

# CT60AM-18C

## Insulated Gate Bipolar Transistor

REJ03G0287-0100

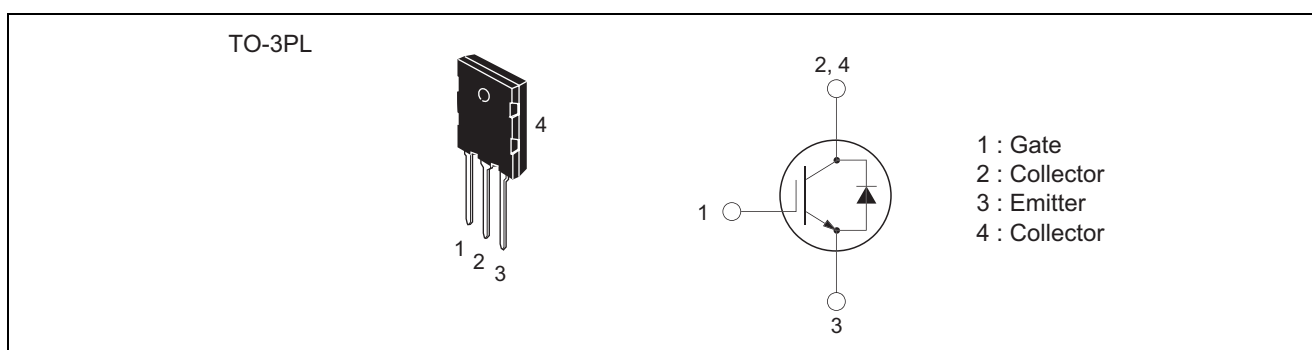
Rev.1.00

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	$^\circ\text{C}$	

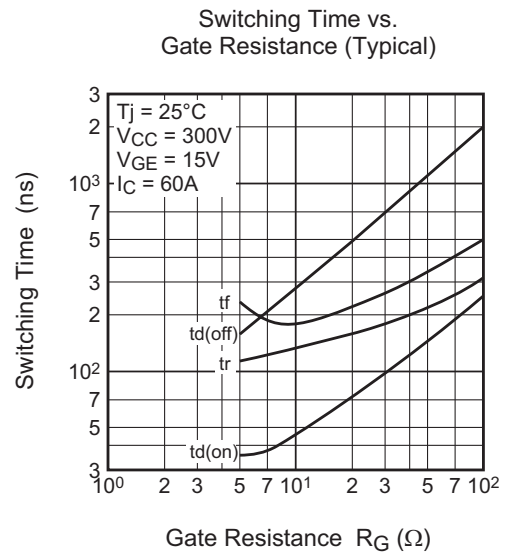
