

CT60AM-18C

Insulated Gate Bipolar Transistor

REJ03G0287-0100

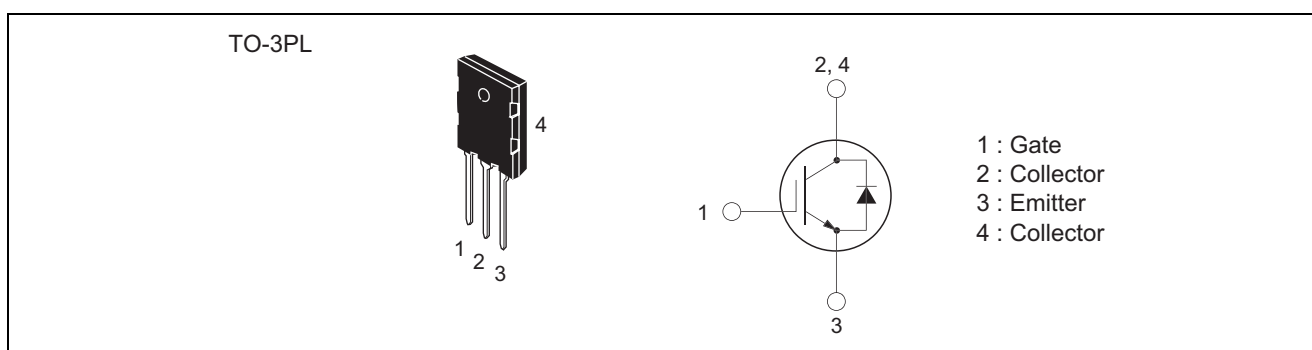
Rev.1.00

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}	± 20	V	$V_{CE} = 0\text{ V}$
Peak gate-emitter voltage	V_{GEM}	± 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	$^\circ\text{C}$	

