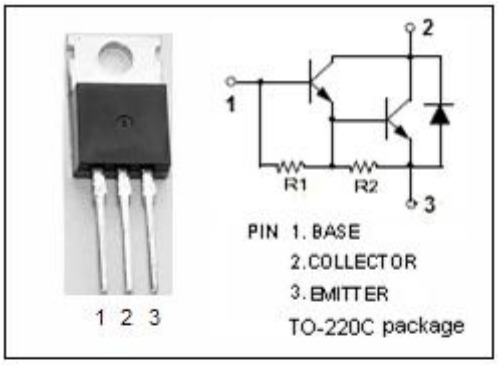
isc Silicon NPN Darlington Power Transistor — BDT65/A/B/C

DESCRIPTION

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

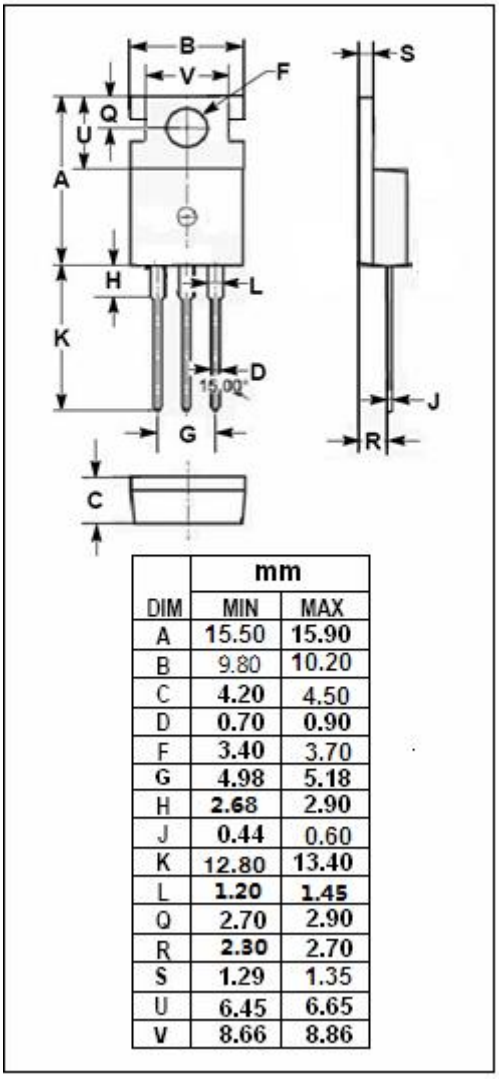


APPLICATIONS

- Designed for audio output stages and general purpose amplifier applications

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CER}	Collector-Emitter Voltage	BDT65	60	V
		BDT65A	80	
		BDT65B	100	
		BDT65C	120	
V_{CEO}	Collector-Emitter Voltage	BDT65	60	V
		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℃		125	W
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1	℃/W

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BDT65	I_C= 30mA ;I_B=0	60			V
		BDT65A		80			
		BDT65B		100			
		BDT65C		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_{CBOmax};I_E= 0 V_{CB}= $^1/_2V_{CBOmax}$;I_E= 0;T_C= 150℃			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

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