

TOSHIBA Insulated Gate Bipolar Transistor Silicon N Channel IGBT

GT60J322

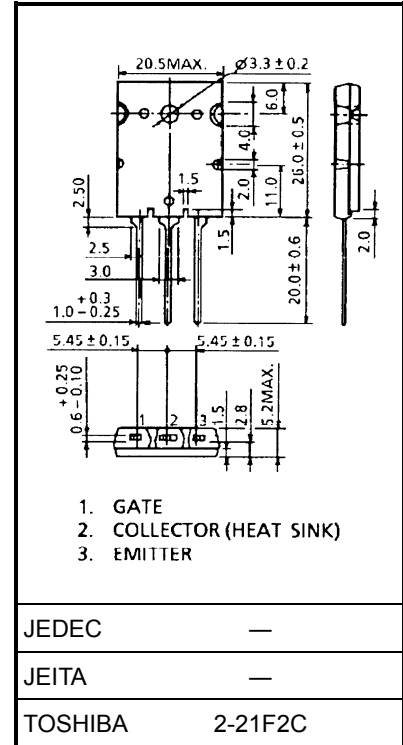
The 4th Generation
Soft Switching Applications

- Enhancement-mode
- Low saturation voltage: $V_{CE(sat)} = 1.25 \text{ V (typ.)}$ ($I_C = 60 \text{ A}$)

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

| Characteristics | | Symbol | Rating | Unit |
|--|------|------------|----------|------------------|
| Collector-emitter voltage | | V_{CES} | 600 | V |
| Gate-emitter voltage | | V_{GES} | ± 25 | V |
| Collector current | DC | I_C | 60 | A |
| | 1 ms | I_{CP} | 120 | |
| Emitter-collector forward current | DC | I_{ECF} | 60 | A |
| | 1 ms | I_{ECPF} | 120 | |
| Collector power dissipation ($T_c = 25^\circ\text{C}$) | | P_C | 200 | W |
| Junction temperature | | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature range | | T_{stg} | -55~150 | $^\circ\text{C}$ |
| Screw torque | | — | 0.8 | N·m |