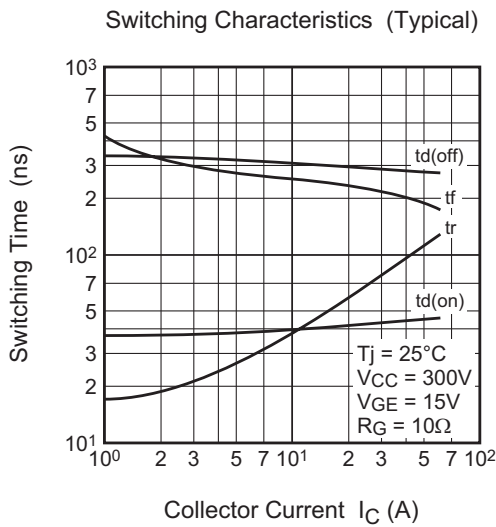
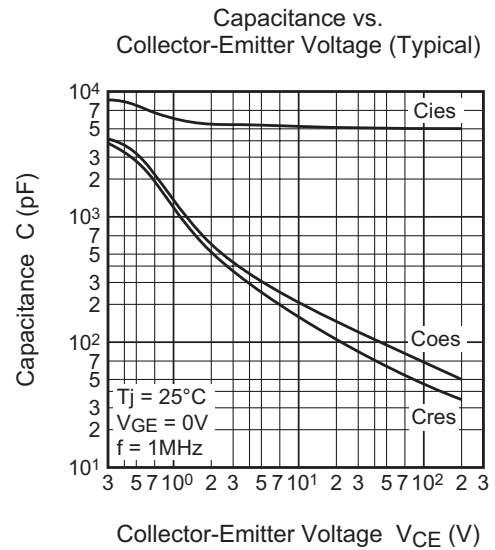
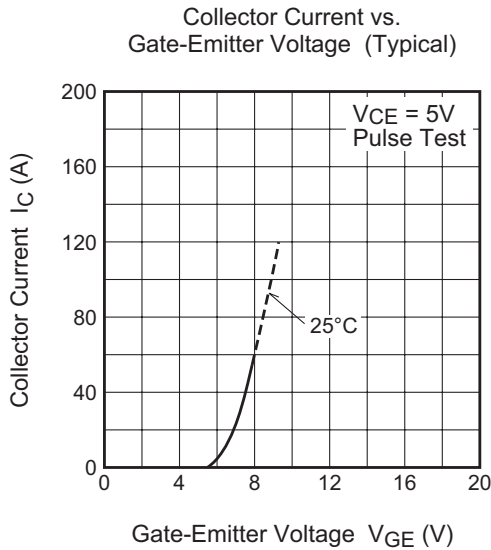
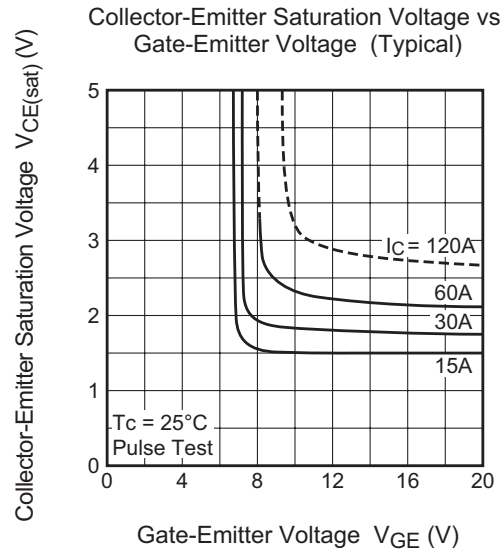
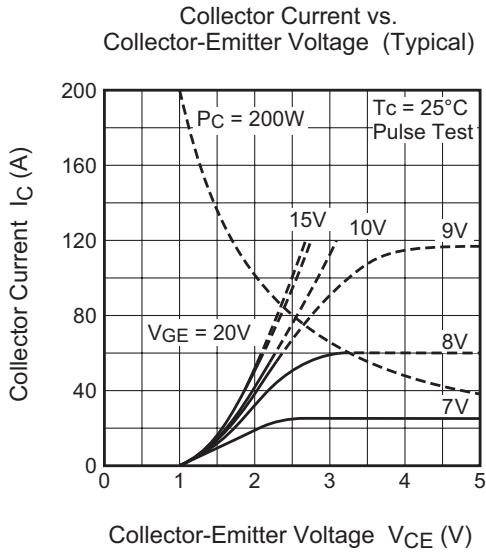
## Electrical Characteristics

