**TOSHIBA** 2SC4209

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

## 2 S C 4 2 0 9

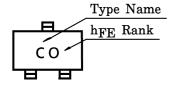
DRIVER STAGE AMPLIFIER APPLICATIONS **VOLTAGE AMPLIFIER APPLICATIONS** 

Complementary to 2SA1620

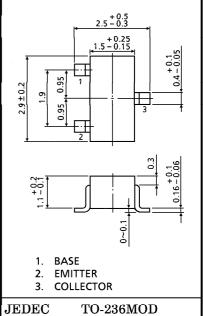
## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	80	V
Collector-Emitter Voltage	VCEO	80	V
Emitter-Base Voltage	$V_{ m EBO}$	5	V
Collector Current	$I_{\mathbf{C}}$	300	mA
Base Current	IB	60	mA
Collector Power Dissipation	PC	200	mW
Junction Temperature	$T_{j}$	150	°C
Storage Temperature Range	$\mathrm{T_{stg}}$	-55~150	$^{\circ}\mathrm{C}$

## **MARKING**



Unit in mm



JEDEC	TO-236MOD	
EIAJ	SC-59	
TOSHIBA	2-3F1A	

Weight: 0.012g

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## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	ICBO	$V_{CB} = 50V, I_{E} = 0$	_	_	0.1	$\mu$ <b>A</b>
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=5V, I_{C}=0$	_	_	0.1	$\mu$ A
Collector-Emitter Breakdown Voltage	V <sub>(BR)</sub> CEO	$I_{\rm C}$ =5mA, $I_{\rm B}$ =0	80	_	_	V
DC Current Gain	hFE (1) (Note)	$V_{ m CE}$ =2V, I <sub>C</sub> =50mA	70	_	240	
	hFE (2)	$V_{CE}=2V$ , $I_{C}=200mA$	40	_	_	
Collector-Emitter Saturation Voltage	V <sub>CE</sub> (sat)	$I_{\rm C} = 200  {\rm mA}, \ I_{\rm B} = 10  {\rm mA}$	_	_	0.5	V
Base-Emitter VOltage	$ m V_{BE}$	$V_{CE}=2V, I_{C}=5mA$	0.55	_	0.8	V
Transition Frequency	$ m f_{T}$	$V_{CE} = 10V, I_C = 10mA$	_	100		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_{E} = 0, f = 1MHz$	_	10	_	pF

(Note) :  $h_{FE(1)}$  Classification  $O:70\sim140, Y:120\sim240$ 

