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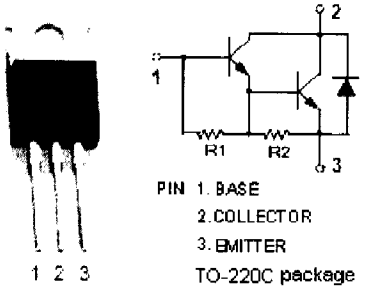
Silicon NPN Darlington Power Transistors — BDT61/A/B/C

DESCRIPTION

- DC Current Gain -h_{FE} = 750(Min)@ I_C= 1.5A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 60V(Min)- BDT61; 80V(Min)- BDT61A;
  100V(Min)- BDT61B; 120V(Min)- BDT61C
- Complement to Type BDT60/A/B/C

APPLICATIONS

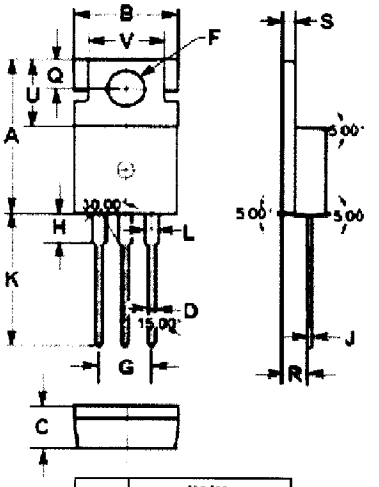
- Designed for use in audio amplifier output stages , general purpose amplifier and high speed switching applications



PIN 1. BASE
2.COLLECTOR
3. EMITTER
TO-220C package

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDT61	60	V
		BDT61A	80	
		BDT61B	100	
		BDT61C	120	
V_{CEO}	Collector-Emitter Voltage	BDT61	60	V
		BDT61A	80	
		BDT61B	100	
		BDT61C	120	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		4	A
I_B	Base Current		0.1	A
P_C	Collector Power Dissipation T_a=25℃		2	W
	Collector Power Dissipation T_C=25℃		50	
T_j	Junction Temperature		150	℃
T_{stg}	Storage Ttemperature Range		-65~150	℃



DIM	mm MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	2.5	℃/W
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Ambient	62.5	℃/W

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BDT61	I_C= 30mA; I_B= 0	60			V
		BDT61A		80			
		BDT61B		100			
		BDT61C		120			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C= 1.5A; I_B= 6mA			2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 1.5A ; V_{CE}= 3V			2.5	V
I_{CBO}	Collector Cutoff Current	BDT61	V_{CB}= 60V; I_E= 0 V_{CB}= 30V; I_E= 0; T_J=150℃			0.2 2.0	mA
		BDT61A	V_{CB}= 80V; I_E= 0 V_{CB}= 40V; I_E= 0; T_J=150℃			0.2 2.0	
		BDT61B	V_{CB}= 100V; I_E= 0 V_{CB}= 50V; I_E= 0; T_J=150℃			0.2 2.0	
		BDT61C	V_{CB}= 120V; I_E= 0 V_{CB}= 60V; I_E= 0; T_J=150℃			0.2 2.0	
I_{CEO}	Collector Cutoff Current	BDT61	V_{CE}= 30V; I_B= 0			0.5	mA
		BDT61A	V_{CE}= 40V; I_B= 0			0.5	
		BDT61B	V_{CE}= 50V; I_B= 0			0.5	
		BDT61C	V_{CE}= 60V; I_B= 0			0.5	
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C= 0			5	mA
h_{FE}	DC Current Gain		I_C= 1.5A; V_{CE}= 3V	750			
V_{ECF}	C-E Diode Forward Voltage		I_E= 1.5A			2.0	V
Switching Times							
t_{on}	Turn-On Time		I_C= 2A; I_{B1}= -I_{B2}= 8mA; $V_{BE(off)}$= -5V; R_L= 20 Ω		1.0		μ s
t_{off}	Turn-Off Time				4.5		μ s