To all our customers

Regarding the change of names mentioned in the document, such as Mitsubishi Electric and Mitsubishi XX, to Renesas Technology Corp.

The semiconductor operations of Hitachi and Mitsubishi Electric were transferred to Renesas Technology Corporation on April 1st 2003. These operations include microcomputer, logic, analog and discrete devices, and memory chips other than DRAMs (flash memory, SRAMs etc.) Accordingly, although Mitsubishi Electric, Mitsubishi Electric Corporation, Mitsubishi Semiconductors, and other Mitsubishi brand names are mentioned in the document, these names have in fact all been changed to Renesas Technology Corp. Thank you for your understanding. Except for our corporate trademark, logo and corporate statement, no changes whatsoever have been made to the contents of the document, and these changes do not constitute any alteration to the contents of the document itself.

Note : Mitsubishi Electric will continue the business operations of high frequency & optical devices and power devices.

Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

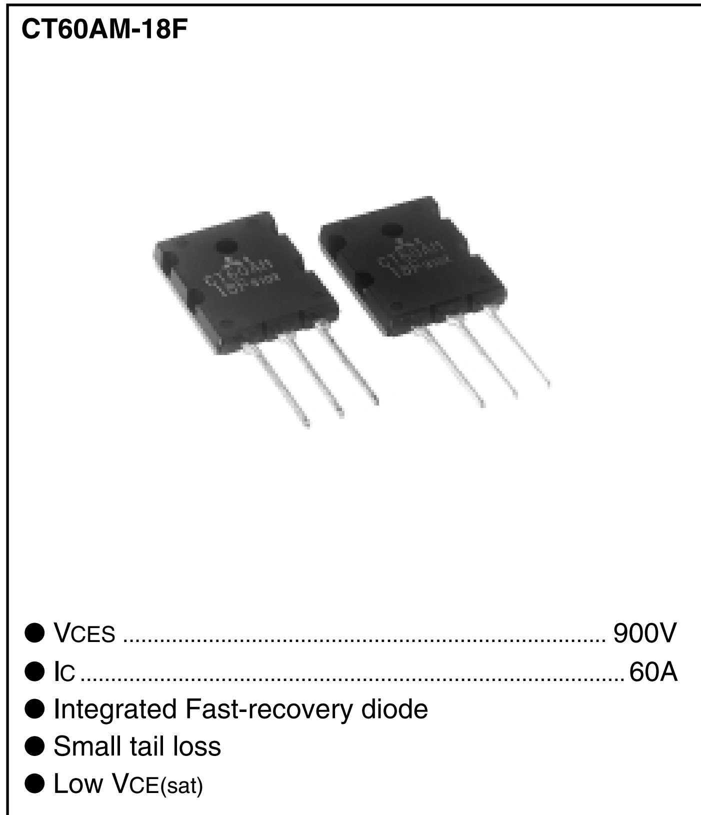
RENESAS
Renesas Technology Corp.

MITSUBISHI Nch IGBT

CT60AM-18F

INSULATED GATE BIPOLAR TRANSISTOR

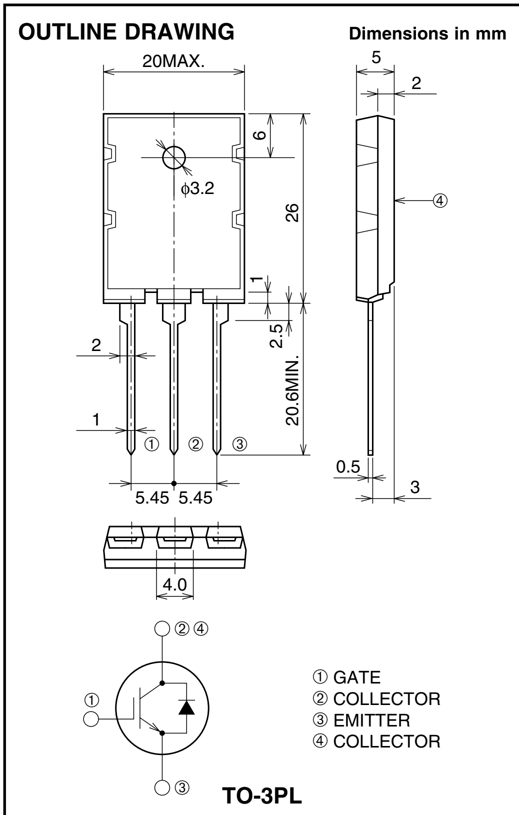
CT60AM-18F



- V_{CES} 900V
- I_C 60A
- Integrated Fast-recovery diode
- Small tail loss
- Low $V_{CE(sat)}$