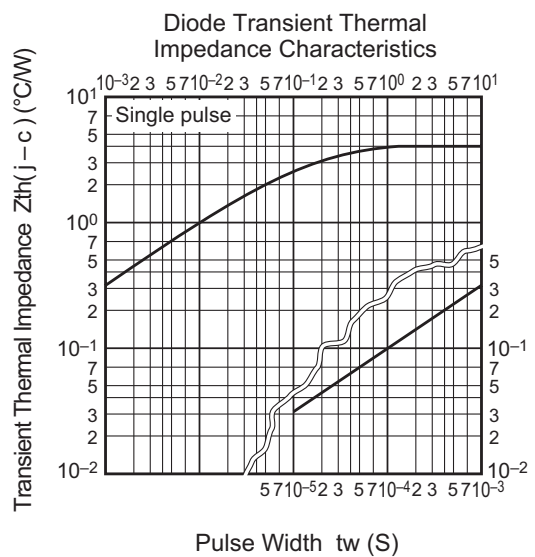
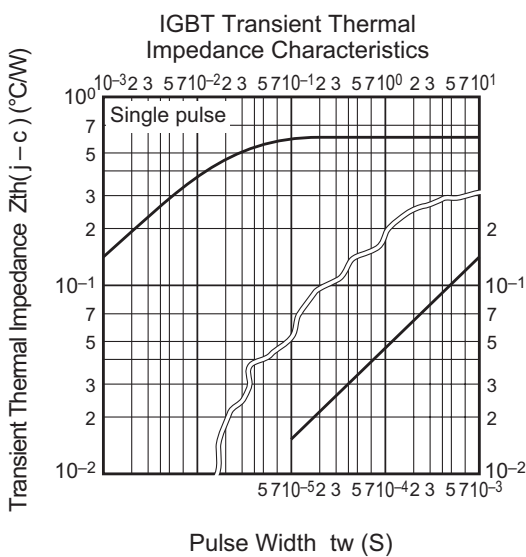
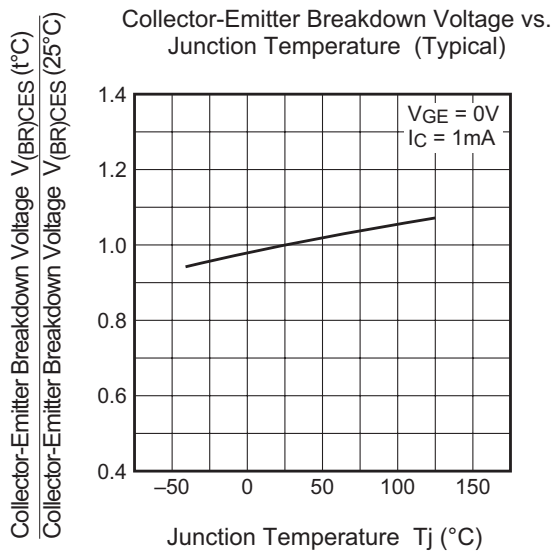
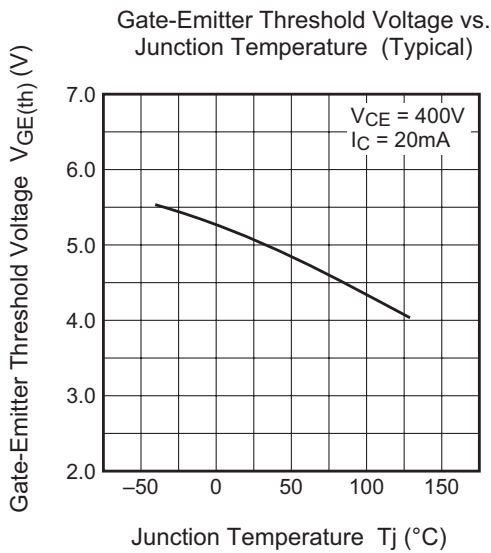
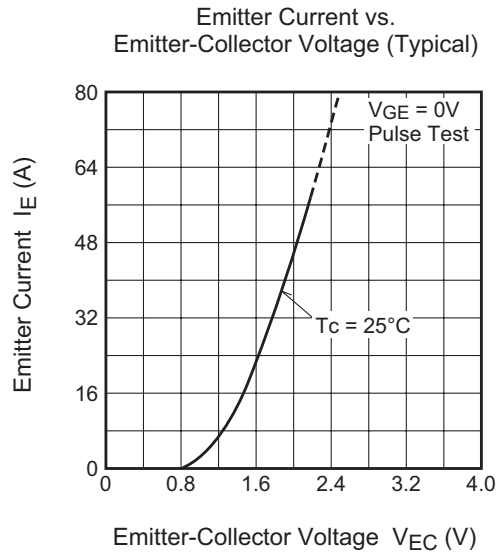
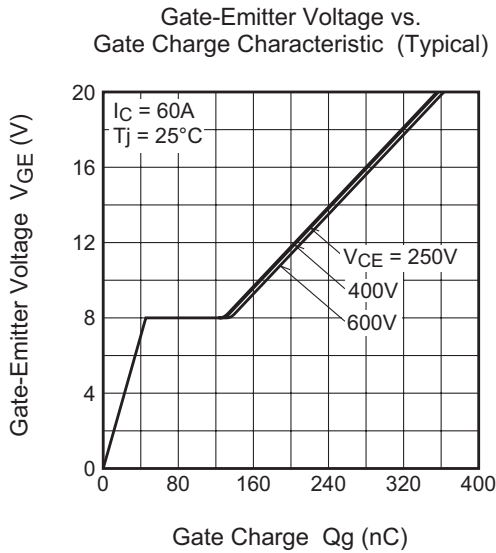
(Unless otherwise specified, T<sub>j</sub> = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	V <sub>(BR)CES</sub>	1000 <sup>not e1</sup>	—	—	V	I <sub>C</sub> = 1 mA, V <sub>GE</sub> = 0 V
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	I <sub>C</sub> = 6 mA, V <sub>CE</sub> = 10 V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	2.0	2.7	V	I <sub>C</sub> = 60 A, V <sub>CE</sub> = 15 V
Input capacitance	C <sub>iss</sub>	—	5000	—	pF	V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V, f = 1MHz
Output capacitance	C <sub>oss</sub>	—	125	—	pF	
Reverse transfer capacitance	C <sub>rss</sub>	—	85	—	pF	
Turn-on delay time	t <sub>d(on)</sub>	—	0.05	—	μs	I <sub>C</sub> = 60 A, Resistive loads, V <sub>CC</sub> = 300 V, V <sub>GE</sub> = 15 V, R <sub>G</sub> = 10 Ω
Rise time	t <sub>r</sub>	—	0.12	—	μs	
Turn-off delay time	t <sub>d(off)</sub>	—	0.30	—	μs	