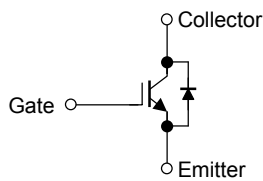
Unit: mm



| | |
|---------|---------|
| JEDEC | — |
| JEITA | — |
| TOSHIBA | 2-21F2C |

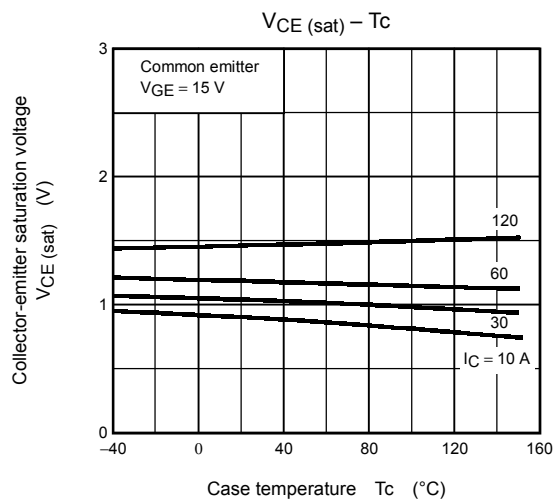
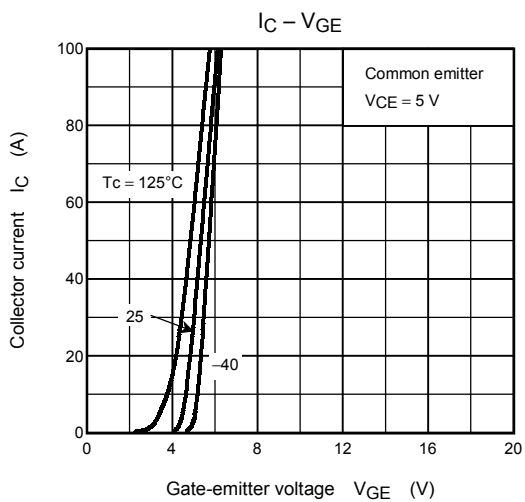
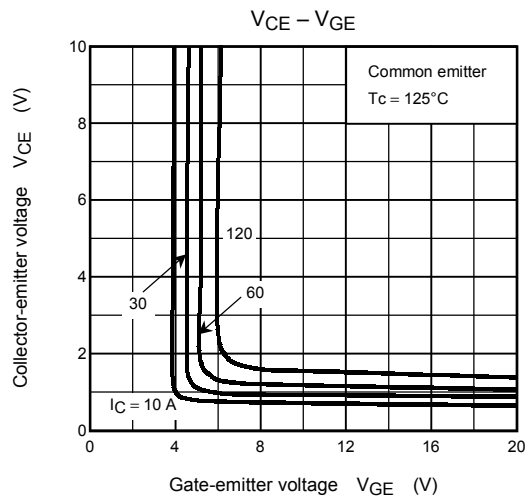
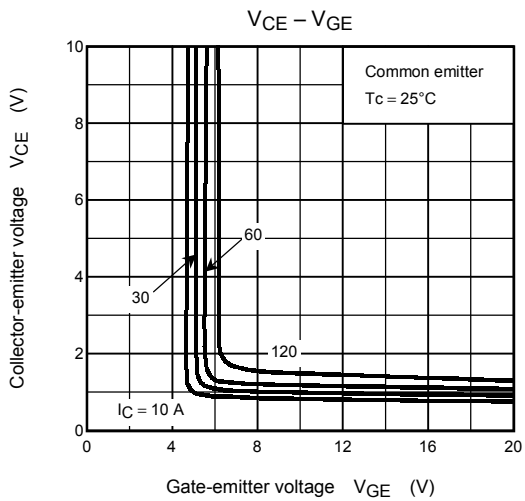
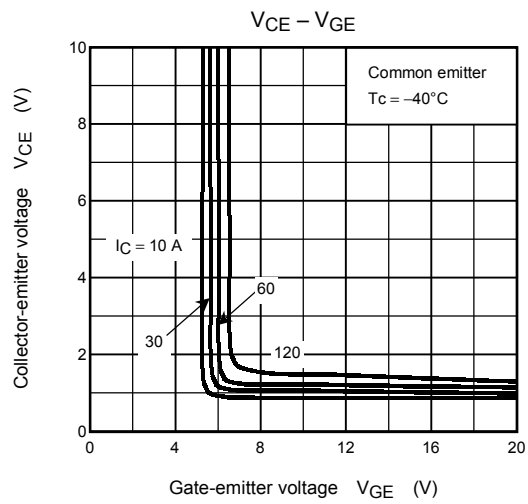
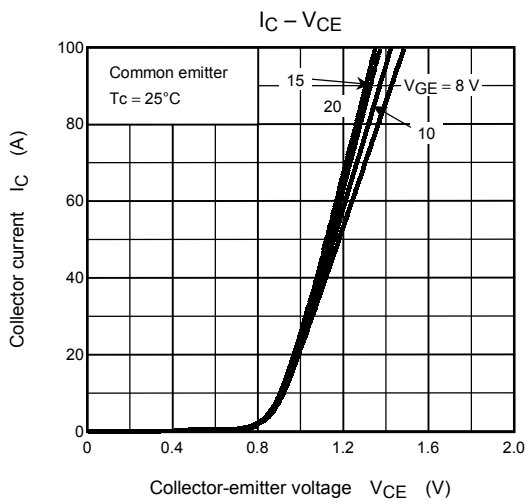
Weight: 9.75 g (typ.)

