CT60AM-18C

Insulated Gate Bipolar Transistor

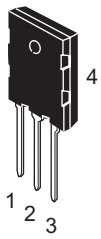
REJ03G0287-0100
Rev.1.00
Aug.20.2004

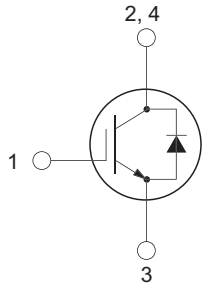
Features

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

Appearance Figure

TO-3PL





1 : Gate
2 : Collector
3 : Emitter
4 : Collector

Applications

Voltage-resonance type home appliances (Microwave ovens, IH cooking devices, IH rice-cookers)

Maximum Ratings

(Tc = 25°C)

Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	V_{CES}	900	V	V_{GE} = 0 V
Gate-emitter voltage	V_{GES}	±20	V	V_{CE} = 0 V
Peak gate-emitter voltage	V_{GEM}	±30	V	V_{CE} = 0 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	Tc = 25°C
Junction temperature	Tj	– 40 to +150	°C	
Storage temperature	Tstg	– 40 to +150	°C	

Electrical Characteristics

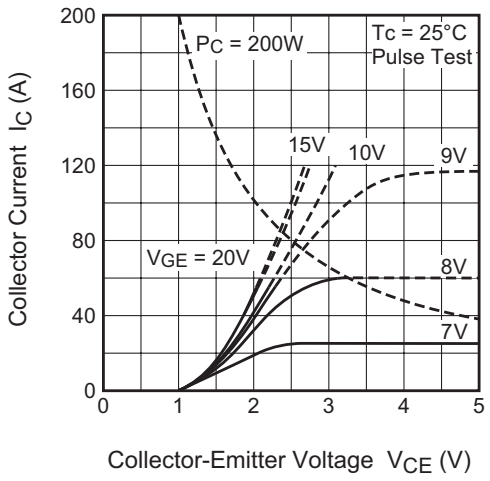
(Unless otherwise specified, Tj = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	$V_{(BR)CES}$	1000 not e1	—	—	V	I_C = 1 mA, V_{GE} = 0 V
Collector-emitter leakage current	I_{CES}	—	—	1	mA	V_{CE} = 900 V, V_{GE} = 0 V
Gate-emitter leakage current	I_{GES}	—	—	±0.5	µA	V_{GE} = ±20 V, V_{CE} = 0 V
Gate-emitter threshold voltage	$V_{GE(th)}$	2.0	4.0	6.0	V	I_C = 6 mA, V_{CE} = 10 V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	2.0	2.7	V	I_C = 60 A, V_{GE} = 15 V
Input capacitance	Ciss	—	5000	—	pF	V_{CE} = 25 V, V_{GE} = 0 V, f = 1MHz
Output capacitance	Coss	—	125	—	pF	
Reverse transfer capacitance	Crss	—	85	—	pF	
Turn-on delay time	$t_{d(on)}$	—	0.05	—	µs	I_C = 60 A, Resistive loads, V_{CC} = 300 V, V_{GE} = 15 V, R_G = 10 Ω
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	Etail	—	0.6	1.0	mJ/pls	I_{CP} = 60 A, Tj = 125°C, dv/dt = 200 V/µs, Single-device voltage resonance circuit
Tail current	I_{tail}	—	6	12	A	
Emitter-collector voltage	V_{EC}	—	—	3	V	I_E = 60 A, V_{GE} = 0 V
Diode reverse recovery time	t_{rr}	—	0.5	2	µs	I_E = 60 A, di/dt = 20 A/µs
Thermal resistance (IGBT)	Rth(j-c)	—	—	0.625	°C/W	Junction to case
Thermal resistance (Diode)	Rth(j-c)	—	—	4.0	°C/W	Junction to case

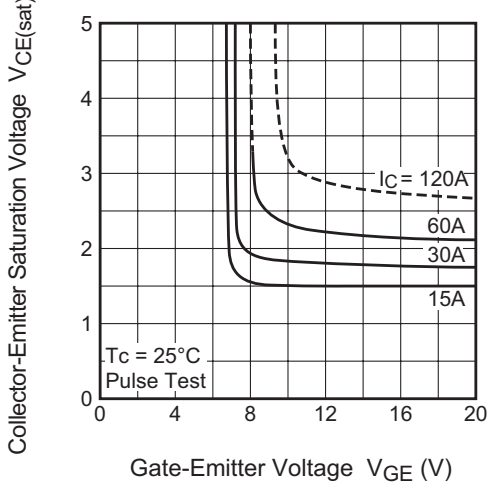
Notes: 1 Selected value

Performance Curves

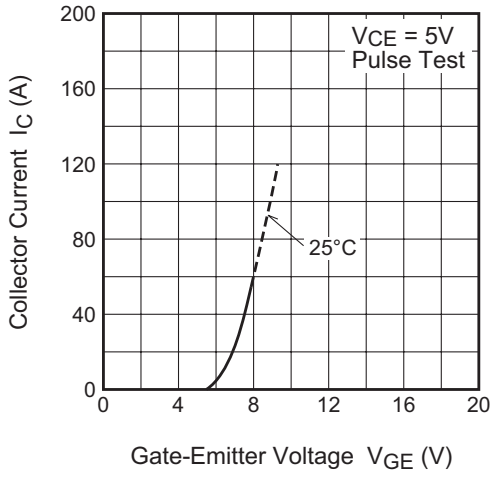
Collector Current vs.
Collector-Emitter Voltage (Typical)



