

# CT60AM-18C

## Insulated Gate Bipolar Transistor

REJ03G0287-0100

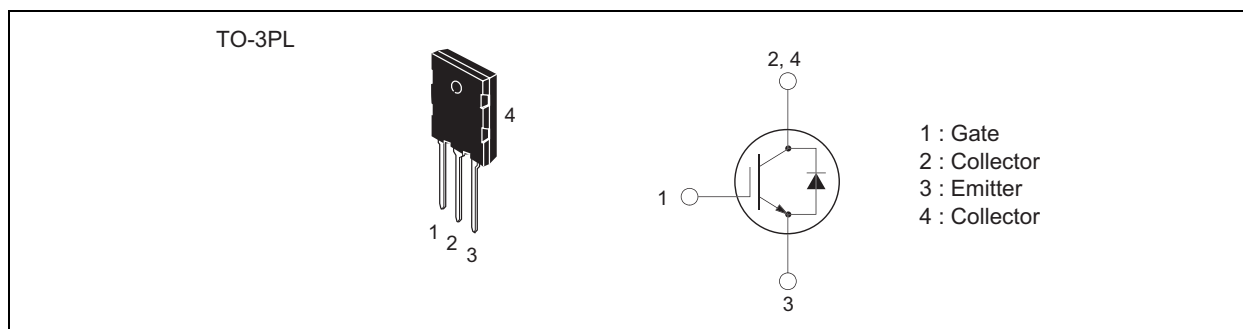
Rev.1.00

Aug.20.2004

### Features

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

### Appearance Figure



### Applications

Voltage-resonance type home appliances (Microwave ovens, IH cooking devices, IH 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	$V_{GES}$	$\pm 20$	V	$V_{CE} = 0 \text{ V}$
Peak gate-emitter voltage	$V_{GEM}$	$\pm 30$	V	$V_{CE} = 0 \text{ V}$
Collector current	$I_C$	60	A	
Collector current (Pulse)	$I_{CM}$	120	A	
Emitter current	$I_E$	40	A	
Maximum power dissipation	$P_C$	200	W	$T_c = 25^\circ\text{C}$
Junction temperature	$T_j$	- 40 to +150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	- 40 to +150	$^\circ\text{C}$	

