

# CT60AM-18F

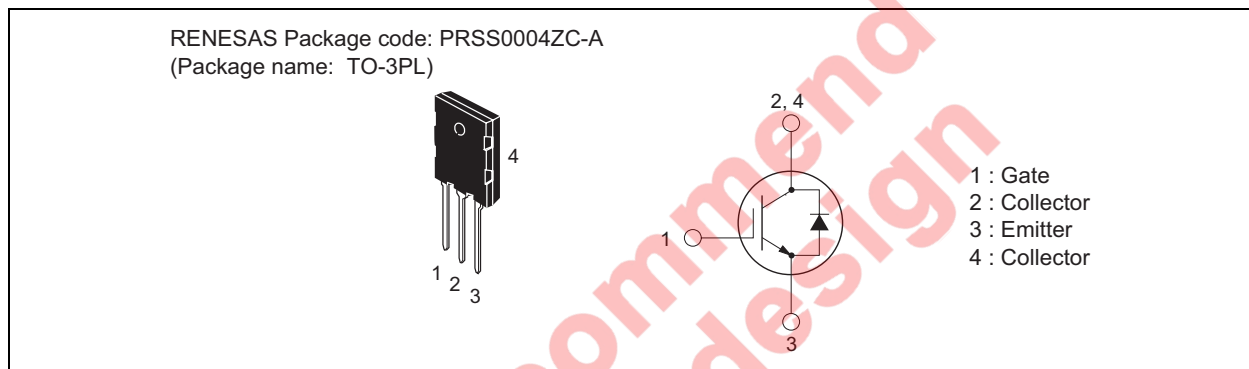
## Insulated Gate Bipolar Transistor

REJ03G1374-0200  
(Previous: MEJ02G0023-0101)  
Rev.2.00  
Jul 07, 2006

### Features

- $V_{CES}$  : 900 V
- $I_C$  : 60 A
- Integrated fast-recovery diode

### Appearance Figure



### Applications

Microwave oven, Electromagnetic cooking devices, Rice-cookers

### Maximum Ratings

( $T_c = 25^\circ\text{C}$ )

