

isc Silicon NPN Darlington Power Transistor

BDT63/A/B/C

DESCRIPTION

- Collector Current $I_C = 10A$
- High DC Current Gain $h_{FE} = 1000(\text{Min}) @ I_C = 3A$
- Complement to Type BDT62/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

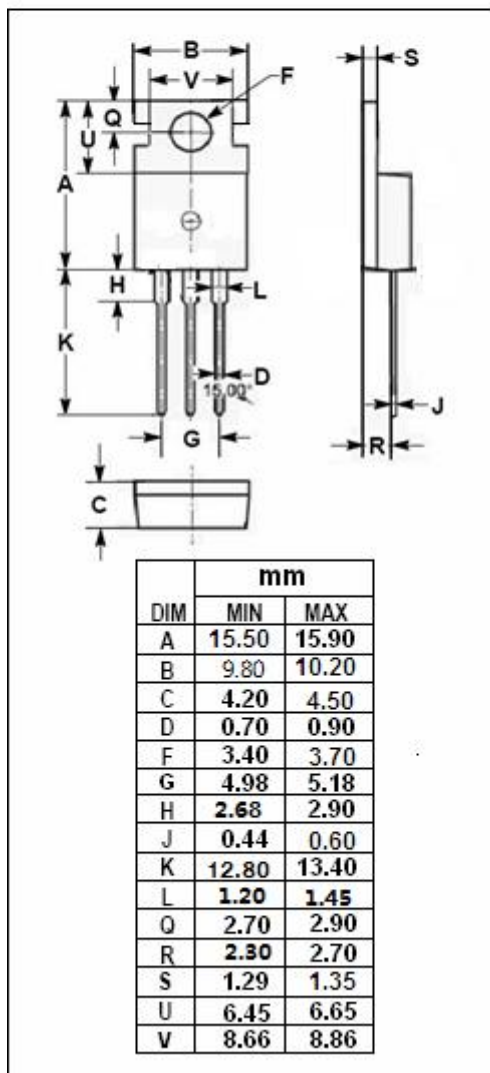
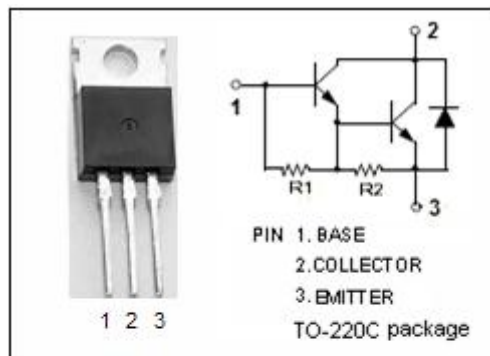
- Designed for audio output stages and general purpose amplifier applications

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

SYMBOL	PARAMETER		VALUE	UNIT
V_{CER}	Collector-Emitter Voltage	BDT63	60	V
		BDT63A	80	
		BDT63B	100	
		BDT63C	120	
V_{CEO}	Collector-Emitter Voltage	BDT63	60	V
		BDT63A	80	
		BDT63B	100	
		BDT63C	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 @ $T_{\text{C}}=25^{\circ}\text{C}$		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	$^\circ\text{C/W}$



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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	BDT63	60			V
		BDT63A	80			
		BDT63B	100			
		BDT63C	120			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=3A; I_B=12mA$			2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=8A; I_B=80mA$			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=3A; V_{CE}=3V$			2.5	V
V_{ECF}	C-E Diode Forward Voltage	$I_F=3A$			2.0	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=1/2V_{CE0max}; I_B=0$			0.5	mA
I_{CBO}	Collector Cutoff Current	$V_{CB}=V_{CB0max}; I_E=0$ $V_{CB}=1/2V_{CB0max}; I_E=0; T_C=150^{\circ}\text{C}$			0.2 2.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5V; I_C=0$			5	mA
h_{FE-1}	DC Current Gain	$I_C=3A; V_{CE}=3V$	1000			
h_{FE-2}	DC Current Gain	$I_C=10A; V_{CE}=3V$		3000		
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10V; f_{test}=1MHz$		100		pF
Switching times						
t_{on}	Turn-On Time	$I_C=3A; I_{B1}=-I_{B2}=12mA;$ $V_{CC}=10V$		1.0	2.5	μs
t_{off}	Turn-Off Time			5.0	10	μs

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