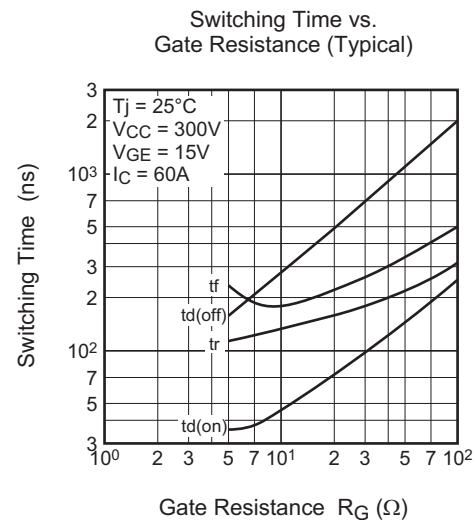
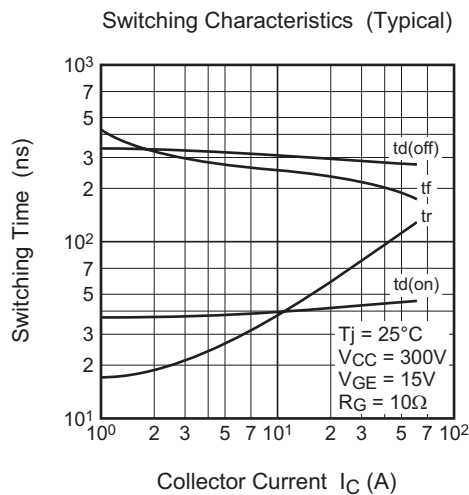
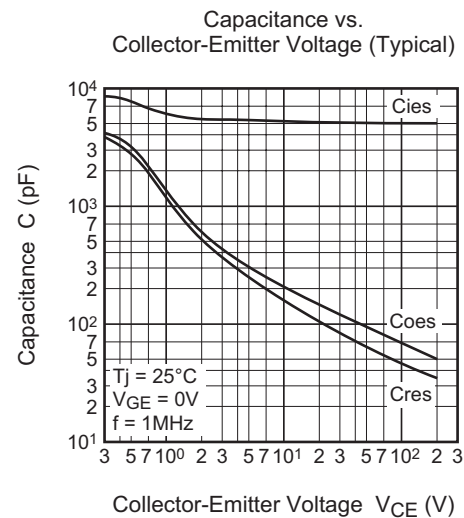
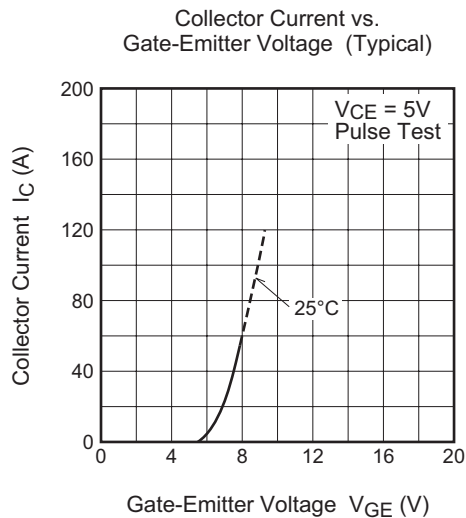
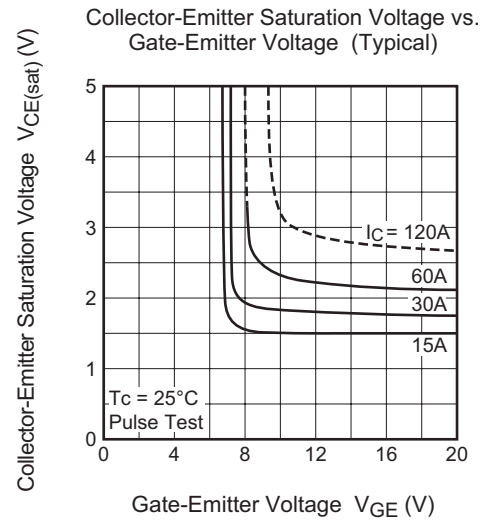
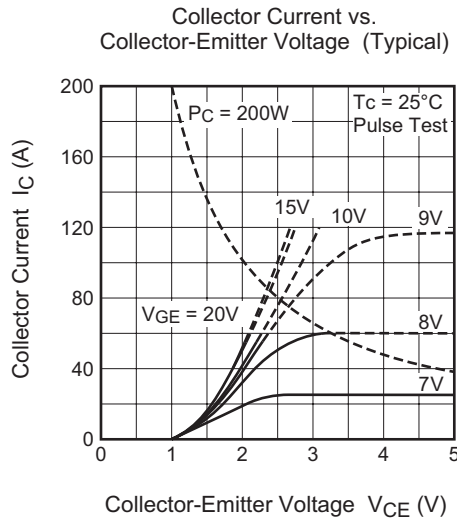
## Electrical Characteristics