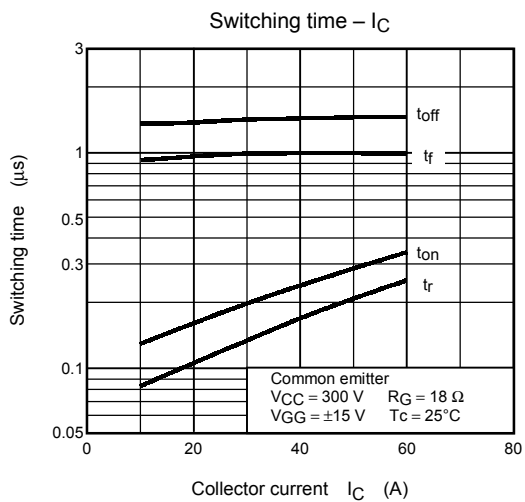
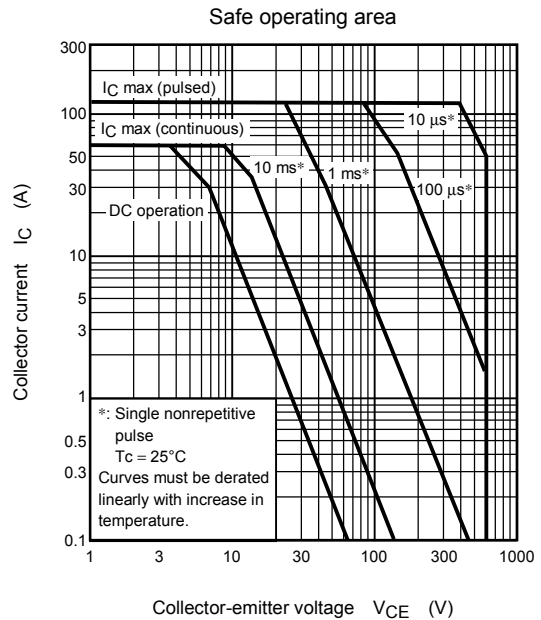
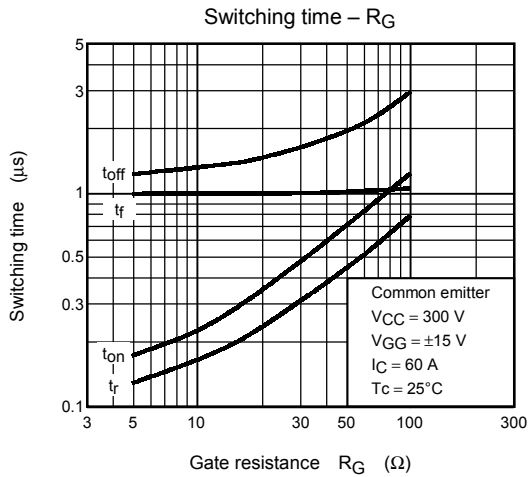
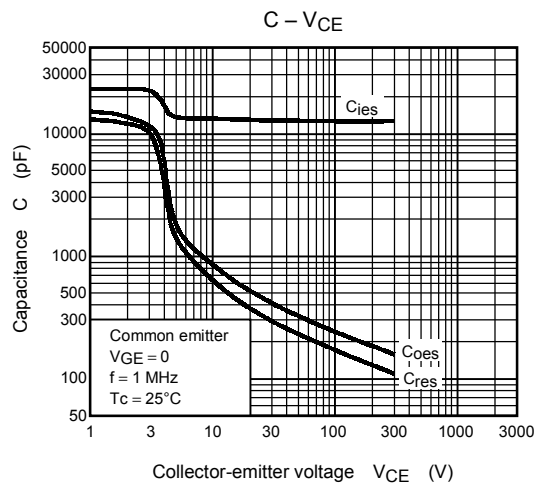
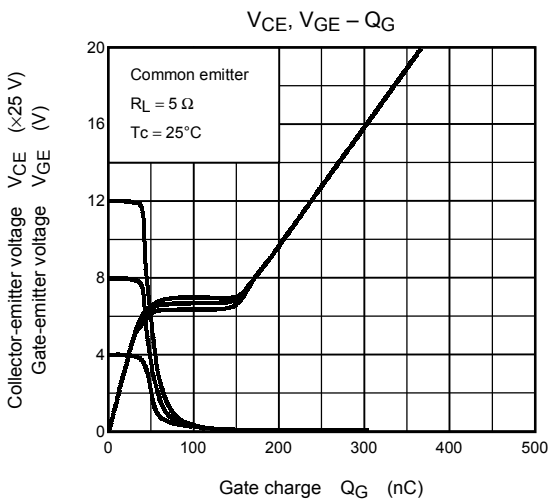
Equivalent Circuit

