

isc Silicon PNP Darlington Power Transistor

BDW54

DESCRIPTION

- High DC Current Gain
: $h_{FE} = 750(\text{Min.}) @ I_C = -1.5\text{A}, V_{CE} = -3\text{V}$
- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = -45\text{V}(\text{Min})$
- Low Collector Saturation Voltage
- Complement to Type BDW53
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

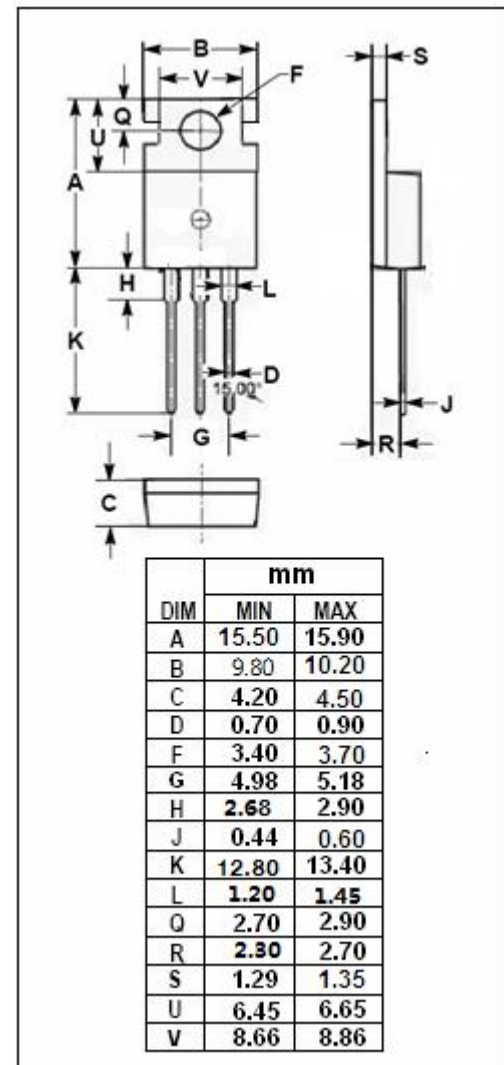
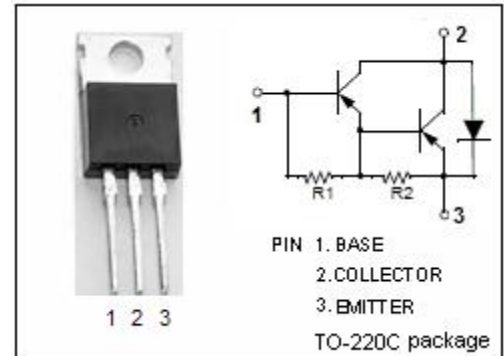
- Designed for general-purpose amplifier and low-speed switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	-45	V
V_{CEO}	Collector-Emitter Voltage	-45	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-4	A
I_B	Base Current-DC	-50	mA
P_C	Collector Power Dissipation $T_C = 25^\circ\text{C}$	40	W
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	3.125	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



isc Silicon PNP Darlington Power Transistor**BDW54****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = -30mA, I _B = 0	-45			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = -1.5A, I _B = -30mA			-2.5	V
V _{CE(sat)-2}	Collector-Emitter Saturation voltage	I _C = -4A, I _B = -40mA			-4.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = -1.5A ; V _{CE} = -3V			-2.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = -45V, I _E = 0			-0.2	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = -45V, I _B = 0			-0.5	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = -5V; I _C = 0			-2	mA
h _{FE-1}	DC Current Gain	I _C = -1.5A ; V _{CE} = -3V	750		20000	
h _{FE-2}	DC Current Gain	I _C = -4A ; V _{CE} = -3V	100			

Switching Times

t _{on}	Turn-On Time	I _C = 2A, I _{B1} = I _{B2} = 8mA; R _L = 15 Ω ; V _{CC} ≈ 5V		1.0		μ s
t _{off}	Turn-Off Time			4.5		μ s

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