New Jersey Semi-Conductor Products, Inc.

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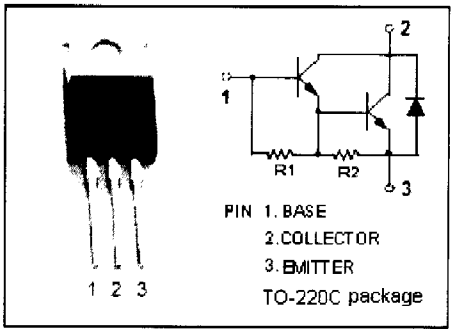
Silicon NPN Power Transistor — BDW93/A/B/C

DESCRIPTION

- Collector Current $-I_C$= 12A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 45V(Min)- BDW93; 60V(Min)- BDW93A
  80V(Min)- BDW93B; 100V(Min)- BDW93C
- Complement to Type BDW94/A/B/C

APPLICATIONS

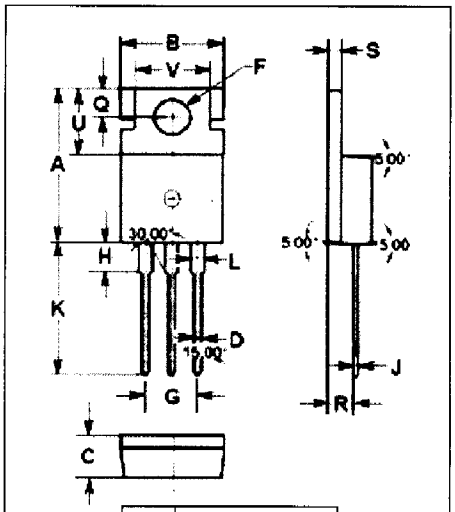
- Designed for hammer drivers, audio amplifier applications.



PIN 1. BASE
2.COLLECTOR
3.EMITTER
TO-220C package

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDW93	45	V
		BDW93A	60	
		BDW93B	80	
		BDW93C	100	
V_{CEO}	Collector-Emitter Voltage	BDW93	45	V
		BDW93A	60	
		BDW93B	80	
		BDW93C	100	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		12	A
I_{CM}	Collector Current-Peak		15	A
I_B	Base Current		0.2	A
P_C	Collector Power Dissipation @ T_C=25℃		80	W
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃



DIM	mm MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.5	℃/W

Quality Semi-Conductors

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BDW93	I_C= 100mA; I_B= 0	45			V
		BDW93A		60			
		BDW93B		80			
		BDW93C		100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		I_C= 5A; I_B= 20mA			2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		I_C= 10A; I_B= 0.1A			3.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage		I_C= 5A; I_B= 20mA			2.5	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage		I_C= 10A; I_B= 0.1A			4.0	V
I_{CBO}	Collector Cutoff Current	BDW93	V_{CB}= 45V; I_E= 0			0.1	mA
		BDW93A	V_{CB}= 60V; I_E= 0				
		BDW93B	V_{CB}= 80V; I_E= 0				
		BDW93C	V_{CB}= 100V; I_E= 0				
I_{CEO}	Collector Cutoff Current	BDW93	V_{CE}= 45V; I_B= 0			1.0	mA
		BDW93A	V_{CE}= 60V; I_B= 0				
		BDW93B	V_{CE}= 80V; I_B= 0				
		BDW93C	V_{CE}= 100V; 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= 3A; V_{CE}= 3V	1000			
h_{FE-2}	DC Current Gain		I_C= 5A; V_{CE}= 3V	750		20000	
h_{FE-3}	DC Current Gain		I_C= 10A; V_{CE}= 3V	100			
V_{ECF-1}	C-E Diode Forward Voltage		I_F= 5A			2.0	V
V_{ECF-2}	C-E Diode Forward Voltage		I_F= 10A			4.0	V