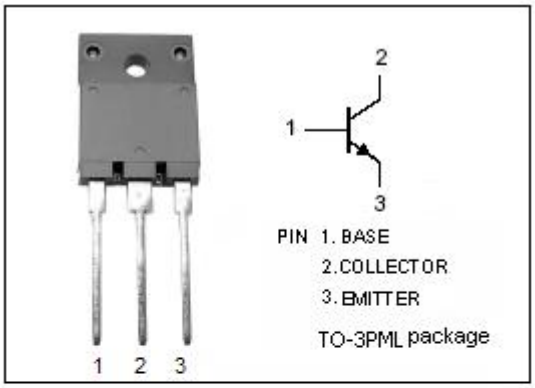
isc Silicon NPN Power Transistor — 2SC5101



DESCRIPTION

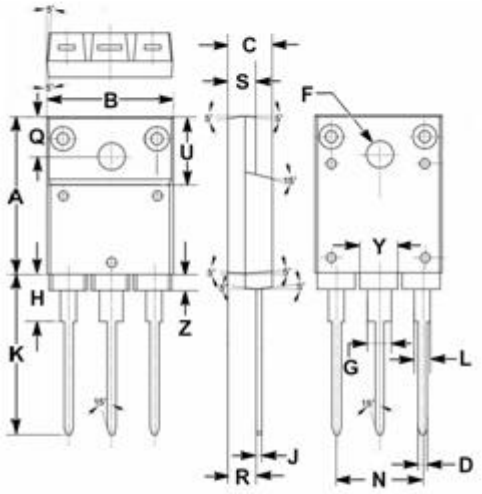
- Collector-Emitter Breakdown Voltage-
  $V_{(BR)CEO}$= 140V(Min)
- Good Linearity of h_{FE}
- Complement to Type 2SA1909
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for audio and general purpose applications

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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℃	80	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃



DIM	mm MIN	mm MAX
A	19.90	20.10
B	15.90	16.10
C	5.50	5.70
D	0.90	1.10
F	3.30	3.50
G	2.90	3.10
H	5.90	6.10
J	0.595	0.605
K	22.30	22.50
L	1.90	2.10
N	10.80	11.00
Q	4.90	5.10
R	3.75	3.95
S	3.20	3.40
U	9.90	10.10
Y	4.70	4.90
Z	1.90	2.10

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

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

Switching times

t_{on}	Turn-on Time	I_C= 5A, R_L= 12Ω, I_{B1}= -I_{B2}= 0.5A, V_{CC}≈ 60V		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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