OUTLINE DRAWING

Dimensions in mm



APPLICATION

Microwave oven, Electromagnetic cooking devices, Rice-cookers

MAXIMUM RATINGS (T_c = 25°C)

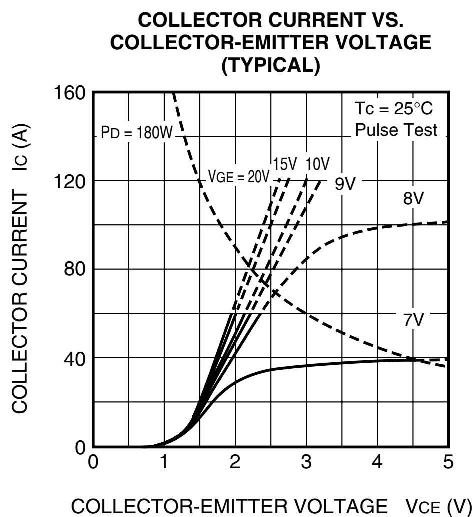
Symbol	Parameter	Conditions	Ratings	Unit
V_{CES}	Collector-Emitter Voltage	V_{GE} = 0V	900	V
V_{GES}	Gate-Emitter Voltage		±25	V
V_{GEM}	Peak Gate-Emitter Voltage		±30	V
I_C	Collector Current		60	A
I_{CM}	Collector Current (Pulse)		120	A
I_E	Emitter Current		40	A
P_C	Maximum Power Dissipation		180	W
T_j	Junction Temperature		–40 ~ +150	°C
T_{stg}	Storage Temperature		–40 ~ +150	°C

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

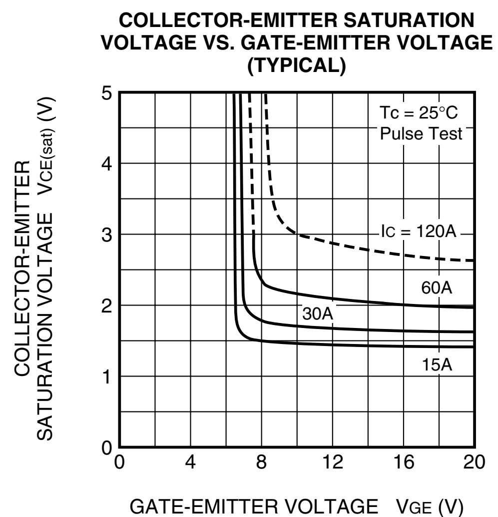
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{CES}	Collector-emitter leakage current	V_{CE} = 900V, V_{GE} = 0V	—	—	1.0	mA
I_{GES}	Gate-emitter leakage current	V_{GE} = ±20V, V_{CE} = 0V	—	—	0.5	µA
$V_{GE(th)}$	Gate-emitter threshold voltage	V_{CE} = 10V, I_C = 6mA	2.0	4.0	6.0	V
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C = 60A, V_{GE} = 15V	—	2.1	2.7	V
C_{ies}	Input capacitance	V_{CE} = 25V, V_{GE} = 0V, f = 1MHz	—	4400	—	pF
C_{oes}	Output capacitance		—	115	—	pF
C_{res}	Reverse transfer capacitance		—	75	—	pF
$t_{d(on)}$	Turn-on delay time	V_{CC} = 300V, I_C = 60A, V_{GE} = 15V, R_G = 10Ω	—	0.05	—	µs
t_r	Turn-on rise time		—	0.1	—	µs
$t_{d(off)}$	Turn-off delay time		—	0.2	—	µs
t_f	Turn-off fall time		—	0.3	—	µs
Etail	Tail loss	I_{CP} = 60A, T_j = 125°C, dv/dt = 200V/µs		0.6	1.0	mJ/pls
Itail	Tail current			6.0	12	A
V_{EC}	Emitter-collector voltage	I_E = 60A, V_{GE} = 0V	—	2.2	3.0	V
t_{rr}	Diode reverse recovery time	I_E = 60A, dis/dt = –20A/µs	—	0.5	2.0	µs
$R_{th(j-c)}$	Thermal resistance (IGBT)	Junction to case	—	—	0.69	°C/W
$R_{th(j-c)}$	Thermal resistance (Diode)	Junction to case	—	—	4.0	°C/W

