

## isc General Purpose NPN Small Signal Transistor

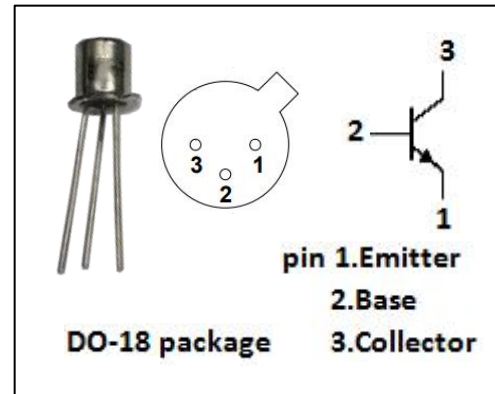
BC109

## DESCRIPTION

- With TO-18 package.
- High DC Current Gain-  
:  $h_{FE}: 200-800@ (V_{CE}= 5V, I_C= 2mA)$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- Designed For Low Noise General Purpose Amplifiers, Driver Stages and Signal Processing Applications

ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	30	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter-Base Voltage	5.0	V
$I_C$	Collector Current-Continuous	100mA	A
$P_T$	Total Power Dissipation @ $T_A=25^\circ\text{C}$	300	mW
$T_J$	Junction Temperature	-55~175	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~175	$^\circ\text{C}$

## • THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	500	$^\circ\text{C}/\text{W}$

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## ELECTRICAL CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> =2mA, I <sub>B</sub> =0	25		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10mA; I <sub>B</sub> = 0.5mA		0.25	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 100mA; I <sub>B</sub> = 5mA		0.60	V
V <sub>BE(sat)-1</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 10mA; I <sub>B</sub> = 0.5mA		0.83	V
V <sub>BE(sat)-2</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 100mA; I <sub>B</sub> = 5mA		1.05	V
V <sub>BE(on)-1</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 2mA ; V <sub>CE</sub> = 5V	0.55	0.70	V
V <sub>BE(on)-2</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 10mA ; V <sub>CE</sub> = 5V		0.77	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 45V; I <sub>E</sub> = 0		15	nA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 2mA; V <sub>CE</sub> = 5V	200	800	

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