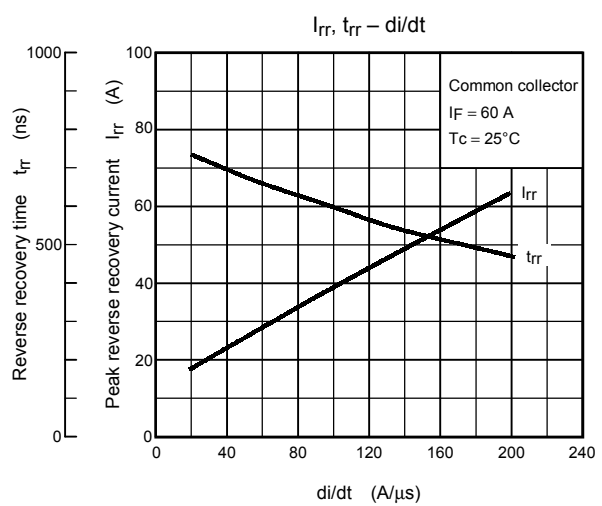
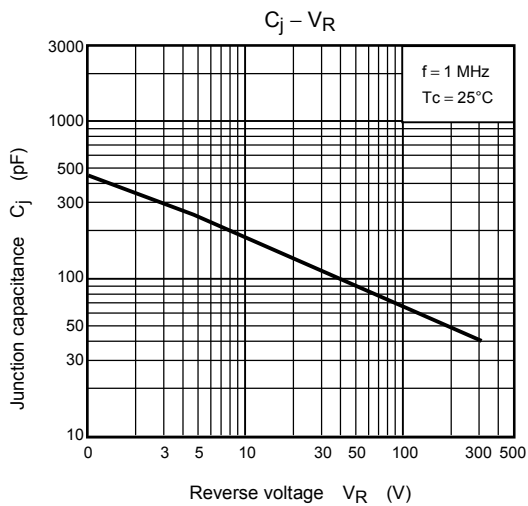
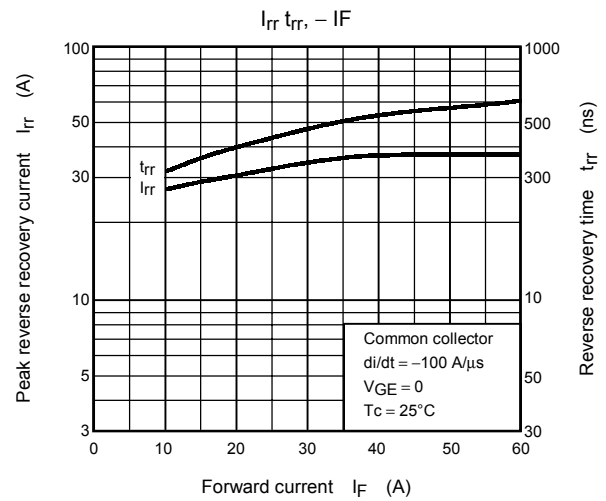
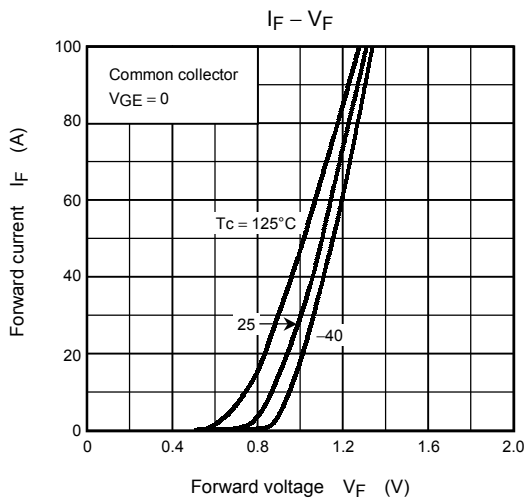
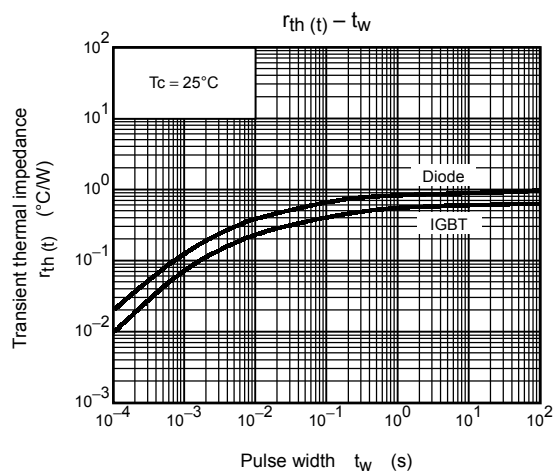
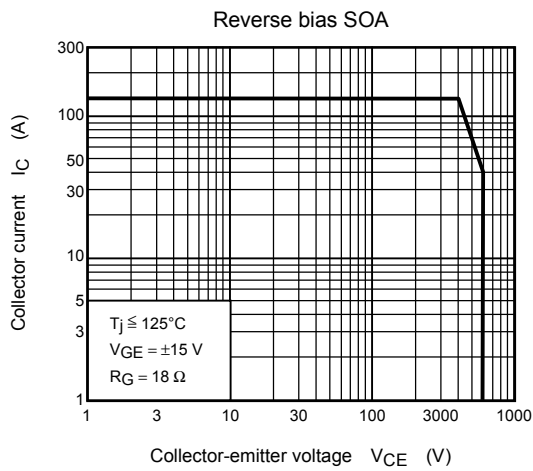