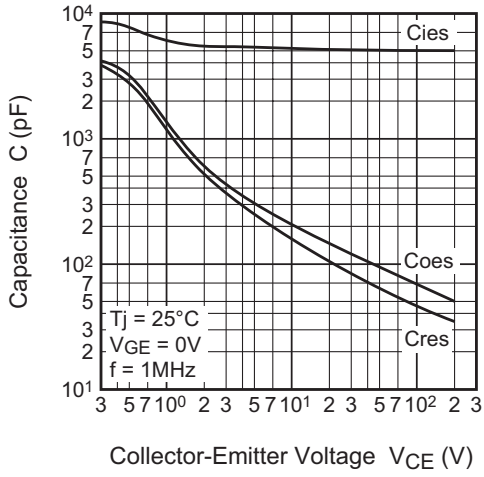
Collector-Emitter Saturation Voltage vs.
Gate-Emitter Voltage (Typical)



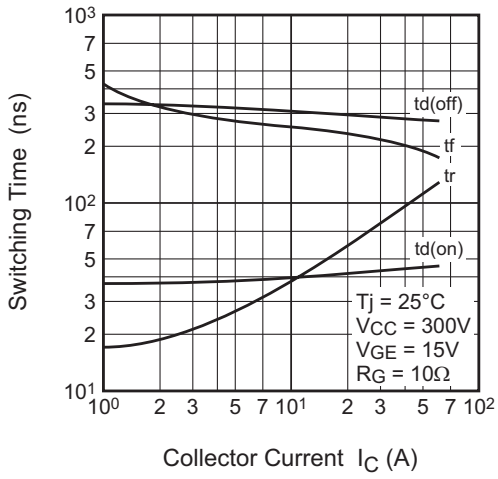
Collector Current vs.
Gate-Emitter Voltage (Typical)



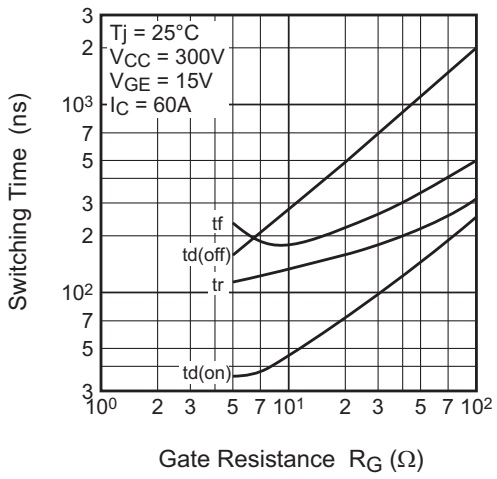
Capacitance vs.
Collector-Emitter Voltage (Typical)



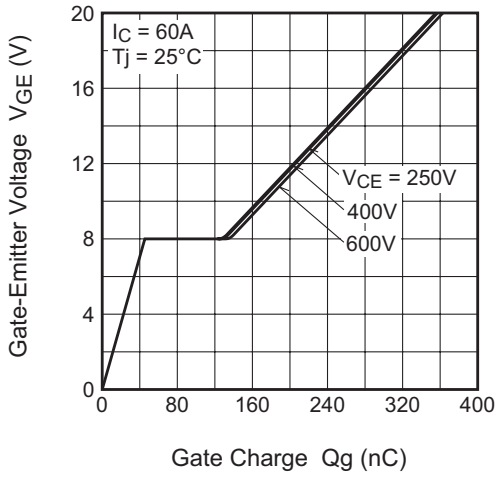
Switching Characteristics (Typical)



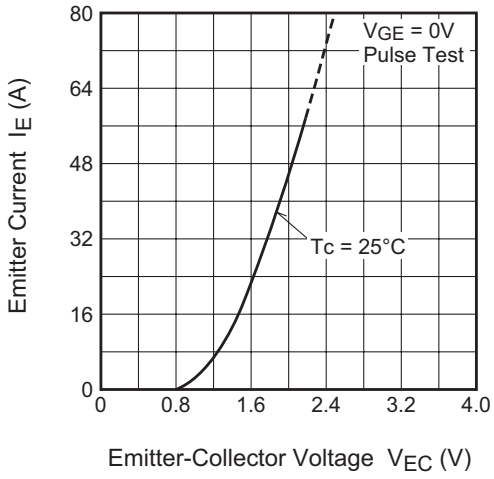
Switching Time vs.
Gate Resistance (Typical)



