

TOSHIBA GTR Module Silicon N Channel IGBT

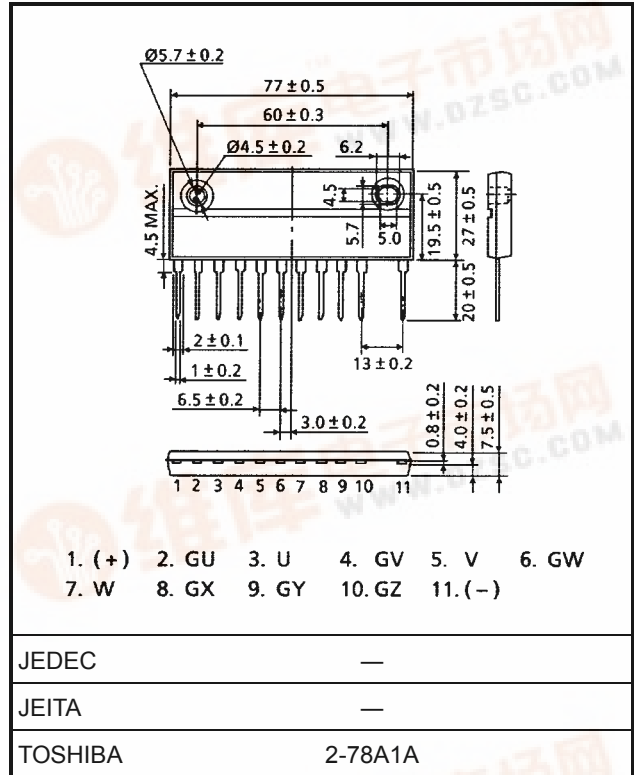
MP6759

Motor Control Applications

High Power Switching Applications

Unit: mm

- The electrodes are isolated from case.
- 6 IGBTs are built into 1 package.
- Enhancement-mode
- Low saturation voltage
: $V_{CE(sat)} = 2.7\text{ V (max)}$ ($I_C = 10\text{ A}$)
- High speed: $t_f = 0.35\text{ }\mu\text{s (max)}$ ($I_C = 10\text{ A}$)

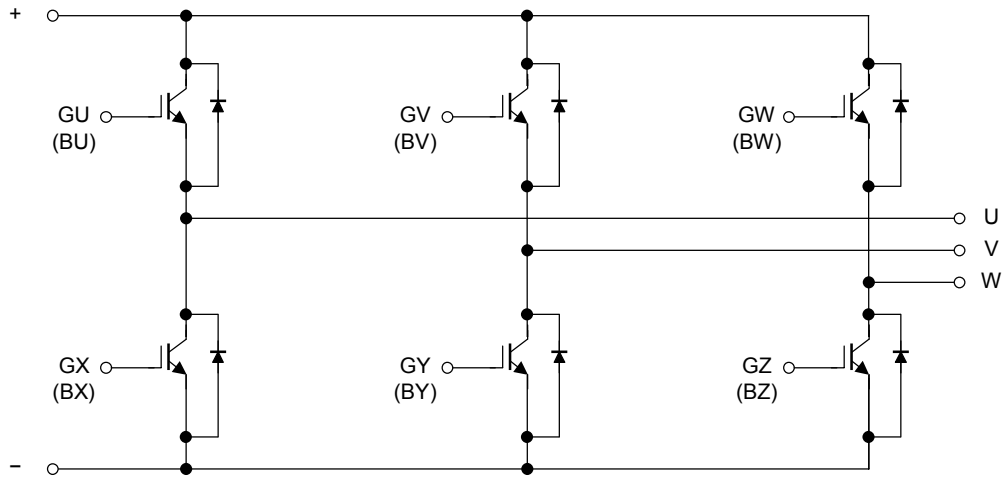


Weight: 44 g (typ.)