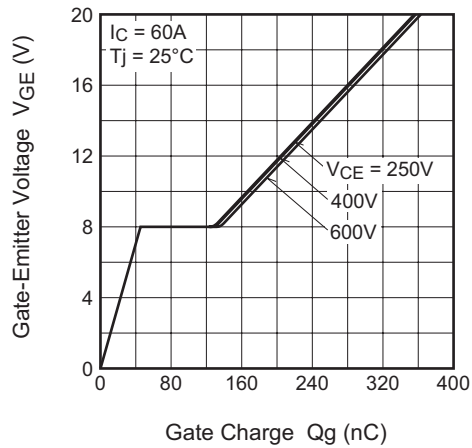
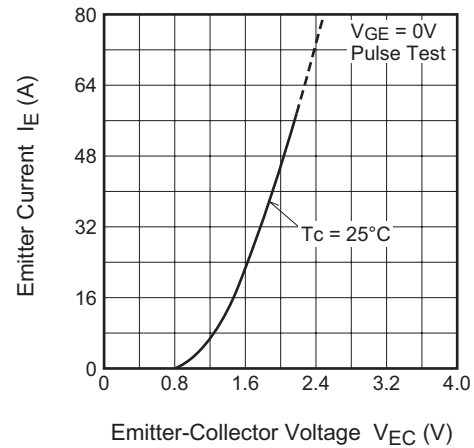
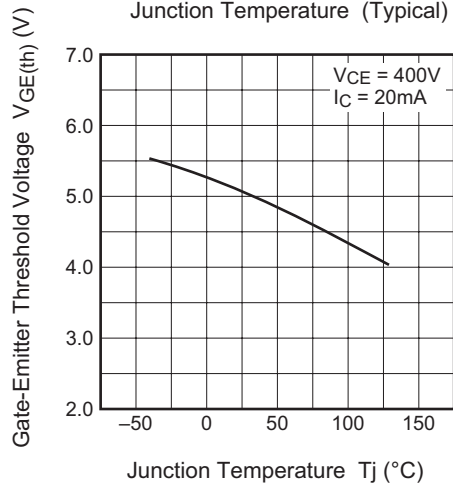
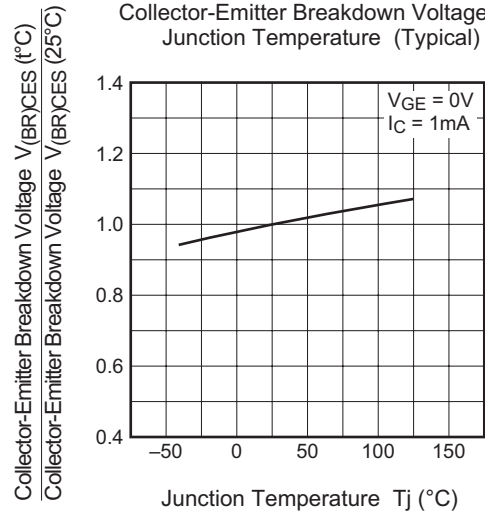
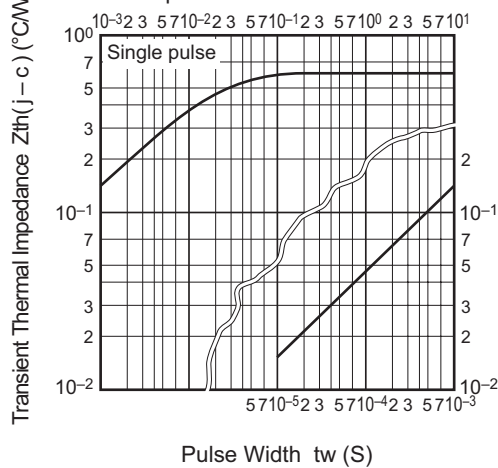
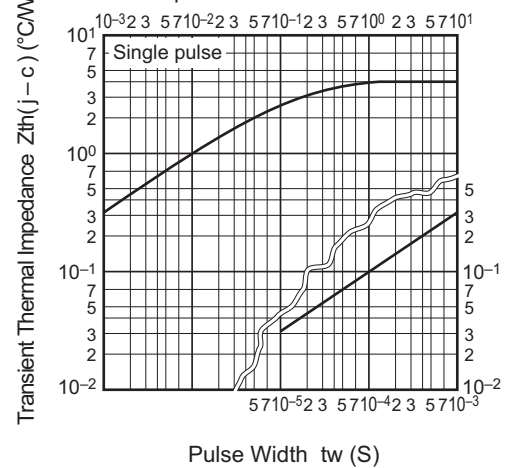
(Unless otherwise specified,  $T_j = 25^\circ\text{C}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	$V_{(BR)CES}$	1000 <sup>not e1</sup>	—	—	V	$I_C = 1\text{ mA}$ , $V_{GE} = 0\text{ V}$
Collector-emitter leakage current	$I_{CES}$	—	—	1	mA	$V_{CE} = 900\text{ V}$ , $V_{GE} = 0\text{ V}$
Gate-emitter leakage current	$I_{GES}$	—	—	$\pm 0.5$	$\mu\text{A}$	$V_{GE} = \pm 20\text{ V}$ , $V_{CE} = 0\text{ V}$
Gate-emitter threshold voltage	$V_{GE(th)}$	2.0	4.0	6.0	V	$I_C = 6\text{ mA}$ , $V_{CE} = 10\text{ V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	2.0	2.7	V	$I_C = 60\text{ A}$ , $V_{CE} = 15\text{ V}$
Input capacitance	$C_{iss}$	—	5000	—	pF	$V_{CE} = 25\text{ V}$ , $V_{GE} = 0\text{ V}$ , $f = 1\text{ MHz}$
Output capacitance	$C_{oss}$	—	125	—	pF	
Reverse transfer capacitance	$C_{rss}$	—	85	—	pF	
Turn-on delay time	$t_{d(on)}$	—	0.05	—	$\mu\text{s}$	$I_C = 60\text{ A}$ , Resistive loads, $V_{CC} = 300\text{ V}$ , $V_{GE} = 15\text{ V}$ , $R_G = 10\ \Omega$
Rise time	$t_r$	—	0.12	—	$\mu\text{s}$	
Turn-off delay time	$t_{d(off)}$	—	0.30	—	$\mu\text{s}$	
Fall time	$t_f$	—	0.25	—	$\mu\text{s}$	
Tail loss	$E_{tail}$	—	0.6	1.0	mJ/pls	$I_{CP} = 60\text{ A}$ , $T_j = 125^\circ\text{C}$ , $dv/dt = 200\text{ V}/\mu\text{s}$ , Single-device voltage resonance circuit
Tail current	$I_{tail}$	—	6	12	A	
Emitter-collector voltage	$V_{EC}$	—	—	3	V	$I_E = 60\text{ A}$ , $V_{GE} = 0\text{ V}$
Diode reverse recovery time	$t_{rr}$	—	0.5	2	$\mu\text{s}$	$I_E = 60\text{ A}$ , $di/dt = 20\text{ A}/\mu\text{s}$
Thermal resistance (IGBT)	$R_{th(j-c)}$	—	—	0.625	$^\circ\text{C}/\text{W}$	Junction to case
Thermal resistance (Diode)	$R_{th(j-c)}$	—	—	4.0	$^\circ\text{C}/\text{W}$	Junction to case

