

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

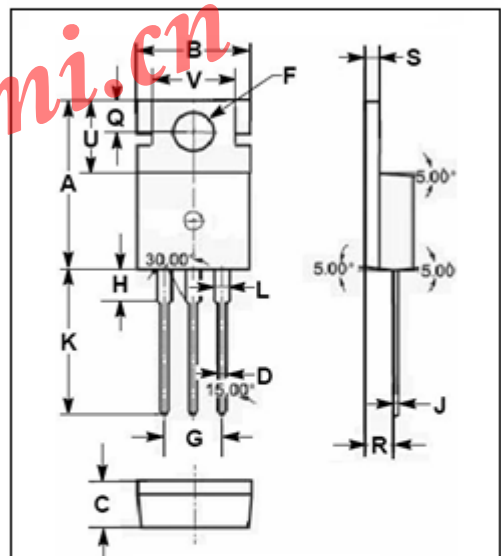
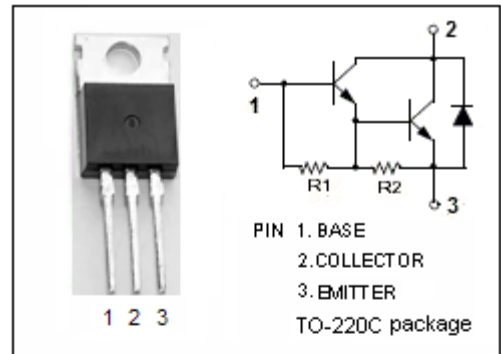
- Designed for audio output stages and general amplifier and switching applications

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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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	$I_C=30\text{mA}; I_B=0$	45			V
		BDW73A		60			
		BDW73B		80			
		BDW73C		100			
		BDW73D		120			
$V_{CE(sat)-1}$	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	$V_{CE}=30\text{V}; I_B=0$				
		BDW73B	$V_{CE}=40\text{V}; I_B=0$				
		BDW73C	$V_{CE}=50\text{V}; I_B=0$				
		BDW73D	$V_{CE}=60\text{V}; I_B=0$				
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	mA
		BDW73A	$V_{CB}=60\text{V}; I_E=0$ $V_{CB}=60\text{V}; I_E=0; T_J=150^\circ\text{C}$			5.0	
		BDW73B	$V_{CB}=80\text{V}; I_E=0$ $V_{CB}=80\text{V}; I_E=0; T_J=150^\circ\text{C}$			0.2	
		BDW73C	$V_{CB}=100\text{V}; I_E=0$ $V_{CB}=100\text{V}; I_E=0; T_J=150^\circ\text{C}$			5.0	
		BDW73D	$V_{CB}=120\text{V}; I_E=0$ $V_{CB}=120\text{V}; I_E=0; T_J=150^\circ\text{C}$			0.2	
						5.0	
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		μs
t_{off}	Turn-off Time				5.0		μs