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

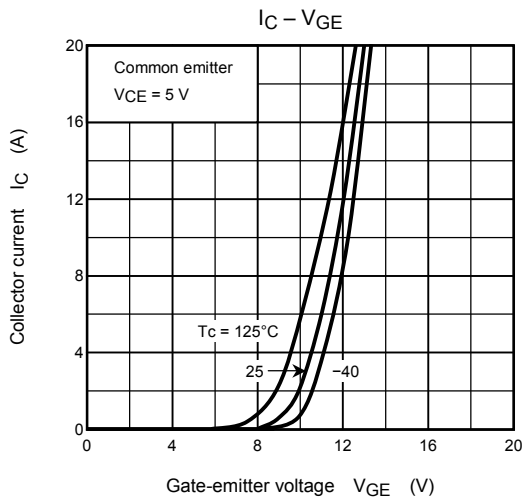
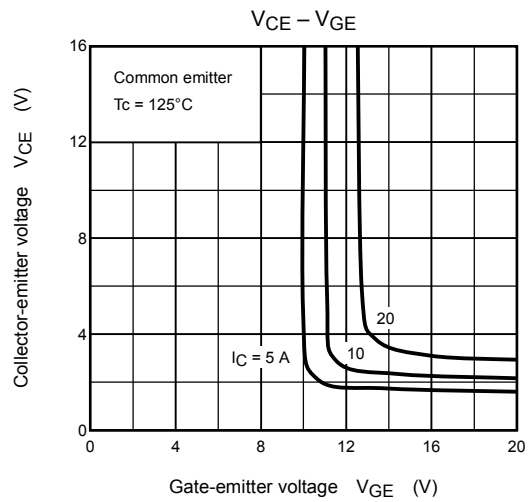
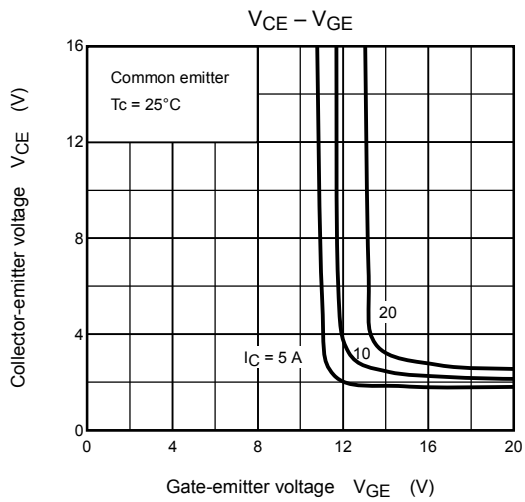
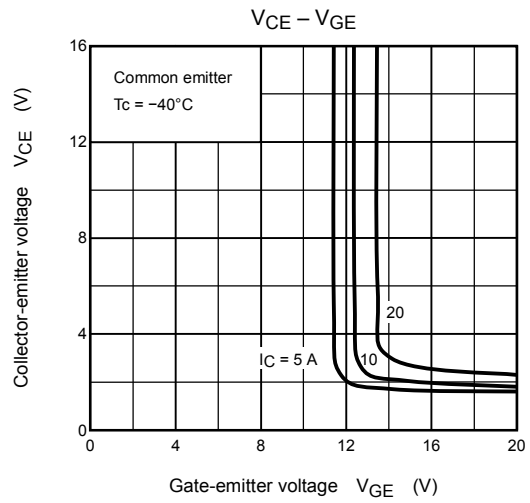
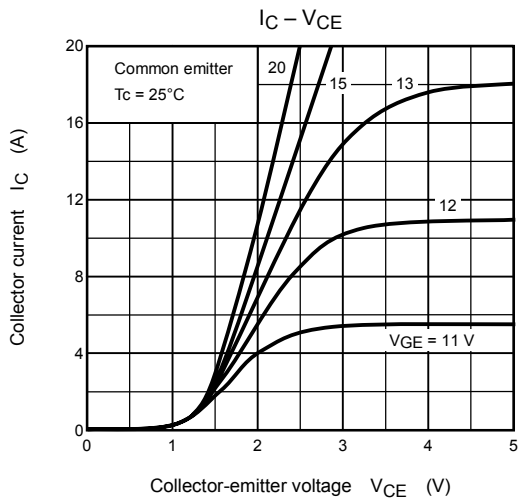
Characteristics	Symbol	Rating	Unit
Collector-emitter voltage	V_{CES}	600	V
Gate-emitter voltage	V_{GES}	± 20	V
Collector current	DC	I_C	10
	1 ms	I_{CP}	20
Forward current	DC	I_F	10
	1 ms	I_{FM}	20
Collector power dissipation ($T_c = 25^\circ\text{C}$)	P_C	40	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-40 to 125	$^\circ\text{C}$
Isolation voltage	V_{isol}	2500 (AC 1 minute)	V
Screw torque	—	1.5	N·m

