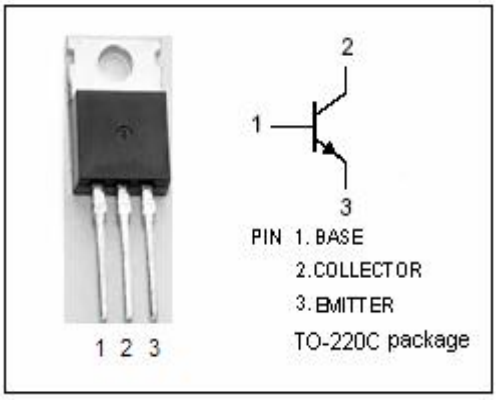
isc Silicon NPN Power Transistor — BD709

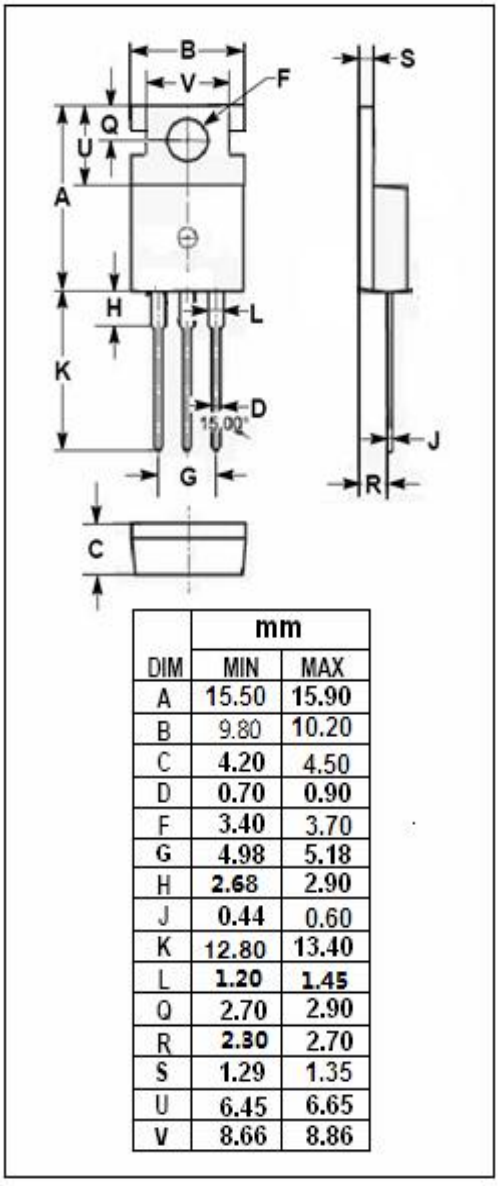
DESCRIPTION

- DC Current Gain -
  : h_{FE} = 40(Min.)@ I_C= 0.5A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$= 80V(Min.)
- Complement to Type BD710
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

- Designed for use in power linear and switching applications.



DIM	mm MIN	mm MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CES}	Collector-Emitter Voltage V_{BE}= 0	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	12	A
I_B	Base Current-Continuous	5	A
P_C	Collector Power Dissipation @ T_C=25℃	75	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.67	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance, Junction to Ambient	70	℃/W

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 30mA; I_B= 0	80		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 4A; I_B= 0.4A		1.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C= 4A; V_{CE}= 4V		1.5	V
I_{CEO}	Collector Cutoff Current	V_{CE}= 40V; I_B= 0		1.0	mA
I_{CBO}	Collector Cutoff Current	V_{CB}= 80V; I_E= 0 V_{CB}= 80V; I_E= 0; T_C= 150℃		0.1 1.0	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0		1.0	mA
h_{FE-1}	DC Current Gain	I_C= 0.5A; V_{CE}= 2V	40	400	
h_{FE-2}	DC Current Gain	I_C= 2A; V_{CE}= 2V	30		
h_{FE-3}	DC Current Gain	I_C= 4A; V_{CE}= 4V	15	150	
h_{FE-4}	DC Current Gain	I_C= 10A; V_{CE}= 4V	5		
f_T	Current-Gain—Bandwidth Product	I_C= 0.3A; V_{CE}= 3V	3		MHz