

isc Silicon PNP Darlington Power Transistor
BDW64/A/B/C/D
DESCRIPTION

- Collector Current $-I_C = -6A$
- High DC Current Gain $-h_{FE} = 750(\text{Min.}) @ I_C = -2A$
- Complement to Type BDW63/A/B/C/D
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

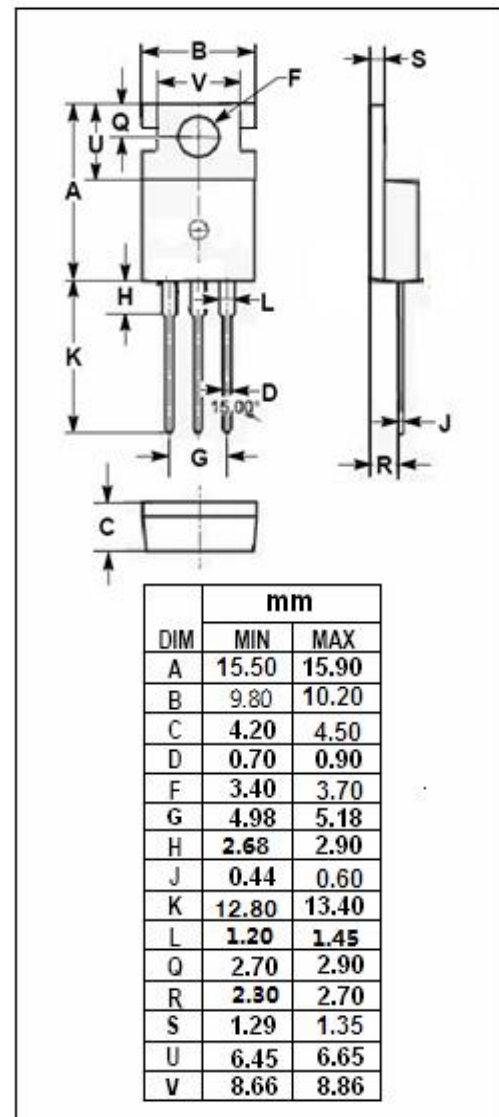
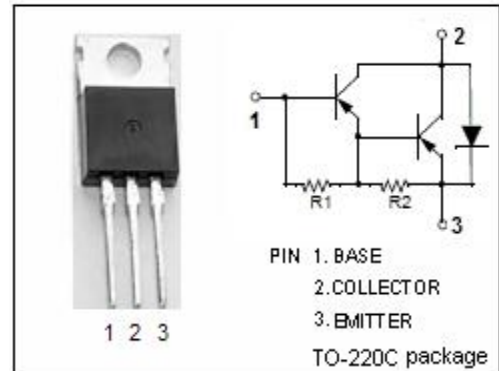
- Designed for audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BDW64	-45	V
		BDW64A	-60	
		BDW64B	-80	
		BDW64C	-100	
		BDW64D	-120	
V_{CEO}	Collector-Emitter Voltage	BDW64	-45	V
		BDW64A	-60	
		BDW64B	-80	
		BDW64C	-100	
		BDW64D	-120	
V_{EBO}	Emitter-Base Voltage	-5	V	
I_C	Collector Current-Continuous	-6	A	
I_B	Base Current-Continuous	-0.1	A	
P_C	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	W	
	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	60		
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	2.08	$^\circ\text{C/W}$
$R_{th\ j-c}$	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	BDW64	$I_C = -30\text{mA}; I_B = 0$			-45	
		BDW64A				-60	
		BDW64B				-80	
		BDW64C				-100	
		BDW64D				-120	
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = -2\text{A}; I_B = -12\text{mA}$			-2.5	V	
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = -6\text{A}; I_B = -60\text{mA}$			-4.0	V	
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -2\text{A}; V_{CE} = -3\text{V}$			-2.5	V	
V_{ECF}	C-E Diode Forward Voltage	$I_F = -6\text{A}$			-3.5	V	
I_{CEO}	Collector Cutoff Current	BDW64	$V_{CE} = -30\text{V}; I_B = 0$			-0.5	
		BDW64A					$V_{CE} = -30\text{V}; I_B = 0$
		BDW64B					$V_{CE} = -40\text{V}; I_B = 0$
		BDW64C					$V_{CE} = -50\text{V}; I_B = 0$
		BDW64D					$V_{CE} = -60\text{V}; I_B = 0$
I_{CBO}	Collector Cutoff Current	BDW64	$V_{CB} = -45\text{V}; I_E = 0$ $V_{CB} = -45\text{V}; I_E = 0; T_J = 150^\circ\text{C}$			-0.2	
		BDW64A				$V_{CB} = -60\text{V}; I_E = 0$ $V_{CB} = -60\text{V}; I_E = 0; T_J = 150^\circ\text{C}$	-0.2
		BDW64B				$V_{CB} = -80\text{V}; I_E = 0$ $V_{CB} = -80\text{V}; I_E = 0; T_J = 150^\circ\text{C}$	-0.2
		BDW64C				$V_{CB} = -100\text{V}; I_E = 0$ $V_{CB} = -100\text{V}; I_E = 0; T_J = 150^\circ\text{C}$	-0.2
		BDW64D				$V_{CB} = -120\text{V}; I_E = 0$ $V_{CB} = -120\text{V}; I_E = 0; T_J = 150^\circ\text{C}$	-0.2
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5\text{V}; I_C = 0$			-2.0	mA	
h_{FE-1}	DC Current Gain	$I_C = -2\text{A}; V_{CE} = -3\text{V}$	750		20000		
h_{FE-2}	DC Current Gain	$I_C = -6\text{A}; V_{CE} = -3\text{V}$	100				

Switching times

t_{on}	Turn-on Time	$I_C = -3\text{A}; I_{B1} = -I_{B2} = -12\text{mA};$ $V_{BE(off)} = -4.5\text{V}, R_L = 10\Omega$		1.0		μs
t_{off}	Turn-off Time			5.0		μs

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