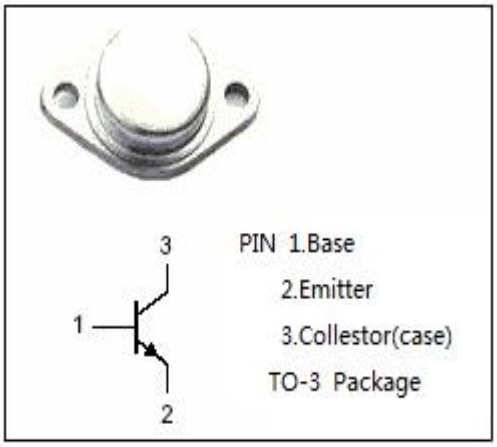
isc Silicon NPN Power Transistor — BDW51/A/B/C

DESCRIPTION

- Collector Current -I_C= 15A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 45V(Min)- BDW51; 60V(Min)- BDW51A
  80V(Min)- BDW51B; 100V(Min)- BDW51C
- Complement to Type BDW52/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

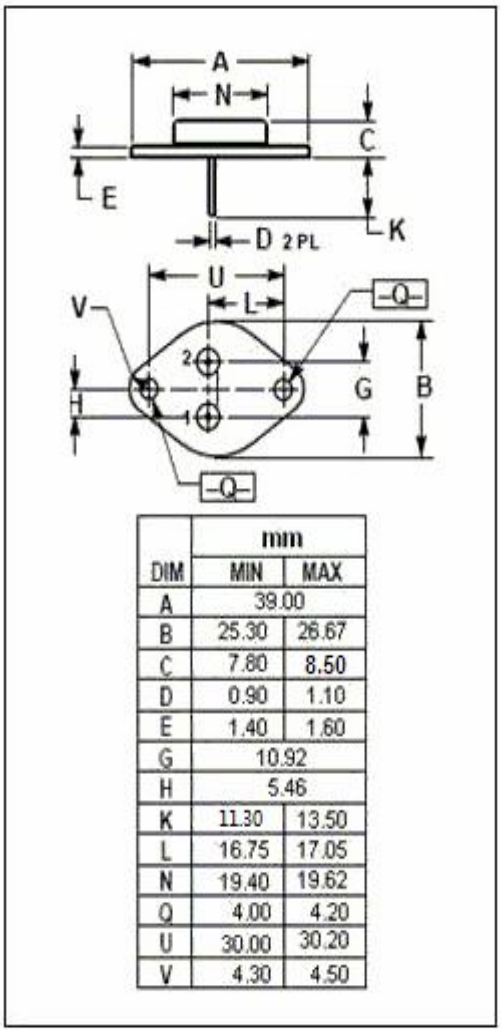


APPLICATIONS

- Designed for use in power linear and switching applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDW51	45	V
		BDW51A	60	
		BDW51B	80	
		BDW51C	100	
V_{CEO}	Collector-Emitter Voltage	BDW51	45	V
		BDW51A	60	
		BDW51B	80	
		BDW51C	100	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		15	A
I_{CM}	Collector Current-Peak		20	A
I_B	Base Current		7	A
P_C	Collector Power Dissipation @ T_C=25℃		125	W
T_J	Junction Temperature		200	℃
T_{stg}	Storage Temperature Range		-65~200	℃



DIM	mm MIN	MAX
A	39.00	
B	25.30	26.67
C	7.80	8.50
D	0.90	1.10
E	1.40	1.60
G	10.92	
H	5.46	
K	11.30	13.50
L	16.75	17.05
N	19.40	19.62
Q	4.00	4.20
U	30.00	30.20
V	4.30	4.50

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.4	℃/W

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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	BDW51	I_C= 30mA; I_B= 0	45			V
		BDW51A		60			
		BDW51B		80			
		BDW51C		100			
$V_{CE(sat)-1}$	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
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 5A; V_{CE}= 4V			1.5	V
I_{CBO}	Collector Cutoff Current	BDW51	V_{CB}= 45V; I_E= 0 V_{CB}= 45V; I_E= 0; T_C= 150℃			0.5 5.0	mA
		BDW51A	V_{CB}= 60V; I_E= 0 V_{CB}= 60V; I_E= 0; T_C= 150℃			0.5 5.0	
		BDW51B	V_{CB}= 80V; I_E= 0 V_{CB}= 80V; I_E= 0; T_C= 150℃			0.5 5.0	
		BDW51C	V_{CB}= 100V; I_E= 0 V_{CB}= 100V; I_E= 0; T_C= 150℃			0.5 5.0	
I_{CEO}	Collector Cutoff Current	BDW51	V_{CE}= 22V; I_B= 0			1.0	mA
		BDW51A	V_{CE}= 30V; I_B= 0				
		BDW51B	V_{CE}= 40V; I_B= 0				
		BDW51C	V_{CE}= 50V; I_B= 0				
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C=0			2.0	mA
h_{FE-1}	DC Current Gain		I_C= 5A; V_{CE}= 4V	20		150	
h_{FE-2}	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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