

isc Silicon NPN Darlington Power Transistor

BDT63F/A/B/C

DESCRIPTION

- Collector Current $I_C = 10A$
- High DC Current Gain $h_{FE} = 1000(\text{Min}) @ I_C = 10A$
- Complement to Type BDT62F/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

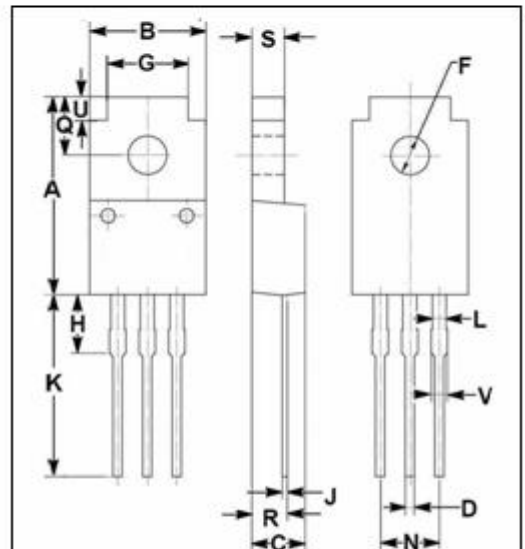
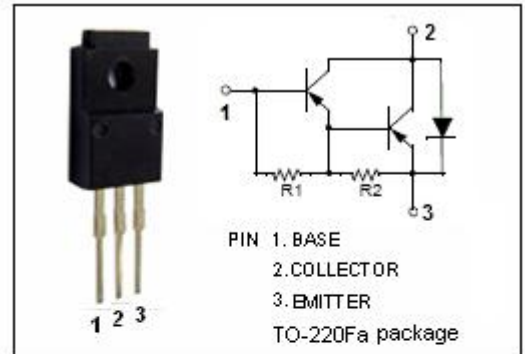
- Designed for audio output stages and general purpose amplifier applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CE}	Collector-Emitter Voltage	BDT63F	60
		BDT63AF	80
		BDT63BF	100
		BDT63CF	120
V_{CEO}	Collector-Emitter Voltage	BDT63F	60
		BDT63AF	80
		BDT63BF	100
		BDT63CF	120
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	10	A
I_{CM}	Collector Current-Peak	15	A
I_B	Base Current-Continuous	0.25	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	90	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	1.39	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	16.85	17.15
B	9.54	10.10
C	4.35	4.65
D	0.75	0.90
F	3.20	3.40
G	6.90	7.20
H	5.15	5.45
J	0.45	0.75
K	13.35	13.65
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.55	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50

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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	BDT63F	$I_C = 30\text{mA}; I_B = 0$	60			V
		BDT63AF		80			
		BDT63BF		100			
		BDT63CF		120			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C = 3\text{A}; I_B = 12\text{mA}$			2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C = 8\text{A}; I_B = 80\text{mA}$			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C = 3\text{A}; V_{CE} = 3\text{V}$			2.5	V
V_{ECF}	C-E Diode Forward Voltage		$I_F = 3\text{A}$			2.0	V
I_{CEO}	Collector Cutoff Current		$V_{CE} = \frac{1}{2}V_{CEOmax}; I_B = 0$			0.5	mA
I_{CBO}	Collector Cutoff Current		$V_{CB} = V_{CB0max}; I_E = 0$ $V_{CB} = \frac{1}{2}V_{CB0max}; I_E = 0; T_C = 150^{\circ}\text{C}$			0.2 2.0	mA
I_{EBO}	Emitter Cutoff Current		$V_{EB} = 5\text{V}; I_C = 0$			5	mA
h_{FE-1}	DC Current Gain		$I_C = 3\text{A}; V_{CE} = 3\text{V}$	1000			
h_{FE-2}	DC Current Gain		$I_C = 10\text{A}; V_{CE} = 3\text{V}$		3000		
C_{OB}	Output Capacitance		$I_E = 0; V_{CB} = 10\text{V}; f_{test} = 1\text{MHz}$		100		pF

Switching times

t_{on}	Turn-On Time	$I_C = 3\text{A}; I_{B1} = -I_{B2} = 12\text{mA};$ $V_{CC} = 10\text{V}$		1.0	2.5	μs
t_{off}	Turn-Off Time			5.0	10	μs

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