Electrical Characteristics (Ta = 25°C)

| Characteristics | | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|---------------|----------------------------|--|-----|-------|-----------|-----------------------------|
| Gate leakage current | | I_{GES} | $V_{GE} = \pm 25 \text{ V}, V_{CE} = 0$ | — | — | ± 500 | nA |
| Collector cut-off current | | I_{CES} | $V_{CE} = 600 \text{ V}, V_{GE} = 0$ | — | — | 1.0 | mA |
| Gate-emitter cut-off voltage | | $V_{GE} \text{ (OFF)}$ | $I_C = 60 \text{ mA}, V_{CE} = 5 \text{ V}$ | 3.0 | — | 6.0 | V |
| Collector-emitter saturation voltage | | $V_{CE} \text{ (sat) (1)}$ | $I_C = 10 \text{ A}, V_{GE} = 15 \text{ V}$ | — | 0.95 | 1.45 | V |
| | | $V_{CE} \text{ (sat) (2)}$ | $I_C = 60 \text{ A}, V_{GE} = 15 \text{ V}$ | — | 1.25 | 1.65 | |
| Input capacitance | | C_{ies} | $V_{CE} = 10 \text{ V}, V_{GE} = 0, f = 1 \text{ MHz}$ | — | 13500 | — | pF |
| Switching time | Rise time | t_r | | — | 0.25 | — | μs |
| | Turn-on time | t_{on} | | — | 0.35 | — | |
| | Fall time | t_f | | — | 1.00 | 1.50 | |
| | Turn-off time | t_{off} | | — | 1.50 | — | |
| Forward voltage | | V_F | $I_F = 60 \text{ A}, V_{GE} = 0$ | — | 1.2 | 1.6 | V |
| Reverse recovery time | | t_{rr} | $I_F = 60 \text{ A}, V_{GE} = 0, di/dt = -100 \text{ A}/\mu\text{s}$ | — | 0.6 | 1.0 | μs |
| Thermal resistance (IGBT) | | $R_{th(j-c)}$ | — | — | — | 0.625 | $^{\circ}\text{C}/\text{W}$ |
| Thermal resistance (Diode) | | $R_{th(j-c)}$ | — | — | — | 0.96 | $^{\circ}\text{C}/\text{W}$ |







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