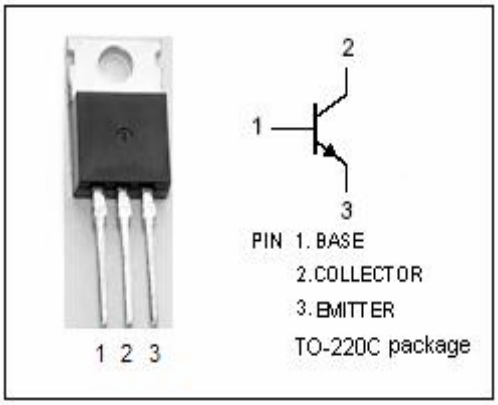
isc Silicon NPN Power Transistor — BDS12



DESCRIPTION

- High Voltage: V_{CEV}= 100V(Min)
- Low Saturation Voltage-
  : $V_{CE(sat)}$= 1.0V(Max)@ I_C= 5A
- High Reliablity
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

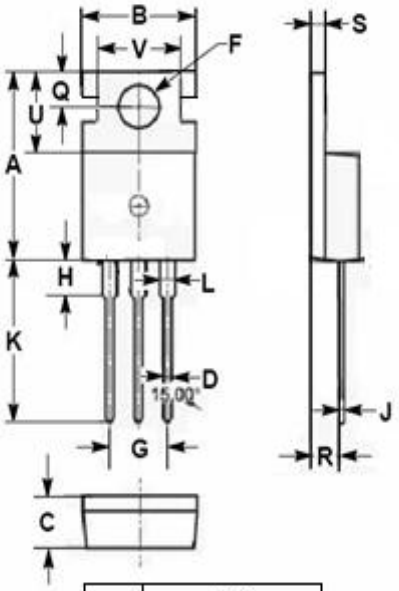
- Designed for power linear and switching application and General puepose power.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEV}	Collector-Emitter Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	15	A
I_B	Base Current	5	A
P_C	Collector Power Dissipation @ T_C=25℃	90	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	1.4	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance, Junction to Ambient	80	℃/W



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

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 50mA ;I_B= 0	100			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 0.5A			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 10A; I_B= 2.5A			3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 10A; I_B= 2.5A			2.5	V
I_{CBO}	Collector Cutoff Current	V_{CE}= 100V; V_{BE}= 0			0.5	mA
I_{CEO}	Collector Cutoff Current	V_{CE}= 50V; V_{BE}= 0			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}= 4V	40		250	
h_{FE-2}	DC Current Gain	I_C= 5A; V_{CE}= 4V	15		150	
h_{FE-3}	DC Current Gain	I_C= 10A; V_{CE}= 4V	5			
f_T	Current-Gain—Bandwidth Product	I_C= 0.5A ; V_{CE}= 4V	3			MHz

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