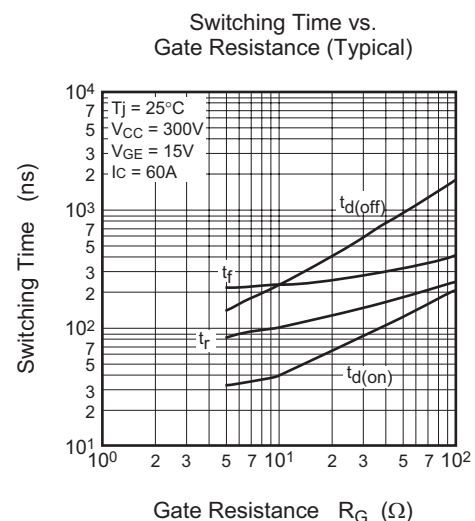
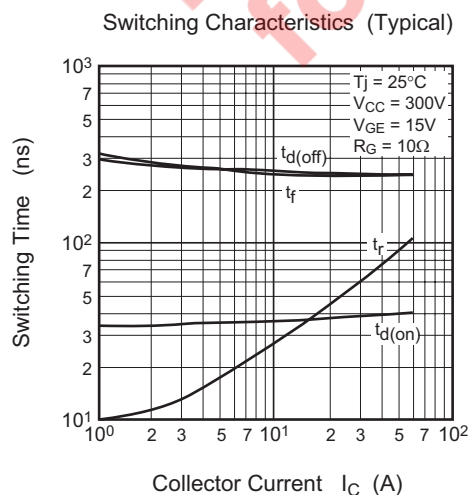
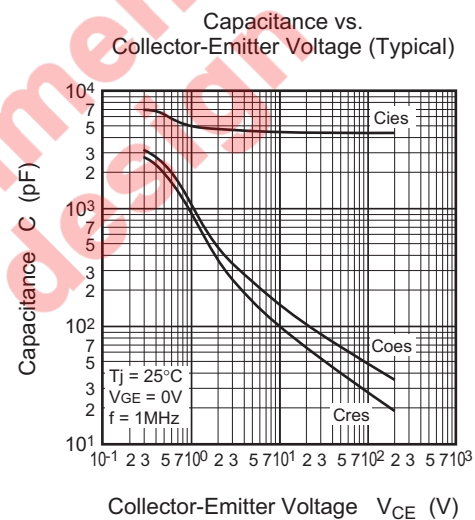
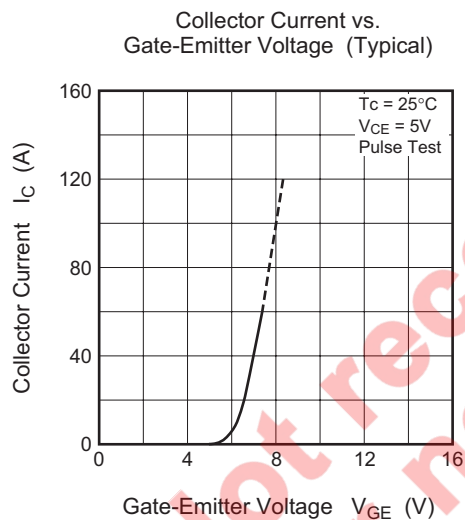
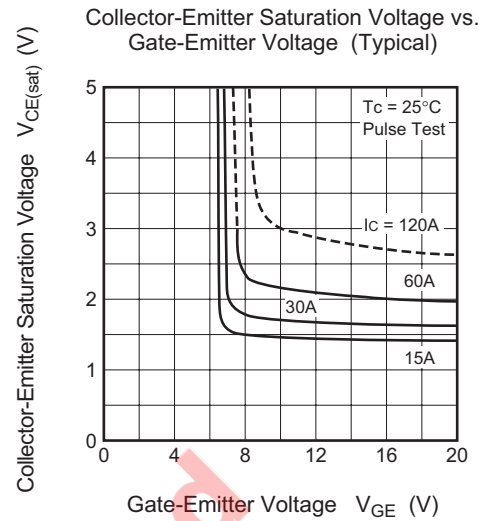
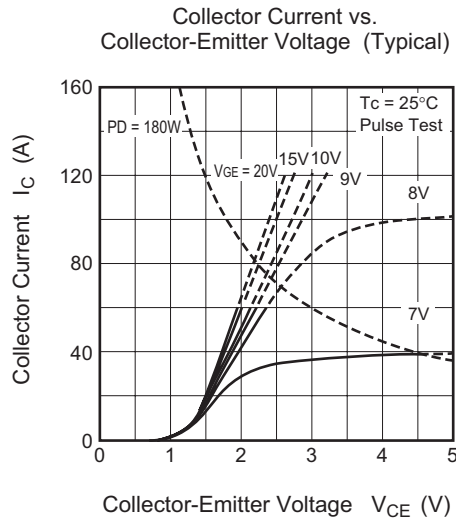
| Parameter                 | Symbol    | Ratings      | Unit             | Conditions             |
|---------------------------|-----------|--------------|------------------|------------------------|
| Collector-emitter voltage | $V_{CES}$ | 900          | V                | $V_{GE} = 0 \text{ V}$ |
| Gate-emitter voltage      | $V_{GES}$ | $\pm 25$     | V                |                        |
| Peak gate-emitter voltage | $V_{GEM}$ | $\pm 30$     | V                |                        |
| Collector current         | $I_C$     | 60           | A                |                        |
| Collector current (Pulse) | $I_{CM}$  | 120          | A                |                        |
| Emitter current           | $I_E$     | 40           | A                |                        |
| Maximum power dissipation | $P_C$     | 180          | W                |                        |
| Junction temperature      | $T_J$     | - 40 to +150 | $^\circ\text{C}$ |                        |
| Storage temperature       | $T_{stg}$ | - 40 to +150 | $^\circ\text{C}$ |                        |

