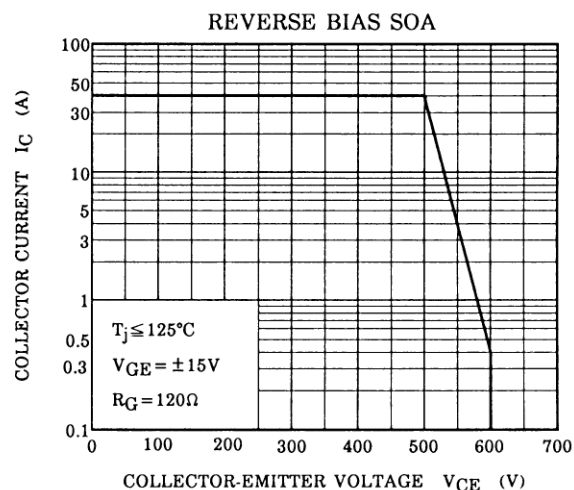
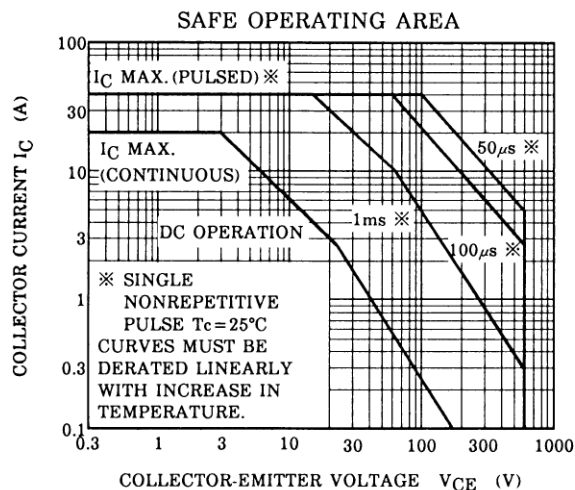


Electrical Characteristics (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GES}	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	± 20	μA
Collector Cut-off Current		I_{CES}	$V_{CE} = 600V, V_{GE} = 0$	—	—	1.0	mA
Collector-Emitter Voltage		$V_{(BR) CES}$	$I_C = 10mA, V_{GE} = 0$	600	—	—	V
Gate-Emitter Cut-off Voltage		$V_{GE (OFF)}$	$I_C = 20mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE (sat)}$	$I_C = 20A, V_{GE} = 15V$	—	3.0	4.0	V
Input Capacitance		C_{ies}	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	1320	—	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		—	0.2	0.35	
	Turn-off Time	t_{off}		—	0.5	1.0	
Forward Voltage		V_F	$I_F = 20A, V_{GE} = 0$	—	1.7	2.5	V
Reverse Recovery Time		t_{rr}	$I_F = 20A, V_{GE} = -10V$ $di/dt = 50A/\mu s$	—	0.08	0.15	μs
Thermal Resistance		$R_{th (j - c)}$	Transistor	—	—	2.08	$^{\circ}C/W$
			Diode	—	—	3.09	







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