

**isc Silicon NPN Power Transistor**

**BDW51/A/B/C**

**DESCRIPTION**

- Collector Current  $-I_C = 15A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 45V(\text{Min})$ - BDW51;  $60V(\text{Min})$ - BDW51A  
80V(Min)- BDW51B;  $100V(\text{Min})$ - BDW51C
- Complement to Type BDW52/A/B/C

**APPLICATIONS**

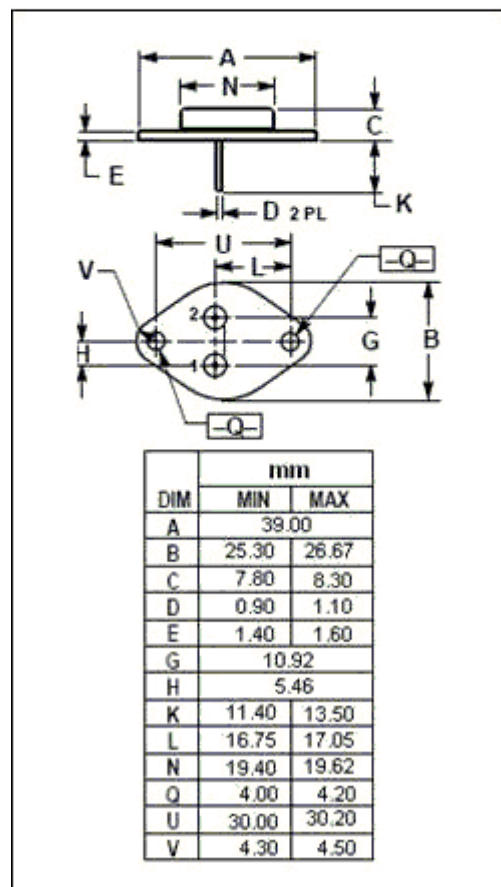
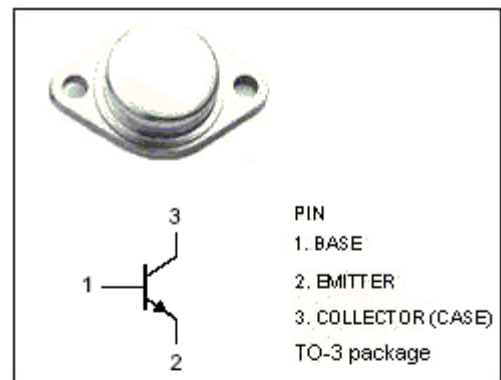
- Designed for use in power linear and switching applications.

**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

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 @ $T_C=25^\circ\text{C}$	125	W	
$T_J$	Junction Temperature	200	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range	-65~200	$^\circ\text{C}$	

**THERMAL CHARACTERISTICS**

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



## isc Silicon NPN Power Transistor

## BDW51/A/B/C

## ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	BDW51	$I_C=100\text{mA}; I_B=0$			V
		BDW51A				
		BDW51B				
		BDW51C				
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2.5\text{A}$			3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2.5\text{A}$			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=5\text{A}; V_{CE}=4\text{V}$			1.5	V
$I_{CBO}$	Collector Cutoff Current	BDW51				mA
		BDW51A				
		BDW51B				
		BDW51C				
$I_{CEO}$	Collector Cutoff Current	BDW51			1.0	mA
		BDW51A				
		BDW51B				
		BDW51C				
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			2.0	mA
$h_{FE-1}$	DC Current Gain	$I_C=5\text{A}; V_{CE}=4\text{V}$	20		150	
$h_{FE-2}$	DC Current Gain	$I_C=10\text{A}; V_{CE}=4\text{V}$	5			
$f_T$	Current Gain-Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=4\text{V}$	3			MHz