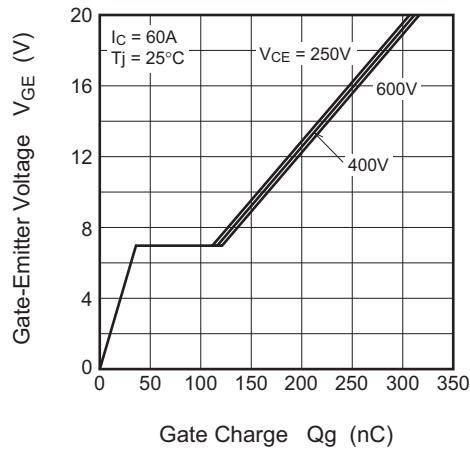
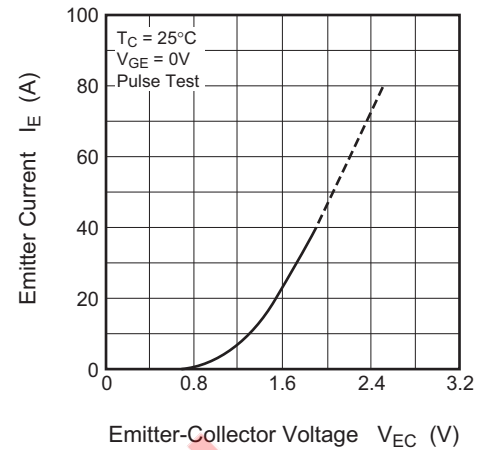
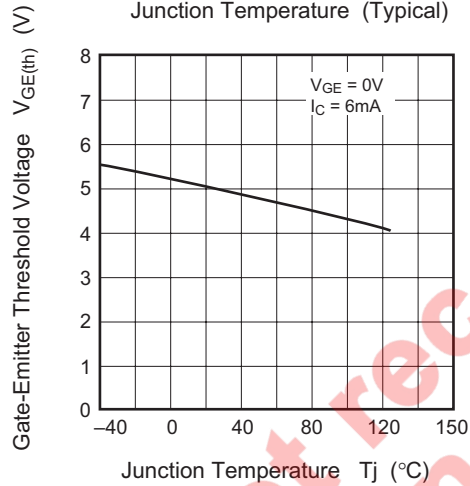
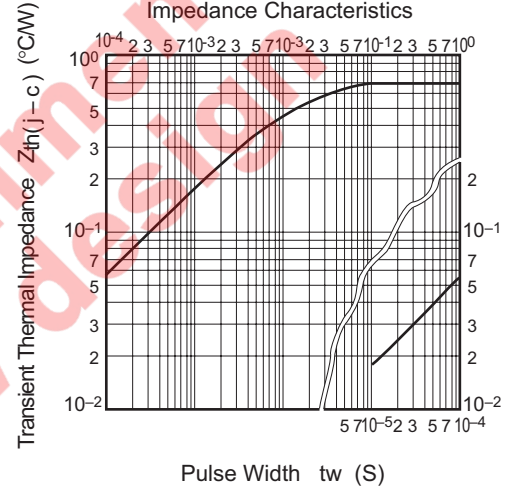
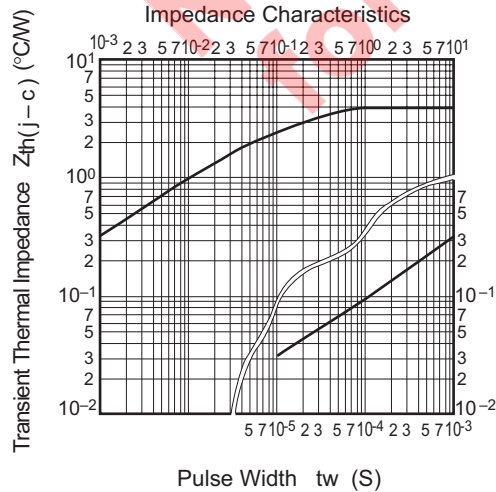
## Electrical Characteristics

(T<sub>ch</sub> = 25°C)

