

INCHANGE Semiconductor

isc Product Specification

isc Silicon PNP Darlington Power Transistors

BDT60F/AF/BF/CF

DESCRIPTION

- DC Current Gain $-h_{FE} = 750(\text{Min}) @ I_C = -1.5\text{A}$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = -60\text{V}(\text{Min})$ - BDT60F; $-80\text{V}(\text{Min})$ - BDT60AF
 $-100\text{V}(\text{Min})$ - BDT60BF; $-120\text{V}(\text{Min})$ - BDT60CF
- Complement to Type BDT61F/61AF/61BF/61CF

APPLICATIONS

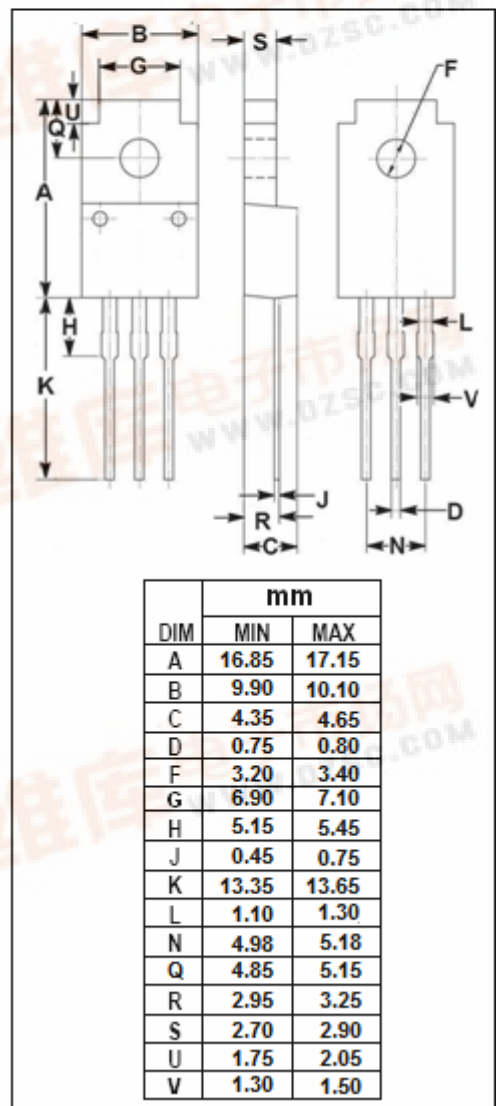
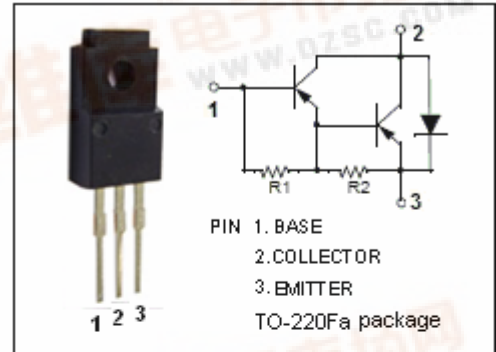
- Designed for use in audio amplifier output stages , general purpose amplifier and high speed switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDT60F	-60
		BDT60AF	-80
		BDT60BF	-100
		BDT60CF	-120
V_{CEO}	Collector-Emitter Voltage	BDT60F	-60
		BDT60AF	-80
		BDT60BF	-100
		BDT60CF	-120
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-4	A
I_{CM}	Collector Current-Pulse	-6	A
I_B	Base Current	-0.1	A
P_C	Collector Power Dissipation $T_C=25^\circ\text{C}$	25	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	5	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	BDT60F	$I_C = -30\text{mA}; I_B = 0$	-60			V
		BDT60AF		-80			
		BDT60BF		-100			
		BDT60CF		-120			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C = -1.5\text{A}; I_B = -6\text{mA}$			-2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C = -1.5\text{A}; V_{CE} = -3\text{V}$			-2.5	V
I_{CBO}	Collector Cutoff Current		$V_{CB} = -30\text{V}; I_E = 0$ $V_{CB} = \frac{1}{2}V_{CBO}; I_E = 0; T_J = 150^{\circ}\text{C}$			-0.2 -1	mA
I_{CEO}	Collector Cutoff Current		$V_{CE} = \frac{1}{2}V_{CEQ}; I_B = 0$			-0.2	mA
I_{EBO}	Emitter Cutoff Current		$V_{EB} = -5\text{V}; I_C = 0$			-5	mA
h_{FE-1}	DC Current Gain		$I_C = -0.5\text{A}; V_{CE} = -3\text{V}$		2000		
h_{FE-2}	DC Current Gain		$I_C = -1.5\text{A}; V_{CE} = -3\text{V}$	750			
h_{FE-3}	DC Current Gain		$I_C = -4\text{A}; V_{CE} = -3\text{V}$		250		
V_{ECF-1}	C-E Diode Forward Voltage		$I_F = 1.5\text{A}$			2	V
V_{ECF-2}	C-E Diode Forward Voltage		$I_F = 4\text{A}$		2.1		V

Switching Times

t_{on}	Turn-On Time	$I_C = -1.5\text{A}; I_{B1} = -I_{B2} = -6\text{mA}$		0.3	1.5	μs
t_{off}	Turn-Off Time			1.5	5.0	μs