PERFORMANCE CURVES

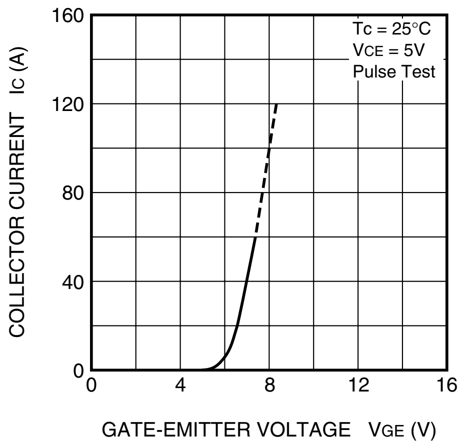
COLLECTOR CURRENT VS. COLLECTOR-EMITTER VOLTAGE (TYPICAL)



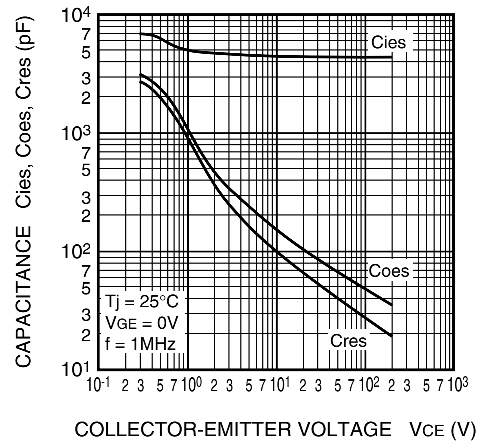
COLLECTOR-EMITTER SATURATION VOLTAGE VS. GATE-EMITTER VOLTAGE (TYPICAL)



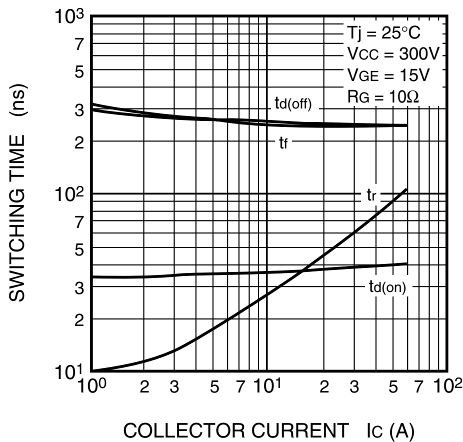
COLLECTOR CURRENT VS. GATE-EMITTER VOLTAGE (TYPICAL)



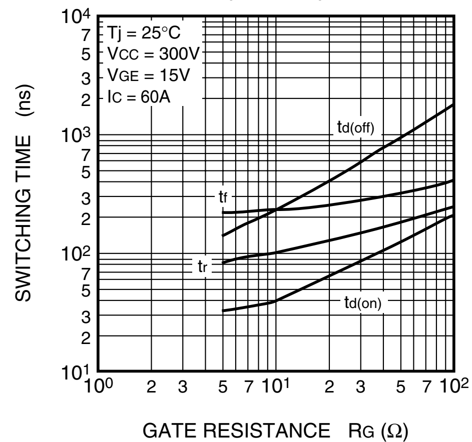
CAPACITANCE VS. COLLECTOR-EMITTER VOLTAGE (TYPICAL)