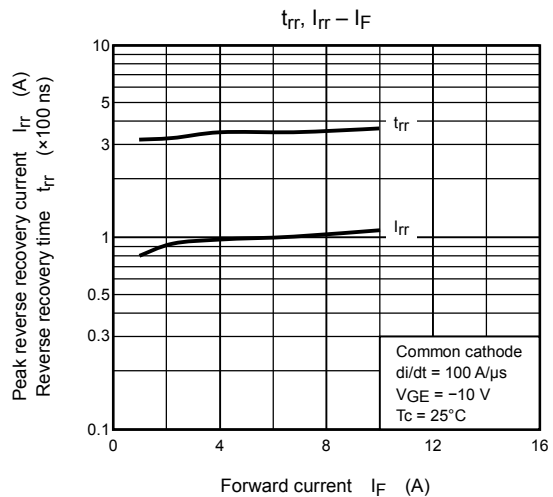
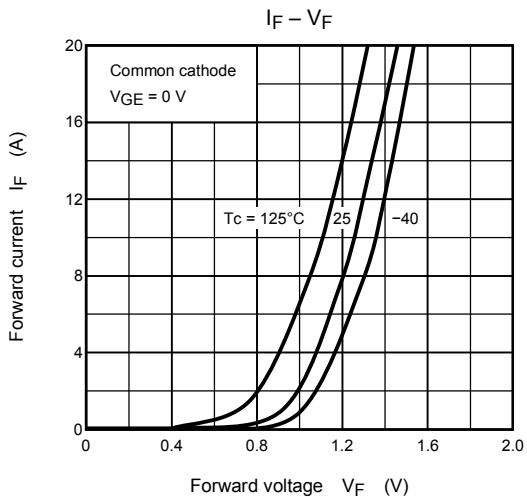
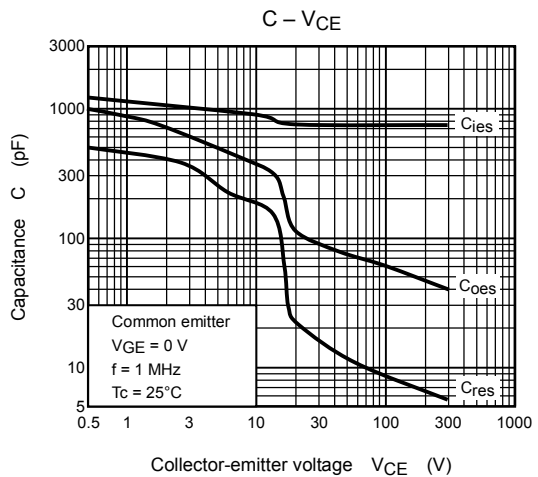
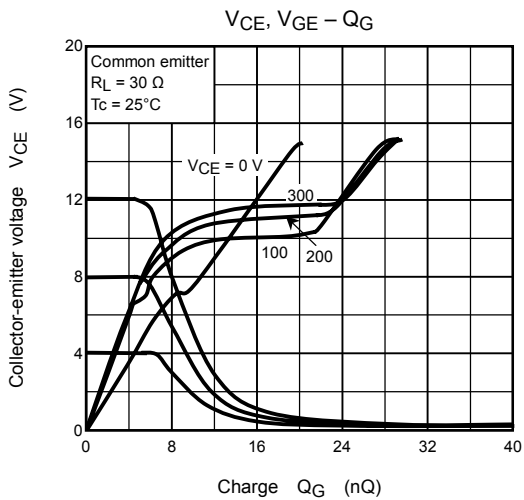
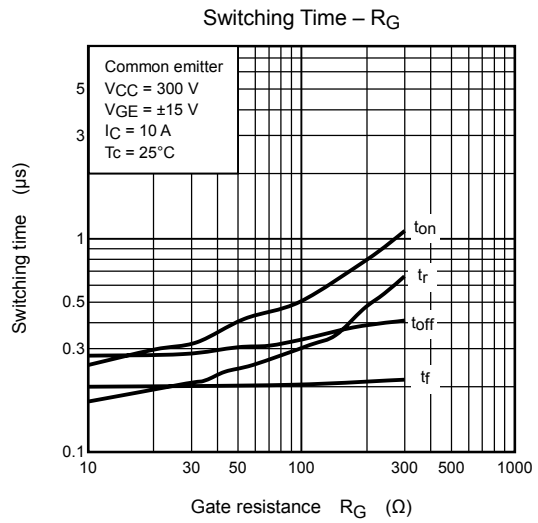
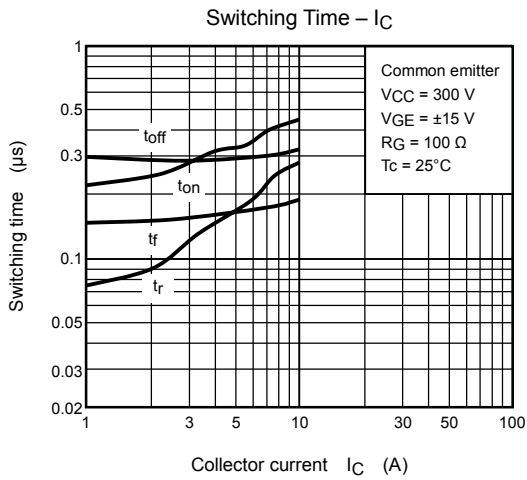
Equivalent Circuit