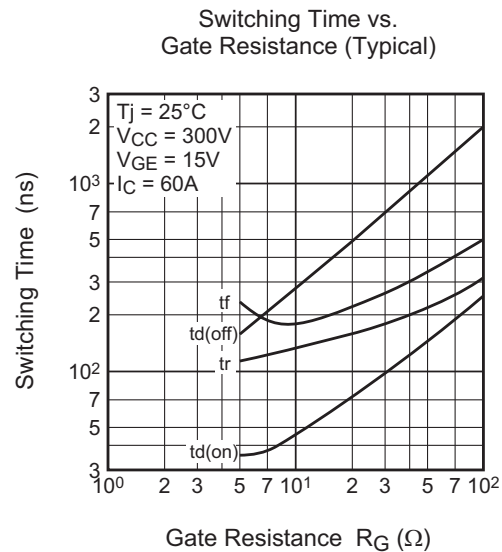
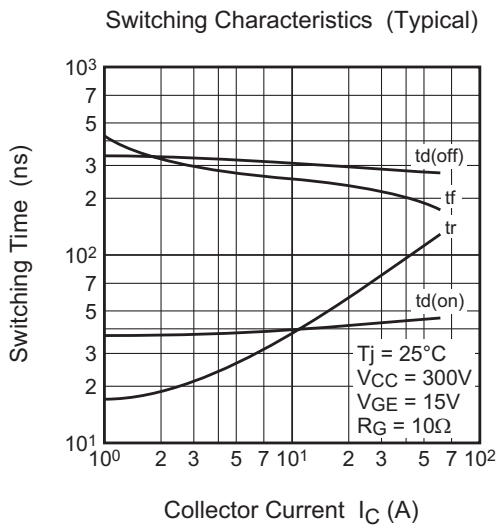
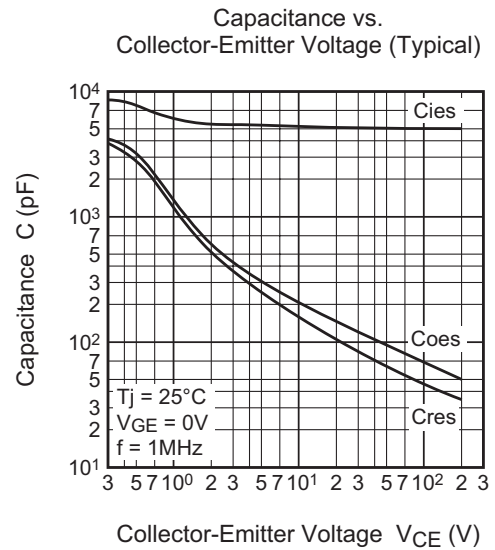
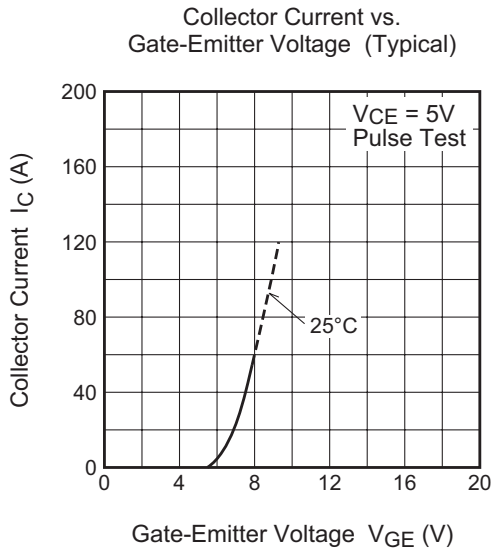
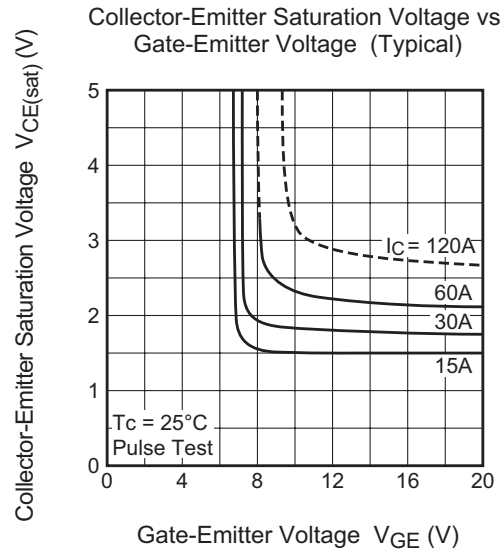
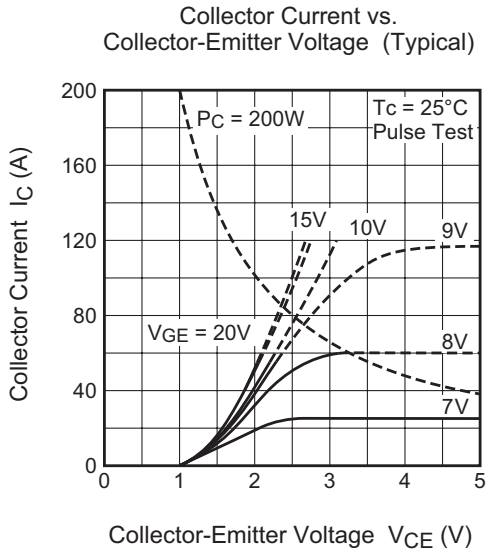
Electrical Characteristics

