

Silicon PNP Darlington Power Transistor

BDW74/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 BDW73/A/B/C/D

APPLICATIONS

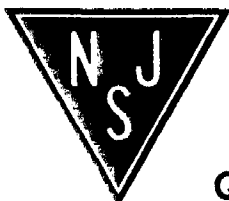
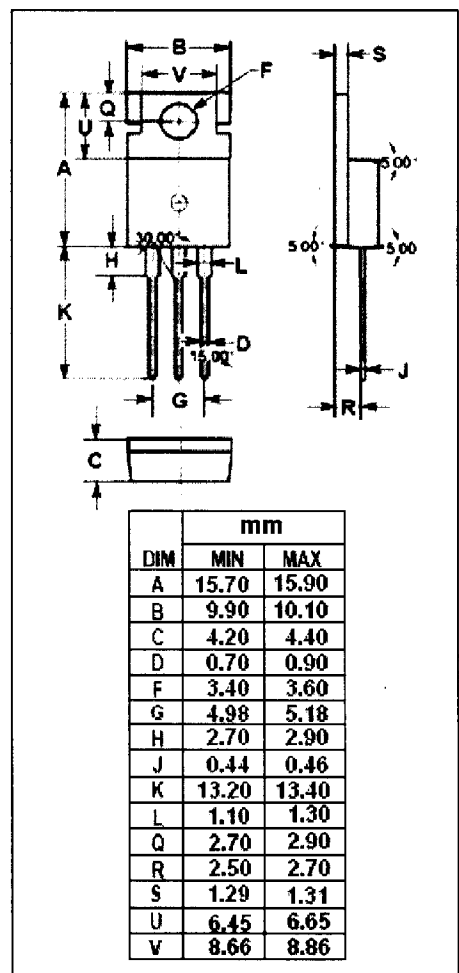
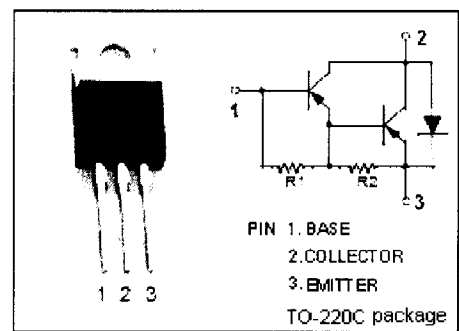
- Designed for audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BDW74	-45	V
		BDW74A	-60	
		BDW74B	-80	
		BDW74C	-100	
		BDW74D	-120	
V_{CEO}	Collector-Emitter Voltage	BDW74	-45	V
		BDW74A	-60	
		BDW74B	-80	
		BDW74C	-100	
		BDW74D	-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	$^\circ\text{C/W}$



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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	BDW74	$I_C = -30\text{mA}; I_B = 0$	-45			V	
		BDW74A		-60				
		BDW74B		-80				
		BDW74C		-100				
		BDW74D		-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	BDW74	$V_{CE} = -30\text{V}; I_B = 0$			-0.5	mA	
		BDW74A		$V_{CE} = -30\text{V}; I_B = 0$				
		BDW74B		$V_{CE} = -40\text{V}; I_B = 0$				
		BDW74C		$V_{CE} = -50\text{V}; I_B = 0$				
		BDW74D		$V_{CE} = -60\text{V}; I_B = 0$				
I_{CBO}	Collector Cutoff Current	BDW74	$V_{CB} = -45\text{V}; I_E = 0$ $V_{CB} = -45\text{V}; I_E = 0; T_J = 150^\circ\text{C}$			-0.2	mA	
		BDW74A		$V_{CB} = -60\text{V}; I_E = 0$ $V_{CB} = -60\text{V}; I_E = 0; T_J = 150^\circ\text{C}$				-0.2
		BDW74B		$V_{CB} = -80\text{V}; I_E = 0$ $V_{CB} = -80\text{V}; I_E = 0; T_J = 150^\circ\text{C}$				-0.2
		BDW74C		$V_{CB} = -100\text{V}; I_E = 0$ $V_{CB} = -100\text{V}; I_E = 0; T_J = 150^\circ\text{C}$				-0.2
		BDW74D		$V_{CB} = -120\text{V}; I_E = 0$ $V_{CB} = -120\text{V}; I_E = 0; T_J = 150^\circ\text{C}$				-0.2
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		