

**isc Silicon NPN Darlington Power Transistor**

**BDW73/A/B/C/D**

**DESCRIPTION**

- Collector Current - $I_C= 8A$
- High DC Current Gain- $h_{FE}= 750(\text{Min.})@ I_C= 3A$
- Complement to Type BDW74/A/B/C/D

**APPLICATIONS**

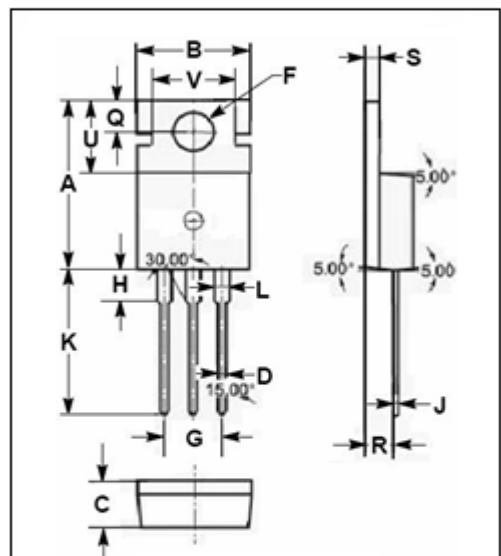
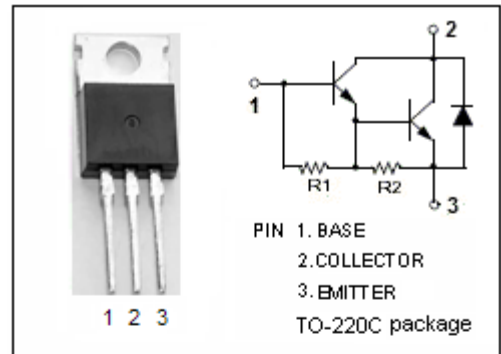
- Designed for audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
$V_{CBO}$	Collector-Base Voltage	BDW73	45	V
		BDW73A	60	
		BDW73B	80	
		BDW73C	100	
		BDW73D	120	
$V_{CEO}$	Collector-Emitter Voltage	BDW73	45	V
		BDW73A	60	
		BDW73B	80	
		BDW73C	100	
		BDW73D	120	
$V_{EBO}$	Emitter-Base Voltage	5	V	
$I_C$	Collector Current-Continuous	8	A	
$I_B$	Base Current-Continuous	0.3	A	
$P_C$	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	W	
	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	80		
$T_J$	Junction Temperature	150	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$	

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.56	$^\circ\text{C/W}$
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	62.5	$^\circ\text{C/W}$



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

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## BDW73/A/B/C/D

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BDW73	$I_C=30\text{mA}; I_B=0$			V
		BDW73A				
		BDW73B				
		BDW73C				
		BDW73D				
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=12\text{mA}$			2.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=8\text{A}; I_B=80\text{mA}$			4.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=3\text{A}; V_{CE}=3\text{V}$			2.5	V
$V_{ECF}$	C-E Diode Forward Voltage	$I_F=8\text{A}$			3.5	V
$I_{CEO}$	Collector Cutoff Current	BDW73	$V_{CE}=30\text{V}; I_B=0$		0.5	mA
		BDW73A				
		BDW73B				
		BDW73C				
		BDW73D				
$I_{CBO}$	Collector Cutoff Current	BDW73	$V_{CB}=45\text{V}; I_E=0$ $V_{CB}=45\text{V}; I_E=0; T_J=150^\circ\text{C}$		0.2 5.0	mA
		BDW73A				
		BDW73B				
		BDW73C				
		BDW73D				
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			2.0	mA
$h_{FE-1}$	DC Current Gain	$I_C=3\text{A}; V_{CE}=3\text{V}$	750		20000	
$h_{FE-2}$	DC Current Gain	$I_C=8\text{A}; V_{CE}=3\text{V}$	100			
Switching times						
$t_{on}$	Turn-on Time	$I_C=3\text{A}; I_{B1}=-I_{B2}=12\text{mA};$ $V_{BE(off)}=-3.5\text{V}, R_L=10\Omega$		1.0		$\mu\text{s}$
$t_{off}$	Turn-off Time			5.0		$\mu\text{s}$