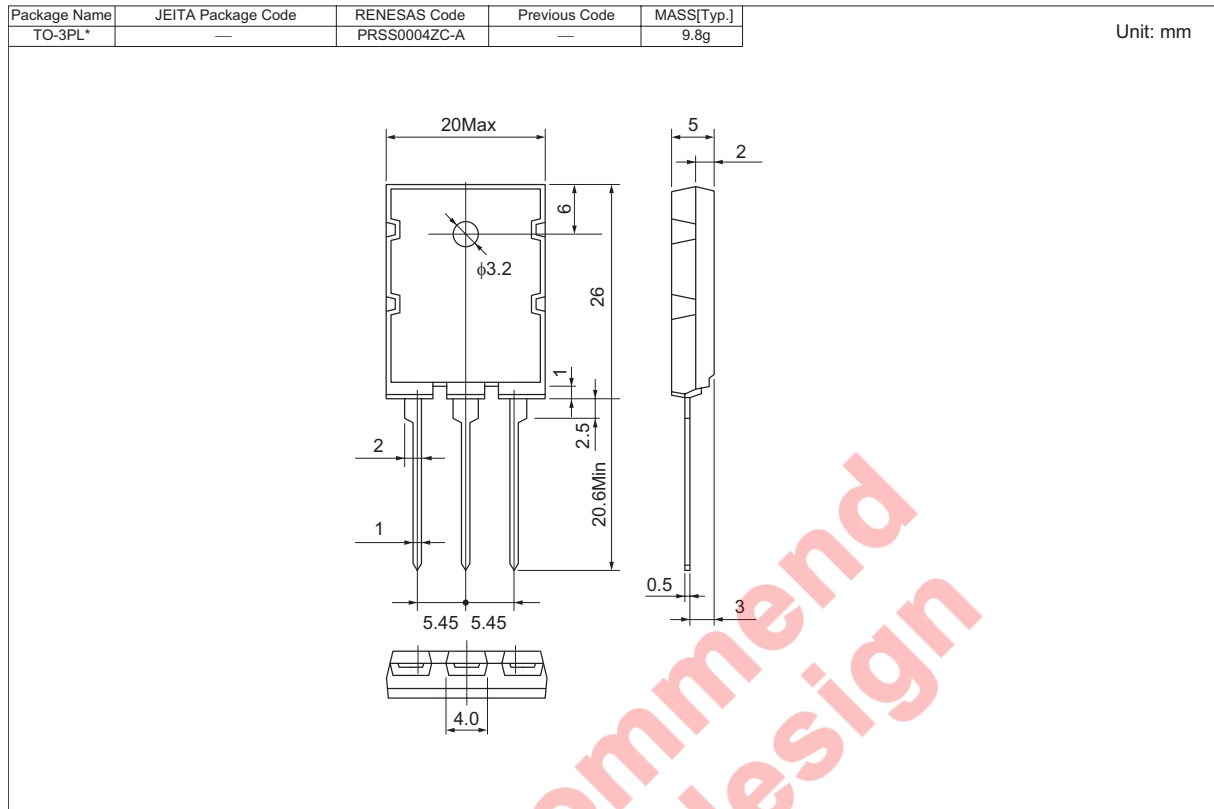
| Parameter                            | Symbol               | Min. | Typ. | Max. | Unit   | Test conditions  |
|--------------------------------------|----------------------|------|------|------|--------|--|
| Collector-emitter leakage current    | I <sub>CEs</sub>     | —    | —    | 1    | mA     | V <sub>CE</sub> = 900 V, V <sub>GE</sub> = 0 V   |
| Gate-emitter leakage current         | I <sub>GES</sub>     | —    | —    | 0.5  | μA     | V <sub>GE</sub> = ±20 V, V <sub>CE</sub> = 0 V   |
| Gate-emitter threshold voltage       | V <sub>GE(th)</sub>  | 2.0  | 4.0  | 6.0  | V      | V <sub>CE</sub> = 10 V, I <sub>C</sub> = 6 mA  |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | —    | 2.1  | 2.7  | V      | I <sub>C</sub> = 60 A, V <sub>CE</sub> = 15 V  |
| Input capacitance                    | C <sub>ies</sub>     | —    | 4400 | —    | pF     | V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V,<br>f = 1 MHz                                      |
| Output capacitance                   | C <sub>oes</sub>     | —    | 115  | —    | pF     |  |
| Reverse transfer capacitance         | C <sub>res</sub>     | —    | 75   | —    | pF     |  |
| Turn-on delay time                   | t <sub>d(on)</sub>   | —    | 0.05 | —    | μs     | V <sub>CC</sub> = 300 V, I <sub>C</sub> = 60 A,<br>V <sub>GE</sub> = 15 V, R <sub>G</sub> = 10 Ω |
| Turn-on Rise time                    | t <sub>r</sub>       | —    | 0.1  | —    | μs     |  |
| Turn-off delay time                  | t <sub>d(off)</sub>  | —    | 0.2  | —    | μs     |  |
| Turn-off Fall time                   | t <sub>f</sub>       | —    | 0.3  | —    | μs     |  |
| Tail loss                            | E <sub>tail</sub>    | —    | 0.6  | 1.0  | mJ/pls | I <sub>CP</sub> = 60 A, T <sub>j</sub> = 125°C,<br>d <sub>V</sub> /d <sub>t</sub> = 200 V/μs     |
| Tail current                         | I <sub>tail</sub>    | —    | 6.0  | 12   | A      |  |
| Emitter-collector voltage            | V <sub>EC</sub>      | —    | 2.2  | 3.0  | V      | I <sub>E</sub> = 60 A, V <sub>GE</sub> = 0 V   |
| Diode reverse recovery time          | t <sub>rr</sub>      | —    | 0.5  | 2.0  | μs     | I <sub>E</sub> = 60 A, d <sub>IS</sub> /d <sub>t</sub> = -20 A/μs                                |
| Thermal resistance (IGBT)            | R <sub>th(j-c)</sub> | —    | —    | 0.69 | °C/W   | Junction to case   |
| Thermal resistance (Diode)           | R <sub>th(j-c)</sub> | —    | —    | 4.0  | °C/W   | Junction to case   |

## Performance Curves



Gate-Emitter Voltage vs.  
Gate Charge Characteristic (Typical)Emitter Current vs.  
Emitter-Collector Voltage (Typical)Gate-Emitter Threshold Voltage vs.  
Junction Temperature (Typical)IGBT Transient Thermal  
Impedance CharacteristicsDiode Transient Thermal  
Impedance Characteristics

## Package Dimensions



## Ordering Information

| Lead form     | Standard packing        | Quantity | Standard order code           | Standard order code example |
|---------------|-------------------------|----------|-------------------------------|-----------------------------|
| Straight type | Plastic Magazine (Tube) | 25       | Type name                     | CT60AM-18F                  |
| Lead form     | Plastic Magazine (Tube) | 25       | Type name – Lead forming code | CT60AM-18F-AD               |

Note: Please confirm the specification about the shipping in detail.

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