

3. Absolute Maximum Ratings (at Tc= 25°C unless otherwise specified)

| Items | Symbols | Conditions | Maximum Ratings | Units |
|---------------------------------------|-----------|------------|-----------------|-------|
| Collector-Emitter voltage | VCES | | 600 | V |
| Gate-Emitter voltage | VGES | | ±20 | V |
| Collector current | Ic | Continuous | 30 | A |
| | Ic pulse | 1ms | 60 | |
| | -Ic | | 30 | |
| | -Ic pulse | 1ms | 60 | |
| Collector Power Dissipation | Pc | 1 device | 120 | W |
| Junction temperature | Tj | | 150 | °C |
| Storage temperature | Tstg | | -40~ +125 | °C |
| Isolation voltage ^{(*)1} | Viso | AC : 1min. | 2500 | V |
| Mounting Screw Torque ^{(*)2} | | | 3.5 | N · m |

(*)1 All terminals should be connected together when isolation test will be done.

(*)2 Recommendable Value : 2.5~3.5 N · m (M5)

4. Electrical characteristics (at Tj= 25°C unless otherwise specified)

| Items | Symbols | Conditions | Characteristics | | | Units |
|--------------------------------------|----------|------------------------|-----------------|------|------|-------|
| | | | min. | typ. | Max. | |
| Zero gate voltage Collector current | ICES | VGE = 0 V, VCE = 600 V | | | 1.0 | mA |
| Gate-Emitter leakage current | IGES | VCE = 0 V, VGE = ±20 V | | | 200 | nA |
| Gate-Emitter threshold voltage | VGE(th) | VCE = 20 V, Ic = 30 mA | | 7.8 | | V |
| Collector-Emitter saturation voltage | VCE(sat) | VGE = 15 V | Tj = 25 °C | 1.95 | | V |
| | | Ic = 30 A | Tj = 125 °C | 2.1 | | |
| Input capacitance | Cies | VGE = 0 V | | 3000 | | pF |
| Output capacitance | Coes | VCE = 10 V | | 540 | | |
| Reverse transfer capacitance | Cres | f = 1 MHz | | 360 | | |
| Turn-on time | ton | Vcc = 300 V | | 0.45 | | μs |
| | tr | Ic = 30 A | | 0.25 | | |
| | tr(t) | VGE = ±15 V | | 0.08 | | |
| Turn-off time | toff | RG = 82 Ω | | 0.40 | | μs |
| | tf | | | 0.05 | | |
| Forward on voltage | VF | IF = 30 A | Tj = 25 °C | 1.95 | | V |
| | | | Tj = 125 °C | 1.8 | | |
| Reverse recovery time | trr | IF = 30 A | | | | ns |

5. Thermal resistance characteristics

| Items | Symbols | Conditions | Characteristics | | | Units |
|-------------------------------|----------|--------------------------------------|-----------------|------|------|-------|
| | | | min. | typ. | Max. | |
| Thermal resistance (1 device) | Rth(j-c) | IGBT | | | 1.04 | °C/W |
| | | FWD | | | 2.00 | |
| Contact Thermal resistance | Rth(c-f) | with Thermal Compound ^(*) | | 0.05 | | |

* This is the value which is defined mounting on the additional cooling fin with thermal compound.

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