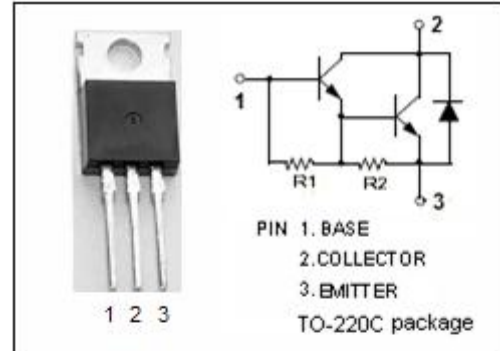


isc Silicon NPN Darlington Power Transistor
BDT65/A/B/C
DESCRIPTION

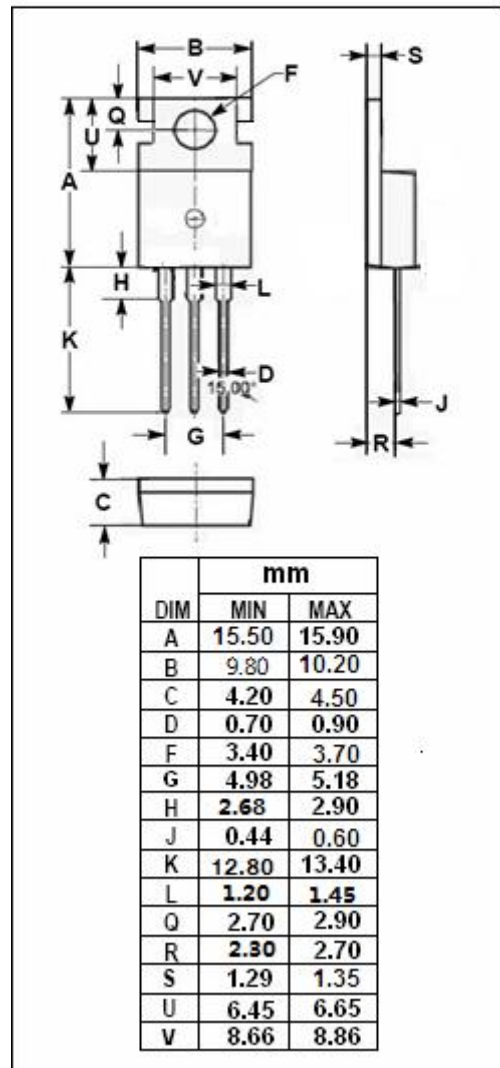
- Collector Current $-I_C = 12A$
- High DC Current Gain $-h_{FE} = 1000(\text{Min}) @ I_C = 5A$
- Complement to Type BDT64/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for audio output stages and general purpose amplifier applications


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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CER}	Collector-Emitter Voltage	BDT65	60
		BDT65A	80
		BDT65B	100
		BDT65C	120
V_{CEO}	Collector-Emitter Voltage	BDT65	60
		BDT65A	80
		BDT65B	100
		BDT65C	120
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	12	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current-Continuous	0.5	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	125	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	1	$^\circ\text{C}/\text{W}$

isc Silicon NPN Darlington Power Transistor
BDT65/A/B/C
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	60			V
			80			
			100			
			120			
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 5A; I _B = 20mA			2.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 10A; I _B = 100mA			3.0	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 5A ; V _{CE} = 4V			2.5	V
V _{ECF-1}	C-E Diode Forward Voltage	I _F = 5A			2.0	V
V _{ECF-2}	C-E Diode Forward Voltage	I _F = 12A		2.0		V
I _{CEO}	Collector Cutoff Current	V _{CE} = 1/2V _{CEOmax} ; I _B = 0			0.2	mA
I _{CBO}	Collector Cutoff Current	V _{CB} = V _{CB0max} ; I _E = 0 V _{CB} = 1/2V _{CB0max} ; I _E = 0; T _C = 150°C			0.4 2.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C =0			5	mA
h _{FE-1}	DC Current Gain	I _C = 1A ; V _{CE} = 4V		1500		
h _{FE-2}	DC Current Gain	I _C = 5A ; V _{CE} = 4V	1000			
h _{FE-3}	DC Current Gain	I _C = 12A ; V _{CE} = 4V		1000		
C _{OB}	Output Capacitance	I _E = 0 ; V _{CB} = 10V; f _{test} =1MHz		200		pF
Switching times						
t _{on}	Turn-On Time	I _C = 5A; I _{B1} = -I _{B2} = 20mA; V _{CC} = 30V		1	2.5	μs
t _{off}	Turn-Off Time			6.0	10	μs

NOTICE:

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.