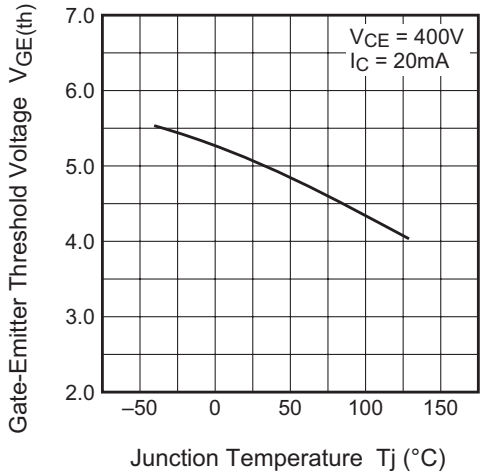
Gate-Emitter Voltage vs.
Gate Charge Characteristic (Typical)



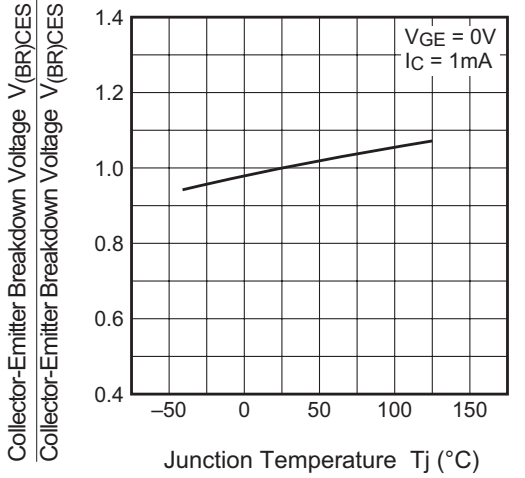
Emitter Current vs.
Emitter-Collector Voltage (Typical)



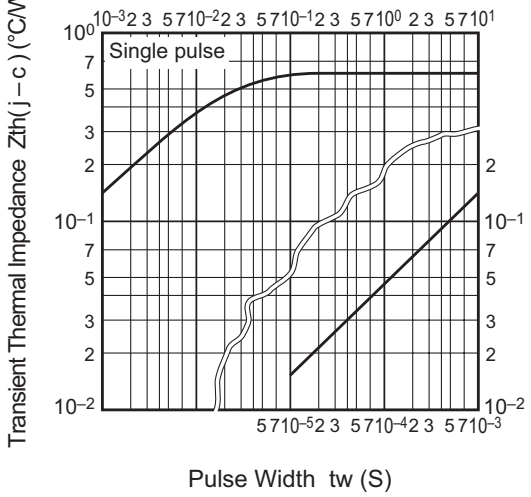
Gate-Emitter Threshold Voltage vs.
Junction Temperature (Typical)



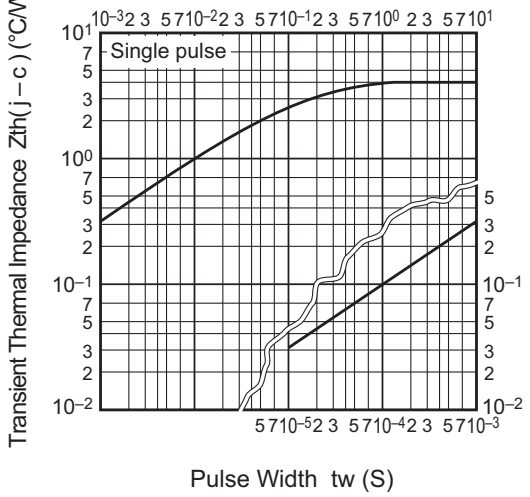
Collector-Emitter Breakdown Voltage vs.
Junction Temperature (Typical)



IGBT Transient Thermal
Impedance Characteristics



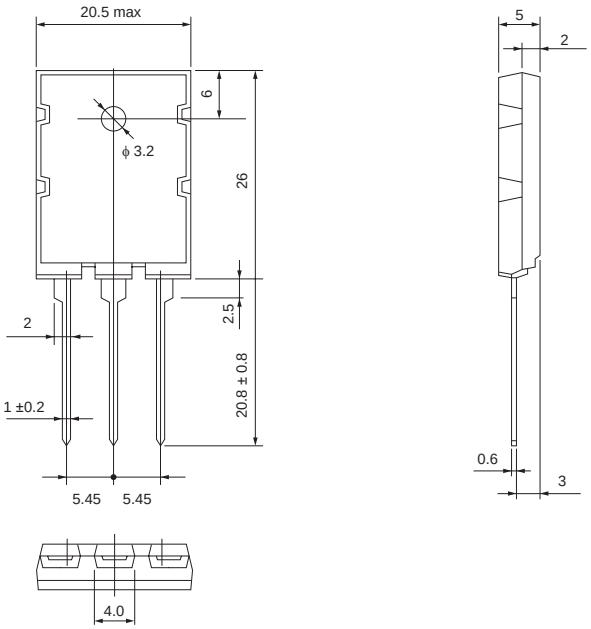
Diode Transient Thermal
Impedance Characteristics

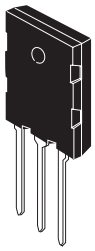


Package Dimensions

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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