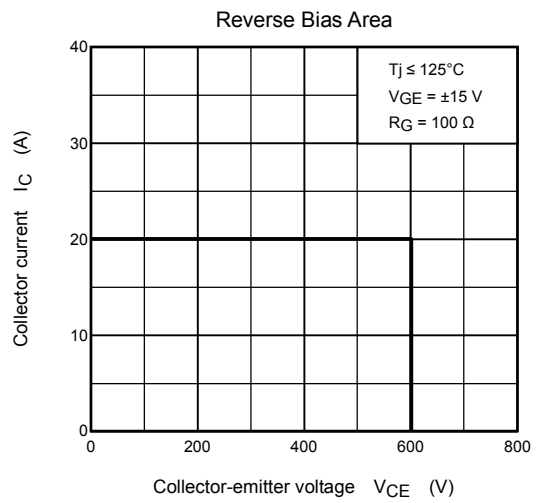
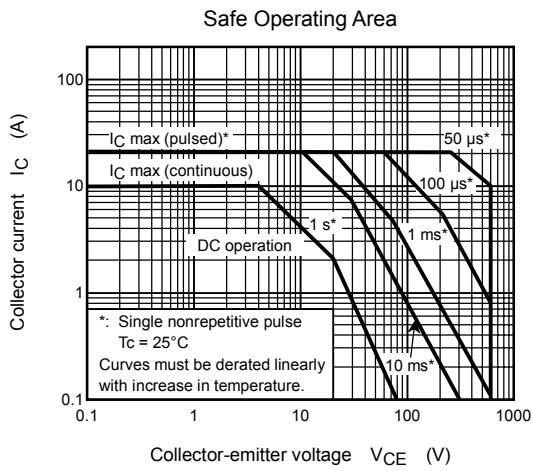
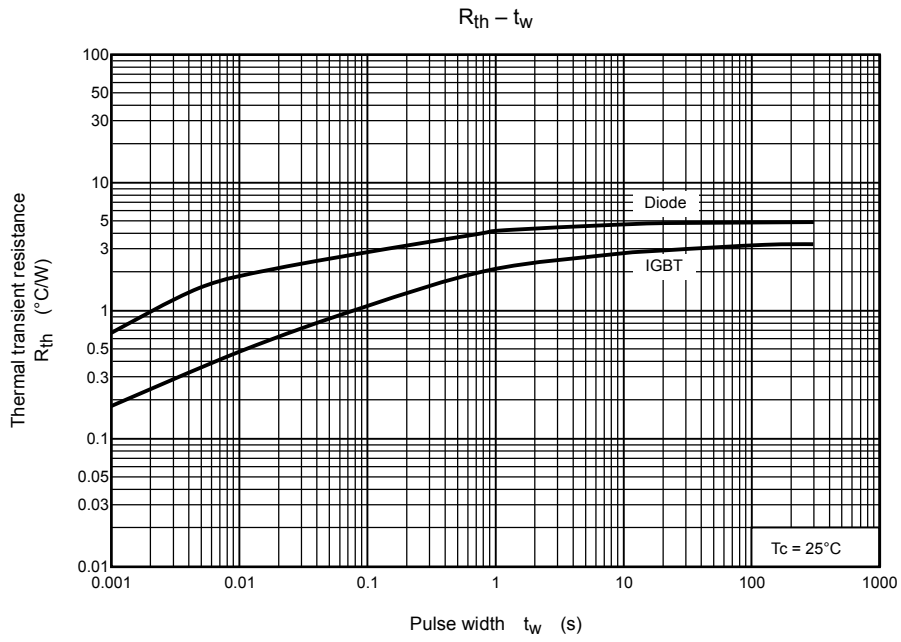


Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GES}	$V_{GE} = \pm 20\text{ V}, V_{CE} = 0\text{ V}$	—	—	± 200	nA
Collector cut-off current		I_{CES}	$V_{CE} = 600\text{ V}, V_{GE} = 0\text{ V}$	—	—	1	mA
Gate-emitter cut-off voltage		$V_{GE (off)}$	$I_C = 1\text{ mA}, V_{CE} = 5\text{ V}$	5	—	8	V
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 10\text{ A}, V_{GE} = 15\text{ V}$	—	2.1	2.7	V
Input capacitance		C_{ies}	$V_{CE} = 10\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$	—	720	—	pF
Switching time	Rise time	t_r		—	0.3	—	μs
	Turn-on time	t_{on}		—	0.4	—	
	Fall time	t_f		—	0.2	0.35	
	Turn-off time	t_{off}		—	0.4	—	
Forward voltage		V_F	$I_F = 10\text{ A}, V_{GE} = 0\text{ V}$	—	—	2.0	V
Reverse recovery time		t_{rr}	$I_F = 10\text{ A}, di/dt = -100\text{ A}/\mu\text{s}$	—	—	200	ns
Thermal resistance		$R_{th (j-c)}$	Transistor	—	—	3.09	$^{\circ}\text{C}/\text{W}$
			Diode	—	—	4.77	







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