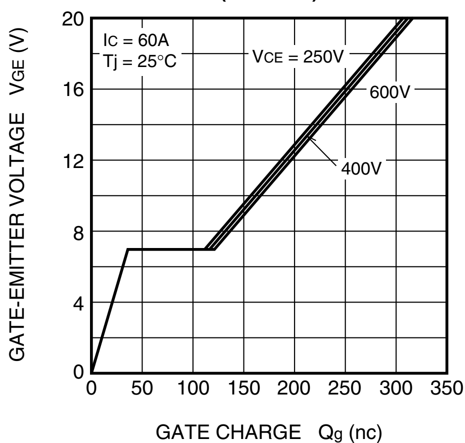
SWITCHING CHARACTERISTICS (TYPICAL)



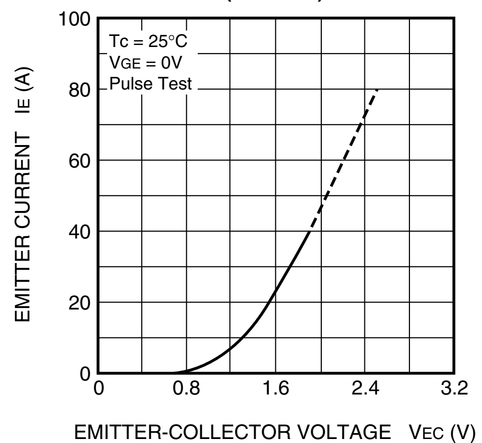
SWITCHING TIME VS. GATE RESISTANCE (TYPICAL)

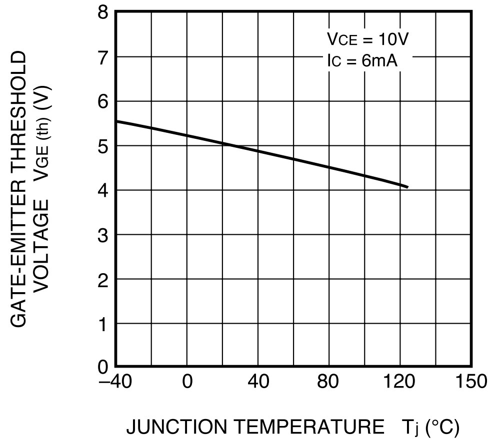


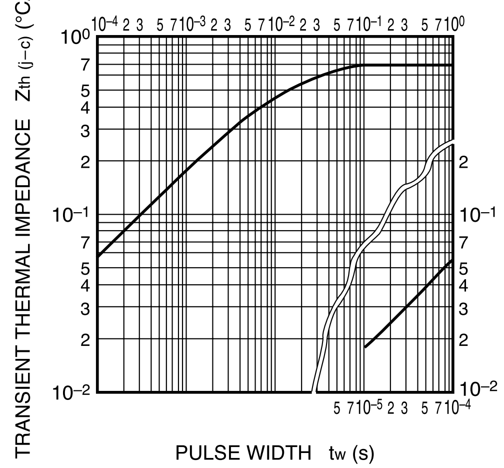
GATE-EMITTER VOLTAGE VS. GATE CHARGE CHARACTERISTIC (TYPICAL)

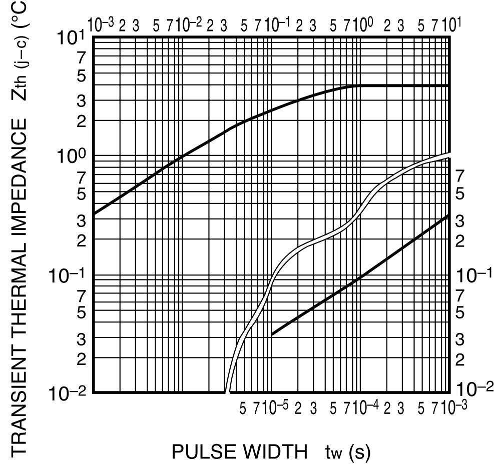


EMITTER CURRENT VS. EMITTER-COLLECTOR VOLTAGE (TYPICAL)









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