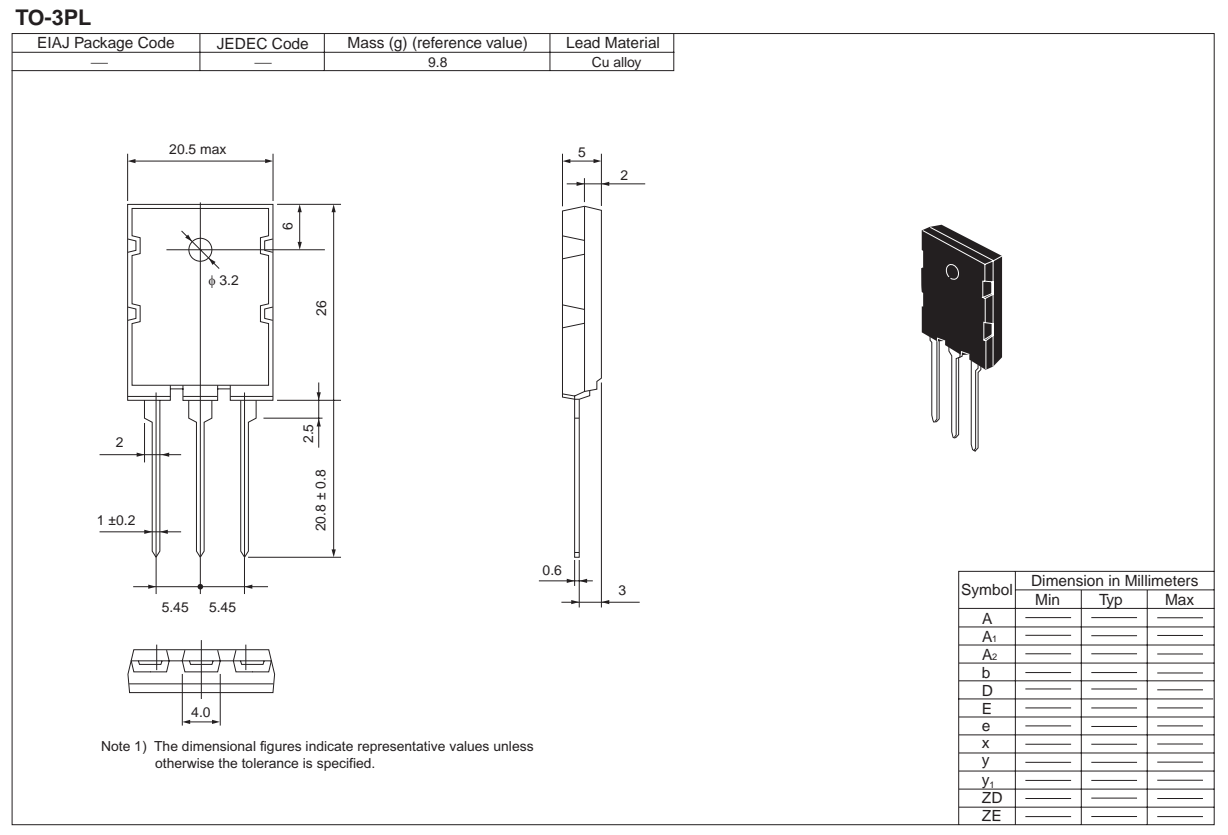
Notes: 1 Selected value

## 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)Collector-Emitter Breakdown Voltage vs.  
Junction Temperature (Typical)IGBT Transient Thermal  
Impedance CharacteristicsDiode Transient Thermal  
Impedance Characteristics

## Package Dimensions



## Order Code

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

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

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