

**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**

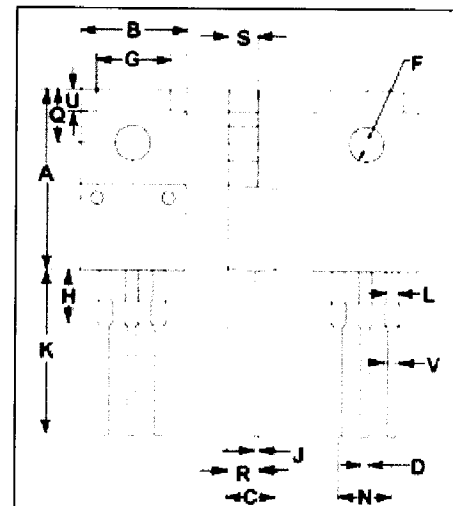
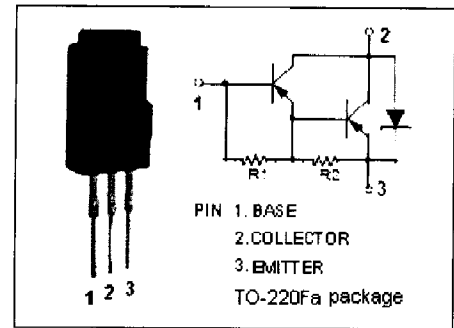
- Designed for use in audio amplifier output stages, general purpose amplifier and high speed switching applications

**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	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	16.85	17.15
B	9.90	10.10
C	4.35	4.65
D	0.75	0.80
F	3.20	3.40
G	6.90	7.10
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	2.95	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50



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# BDT60F/AF/BF/CF

## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = -30\text{mA}; I_B = 0$	BDT60F	-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	$V_{CE} = \frac{1}{2}V_{CEO}; I_B = 0$			-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	$\mu\text{s}$
$t_{off}$	Turn-Off Time			1.5	5.0	$\mu\text{s}$