

isc Silicon NPN Power Transistor

2SC5101

DESCRIPTION

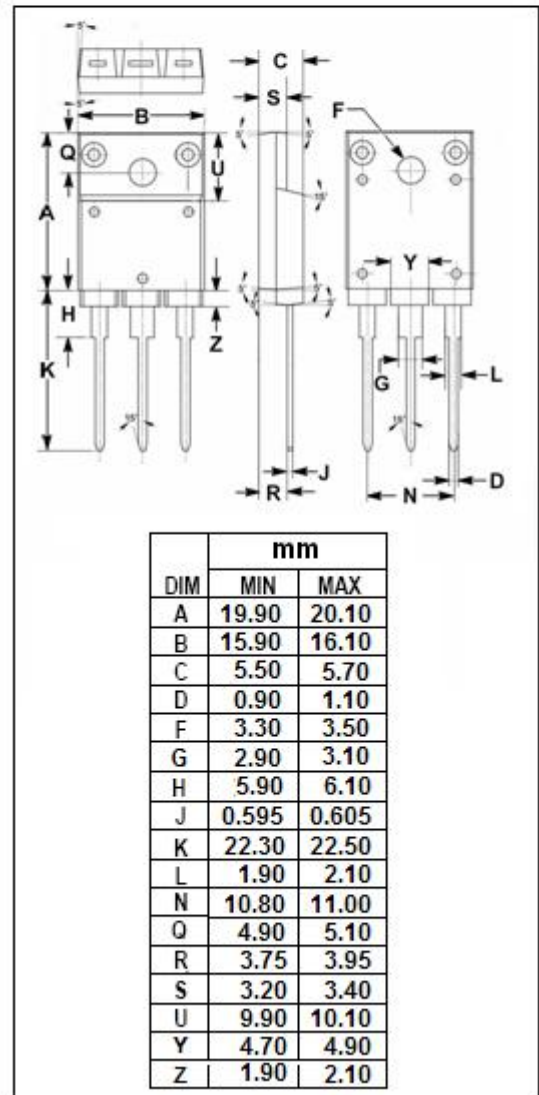
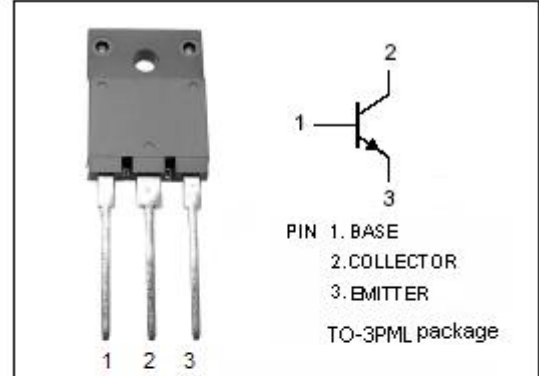
- Collector-Emitter Breakdown Voltage-
 $V_{(BR)CEO} = 140V(\text{Min})$
- Good Linearity of h_{FE}
- Complement to Type 2SA1909
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for audio and general purpose applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	200	V
V_{CEO}	Collector-Emitter Voltage	140	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	10	A
I_B	Base Current-Continuous	4	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 $T_c=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 50\text{mA}; I_B = 0$	140			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}; I_B = 0.5\text{A}$			0.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 200\text{V}; I_E = 0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 6\text{V}; I_C = 0$			10	μA
h_{FE}	DC Current Gain	$I_C = 3\text{A}; V_{CE} = 4\text{V}$	50			
C_{OB}	Collector Output Capacitance	$I_E = 0; V_{CB} = 10\text{V}; f = 1\text{MHz}$		250		pF
f_T	Current-Gain—Bandwidth Product	$I_E = -0.5\text{A}; V_{CE} = 12\text{V}$		20		MHz

Switching times

t_{on}	Turn-on Time	$I_C = 5\text{A}, R_L = 12\Omega, I_{B1} = -I_{B2} = 0.5\text{A}, V_{CC} = 60\text{V}$		0.24		μs
t_{stg}	Storage Time			4.32		μs
t_f	Fall Time			0.40		μs

◆ h_{FE} classifications

O	P	Y
50-100	70-140	90-180

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