

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

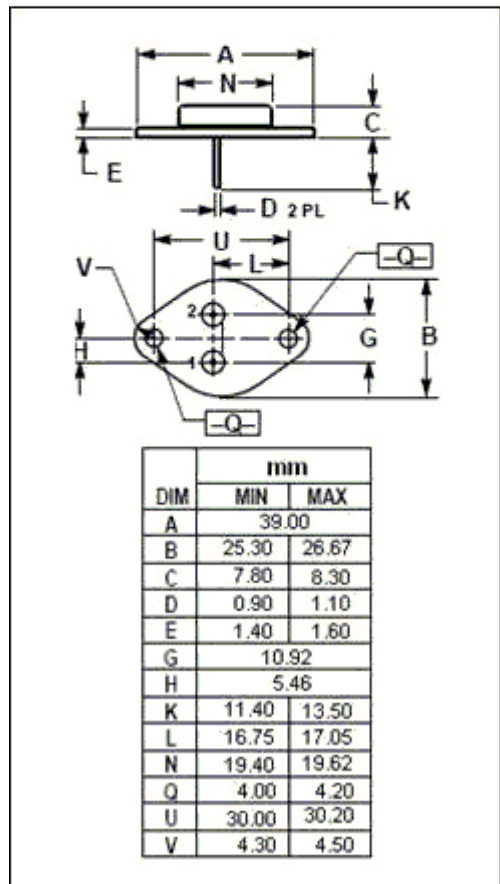
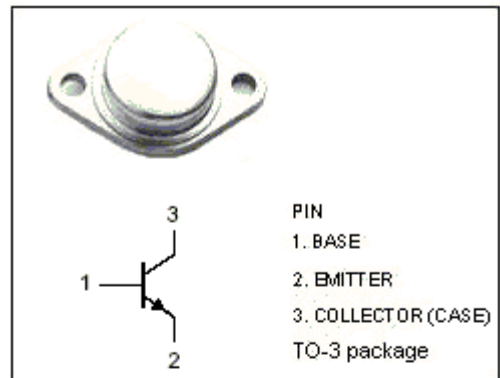
- Designed for use in power linear and switching applications.

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	$^\circ\text{C/W}$



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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