

MITSUBISHI Nch IGBT  
**CT90AM-18**

INSULATED GATE BIPOLAR TRANSISTOR

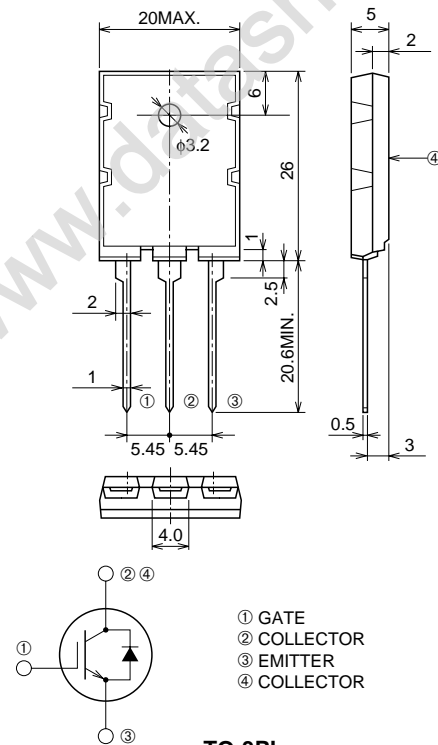
**CT90AM-18**



- VCES ..... 900V
- IC ..... 60A
- Simple drive
- Integrated Fast-recovery diode
- Small tail loss
- Low VCE Saturation Voltage

**OUTLINE DRAWING**

Dimensions in mm



**APPLICATION**

Microwave oven, Electromagnetic cooking devices, Rice-cookers

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**MAXIMUM RATINGS** (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V <sub>CE</sub>	Collector-emitter voltage	V <sub>GE</sub> = 0V	900	V
V <sub>GES</sub>	Gate-emitter voltage		±25	V
V <sub>GEM</sub>	Peak gate-emitter voltage		±30	V
I <sub>C</sub>	Collector current		60	A
I <sub>CM</sub>	Collector current (Pulsed)		120	A
I <sub>E</sub>	Emitter current		40	A
P <sub>C</sub>	Maximum power dissipation		250	W
T <sub>j</sub>	Junction temperature		-40 ~ +150	°C
T <sub>stg</sub>	Storage temperature		-40 ~ +150	°C

Sep. 2000

## INSULATED GATE BIPOLAR TRANSISTOR

ELECTRICAL CHARACTERISTICS ( $T_j = 25^\circ\text{C}$ )

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
ICES	Collector-emitter leakage current	$V_{CE} = 900\text{V}, V_{GE} = 0\text{V}$	—	—	1.0	mA
IGES	Gate-emitter leakage current	$V_{GE} = \pm 20\text{V}, V_{CE} = 0\text{V}$	—	—	$\pm 0.5$	$\mu\text{A}$
$V_{GE(th)}$	Gate-emitter threshold voltage	$V_{CE} = 10\text{V}, I_C = 6\text{mA}$	2.0	4.0	6.0	V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C = 60\text{A}, V_{GE} = 15\text{V}$	—	1.55	1.95	V
$C_{ies}$	Input capacitance	$V_{CE} = 25\text{V}, V_{GE} = 0\text{V}, f = 1\text{MHz}$	—	11000	—	pF
$C_{oes}$	Output capacitance		—	180	—	pF
$C_{res}$	Reverse transfer capacitance		—	125	—	pF
$t_d(on)$	Turn-on delay time		—	0.05	—	$\mu\text{s}$
$t_r$	Turn-on rise time	$V_{CC} = 300\text{V}, I_C = 60\text{A}, V_{GE} = 15\text{V}, R_G = 0\Omega$	—	0.10	—	$\mu\text{s}$
$t_d(off)$	Turn-off delay time		—	0.20	—	$\mu\text{s}$
$t_f$	Turn-off fall time		—	0.30	—	$\mu\text{s}$
$E_{tail}$	Tail loss	$I_{CP} = 60\text{A}, T_j = 125^\circ\text{C}, dv/dt = 200\text{V}/\mu\text{s}$	—	0.6	1.0	mJ/pls
$I_{tail}$	Tail current		—	6	12	A
$V_{EC}$	Emitter-collector voltage	$I_E = 60\text{A}, V_{GE} = 0\text{V}$	—	—	3.0	V
$t_{rr}$	Diode reverse recovery time	$I_E = 60\text{A}, di/dt = -20\text{A}/\mu\text{s}$	—	0.5	2.0	$\mu\text{s}$
$R_{th(ch-c)}$	Thermal resistance	Junction to case	—	—	0.5	$^\circ\text{C}/\text{W}$
$R_{th(ch-c)}$	Thermal resistance	Junction to case	—	—	4.0	$^\circ\text{C}/\text{W}$

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