Fall time	t <sub>f</sub>	—	0.25	—	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, dv/dt = 200 V/μs, Single-device voltage resonance circuit
Tail current	I <sub>tail</sub>	—	6	12	A	
Emitter-collector voltage	V <sub>EC</sub>	—	—	3	V	I <sub>E</sub> = 60 A, V <sub>GE</sub> = 0 V
Diode reverse recovery time	t <sub>rr</sub>	—	0.5	2	μs	I <sub>E</sub> = 60 A, di/dt = 20 A/μs
Thermal resistance (IGBT)	R <sub>th(j-c)</sub>	—	—	0.625	°C/W	Junction to case
Thermal resistance (Diode)	R <sub>th(j-c)</sub>	—	—	4.0	°C/W	Junction to case

Notes: 1 Selected value

Performance Curves





### Package Dimensions

**TO-3PL**

EIAJ Package Code	JEDEC Code	Mass (g) (reference value)	Lead Material
—	—	9.8	Cu alloy

Note 1) The dimensional figures indicate representative values unless otherwise the tolerance is specified.

Symbol	Dimension in Millimeters		
	Min	Typ	Max
A	—	—	—
A <sub>1</sub>	—	—	—
A <sub>2</sub>	—	—	—
b	—	—	—
D	—	—	—
E	—	—	—
e	—	—	—
x	—	—	—
y	—	—	—
y <sub>1</sub>	—	—	—
ZD	—	—	—
ZE	—	—	—

### 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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