

Silicon PNP Darlington Power Transistor

BDW84/A/B/C

DESCRIPTION

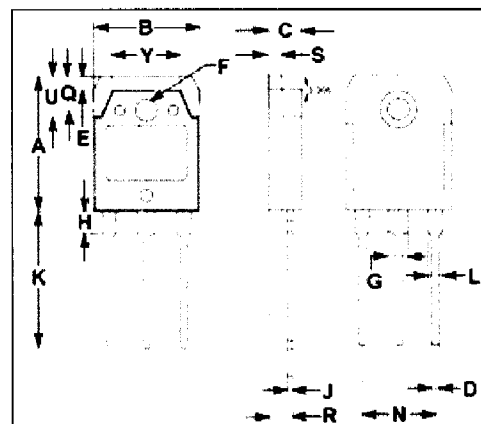
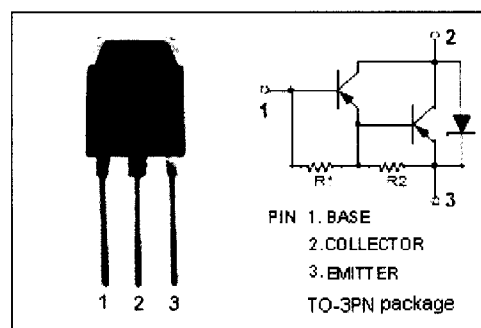
- Collector Current $-I_C = -15A$
- High DC Current Gain $-h_{FE} = 750(\text{Min}) @ I_C = -6A$
- Complement to Type BDW83/A/B/C

APPLICATIONS

- Designed for general purpose amplifier and low speed switching applications

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

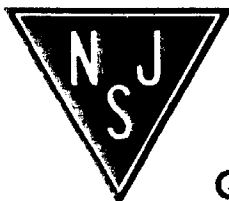
SYMBOL	PARAMETER	VALUE	UNIT	
V_{CER}	Collector-Emitter Voltage	BDW84	-45	V
		BDW84A	-60	
		BDW84B	-80	
		BDW84C	-100	
V_{CEO}	Collector-Emitter Voltage	BDW84	-45	V
		BDW84A	-60	
		BDW84B	-80	
		BDW84C	-100	
V_{EBO}	Emitter-Base Voltage	-5	V	
I_C	Collector Current-Continuous	-15	A	
I_B	Base Current-Continuous	-0.5	A	
P_C	Collector Power Dissipation @ $T_a = 25^\circ C$	3.5	W	
	Collector Power Dissipation @ $T_c = 25^\circ C$	150		
T_J	Junction Temperature	150	$^\circ C$	
T_{stg}	Storage Temperature Range	-65~150	$^\circ C$	



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	0.83	$^\circ C/W$



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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	BDW84	$I_C = -30\text{mA}; I_B = 0$	-45			V
		BDW84A		-60			
		BDW84B		-80			
		BDW84C		-100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C = -6\text{A}; I_B = -12\text{mA}$			-2.5	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C = -15\text{A}; I_B = -150\text{mA}$			-4.0	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C = -6\text{A}; V_{CE} = -3\text{V}$			-2.5	V
V_{ECF}	C-E Diode Forward Voltage		$I_F = -15\text{A}$			-3.5	V
I_{CEO}	Collector Cutoff Current	BDW84	$V_{CE} = -30\text{V}; I_B = 0$			-1.0	mA
		BDW84A	$V_{CE} = -30\text{V}; I_B = 0$				
		BDW84B	$V_{CE} = -40\text{V}; I_B = 0$				
		BDW84C	$V_{CE} = -50\text{V}; I_B = 0$				
I_{CBO}	Collector Cutoff Current	BDW84	$V_{CB} = -45\text{V}; I_E = 0$ $V_{CB} = -45\text{V}; I_E = 0; T_C = 150^\circ\text{C}$			-0.5 -5.0	mA
		BDW84A	$V_{CB} = -60\text{V}; I_E = 0$ $V_{CB} = -60\text{V}; I_E = 0; T_C = 150^\circ\text{C}$			-0.5 -5.0	
		BDW84B	$V_{CB} = -80\text{V}; I_E = 0$ $V_{CB} = -80\text{V}; I_E = 0; T_C = 150^\circ\text{C}$			-0.5 -5.0	
		BDW84C	$V_{CB} = -100\text{V}; I_E = 0$ $V_{CB} = -100\text{V}; I_E = 0; T_C = 150^\circ\text{C}$			-0.5 -5.0	
I_{EBO}	Emitter Cutoff Current		$V_{EB} = -5\text{V}; I_C = 0$			-2.0	mA
h_{FE-1}	DC Current Gain		$I_C = -6\text{A}; V_{CE} = -3\text{V}$	750		20000	
h_{FE-2}	DC Current Gain		$I_C = -15\text{A}; V_{CE} = -3\text{V}$	100			

Switching times

t_{on}	Turn-on Time	$I_C = -10\text{A}; I_{B1} = -I_{B2} = -40\text{mA};$ $R_L = 3\ \Omega; V_{BE(OFF)} = 4.2\text{V}$		0.9		μs
t_{off}	Turn-off Time			7.0		μs