

isc Silicon NPN Darlington Power Transistor

BDT65F/AF/BF/CF

DESCRIPTION

- Collector Current $-I_C = 12A$
- High DC Current Gain $-h_{FE} = 1000(\text{Min}) @ I_C = 5A$
- Complement to Type BDT64F/AF/BF/CF
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

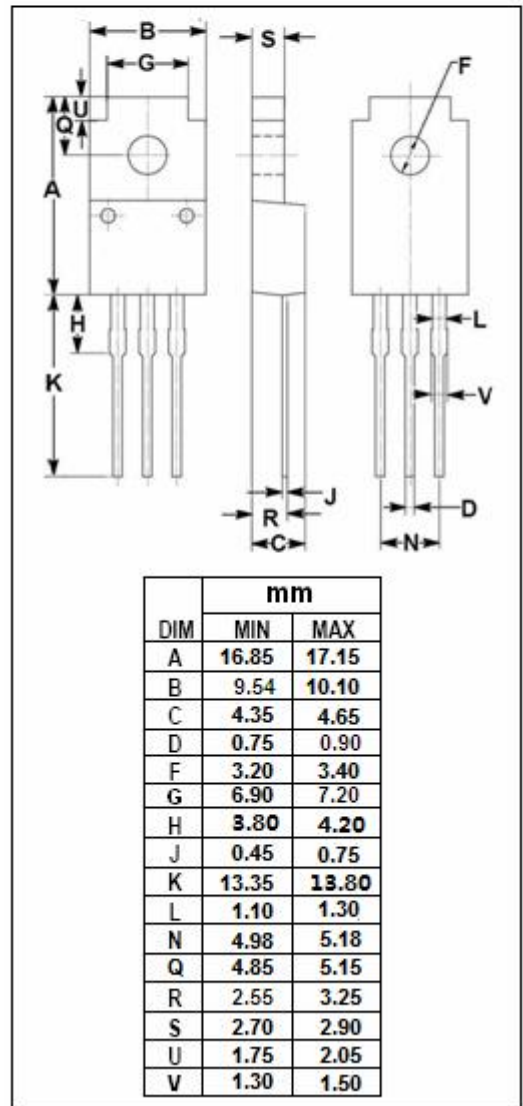
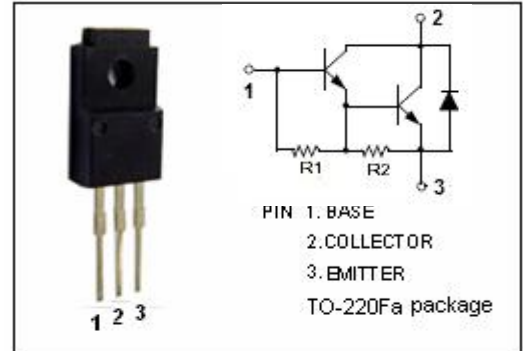
- Designed for audio output stages and general purpose amplifier applications

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

SYMBOL	PARAMETER		VALUE	UNIT
V _{CER}	Collector-Emitter Voltage	BDT65F	60	V
		BDT65AF	80	
		BDT65BF	100	
		BDT65CF	120	
V _{CEO}	Collector-Emitter Voltage	BDT65F	60	V
		BDT65AF	80	
		BDT65BF	100	
		BDT65CF	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℃		39	W
T _J	Junction Temperature		150	℃
T _{stg}	Storage Temperature Range		-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	5.7	$^\circ\text{C/W}$



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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	BDT65F	60			V
		BDT65AF	80			
		BDT65BF	100			
		BDT65CF	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}	C-E Diode Forward Voltage	$I_F=5A$			2.0	V
I_{CEO}	Collector Cutoff Current	$V_{CE}=1/2V_{CE0max}; I_B=0$			1	mA
I_{CBO}	Collector Cutoff Current	$V_{CB}=V_{CB0max}; I_E=0$ $V_{CB}=1/2V_{CB0max}; I_E=0; T_C=150^{\circ}\text{C}$			0.4 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	$I_C=12A; V_{CE}=4V$		1500		
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	10	μs

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