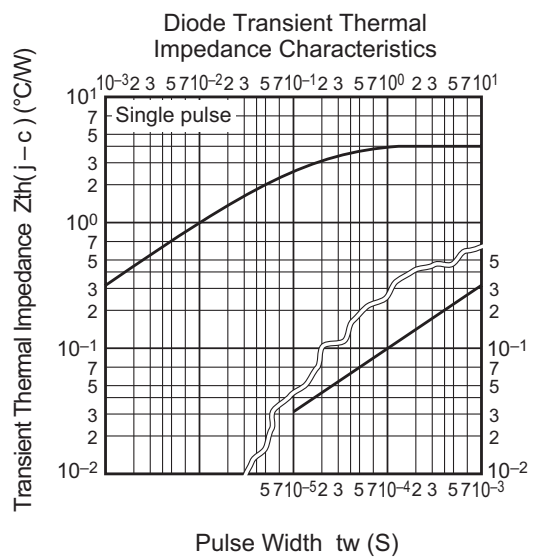
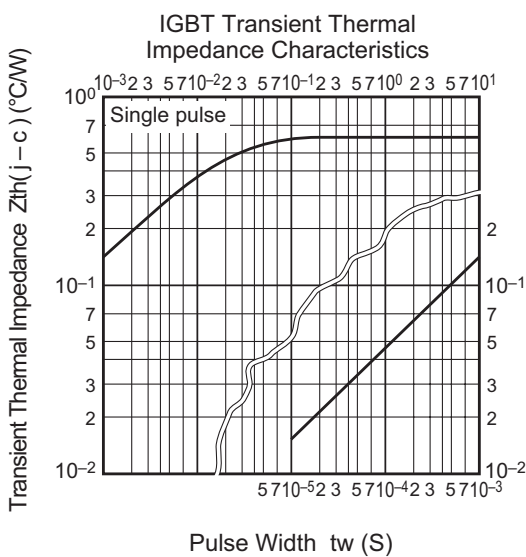
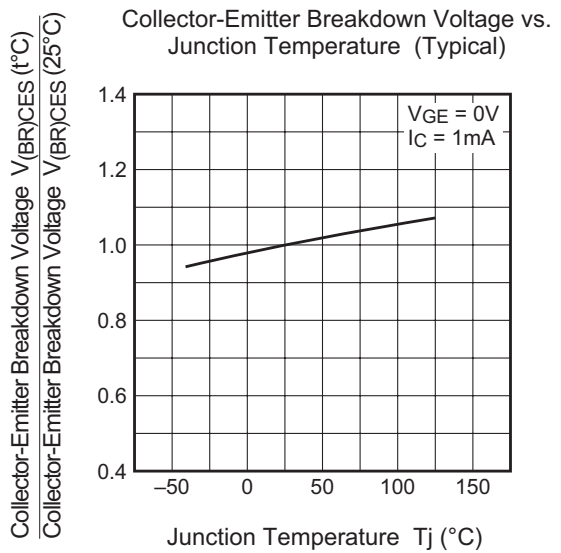
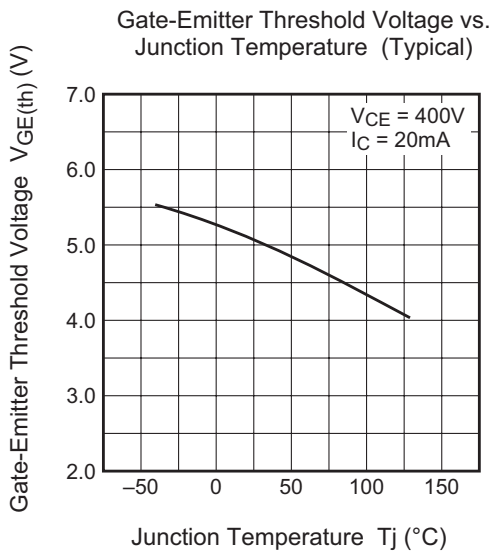
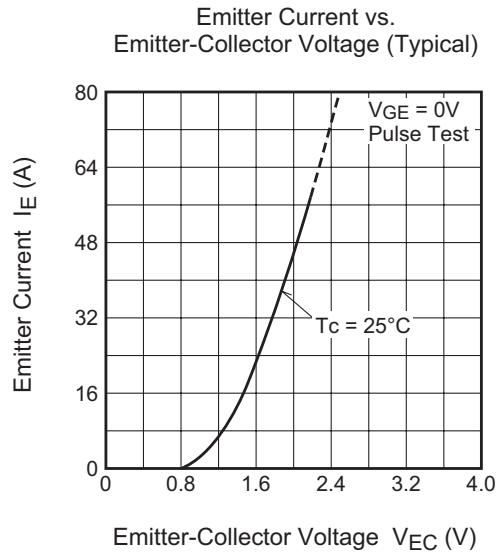
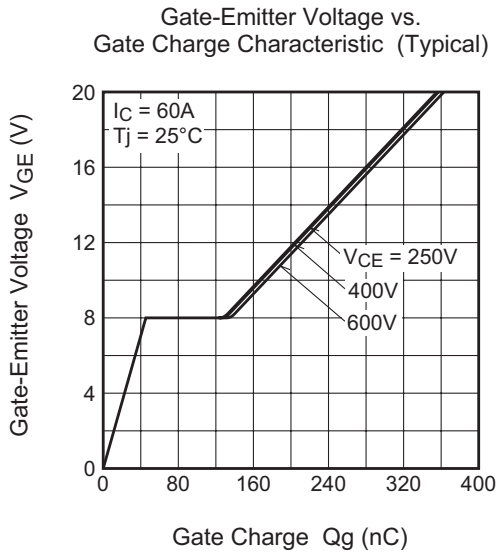
(Unless otherwise specified, $T_j = 25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	$V_{(BR)CES}$	1000^{not} $e1$	—	—	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}	—	—	± 0.5	μA	$V_{GE} = \pm 20 \text{ V}$, $V_{CE} = 0 \text{ V}$
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	—	μs	$I_C = 60 \text{ A}$, Resistive loads, $V_{CC} = 300 \text{ V}$, $V_{GE} = 15 \text{ V}$, $R_G = 10 \Omega$
Rise time	t_r	—	0.12	—	μs	
Turn-off delay time	$t_{d(off)}$	—	0.30	—	μs	
Fall time	t_f	—	0.25	—	μs	
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	μs	$I_E = 60 \text{ A}$, $di/dt = 20 \text{ A}/\mu\text{s}$
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





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 ₁	—	—	—
A ₂	—	—	—
b	—	—	—
D	—	—	—
E	—	—	—
e	—	—	—
x	—	—	—
y	—	—	—
y ₁	—	—	—
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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