

isc Silicon PNP Darlington Power Transistors

BDT60/A/B/C

DESCRIPTION

- DC Current Gain $-h_{FE} = 750(\text{Min})@ I_C = -1.5\text{A}$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = -60\text{V}(\text{Min})$ - BDT60; $-80\text{V}(\text{Min})$ - BDT60A;
 $-100\text{V}(\text{Min})$ - BDT60B; $-120\text{V}(\text{Min})$ - BDT60C
- Complement to Type BDT61/A/B/C

APPLICATIONS

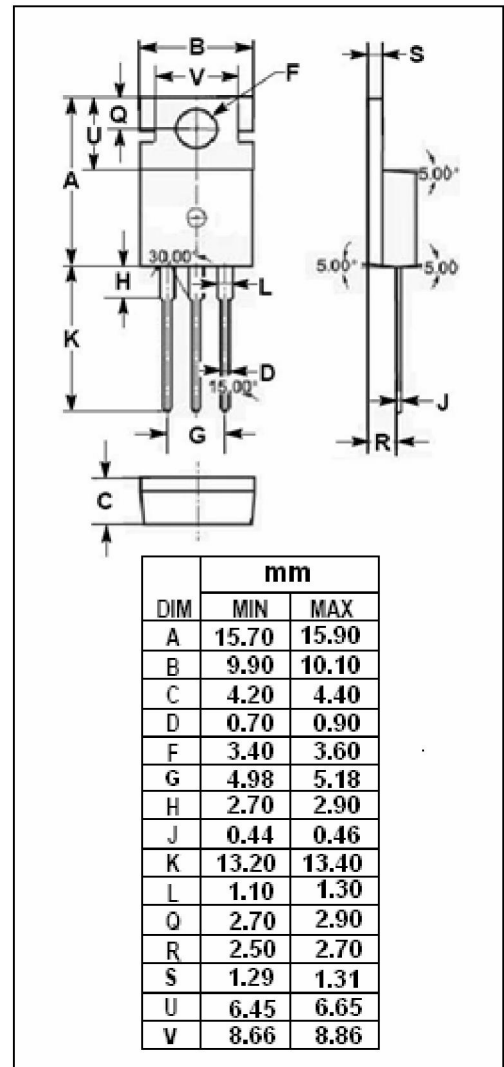
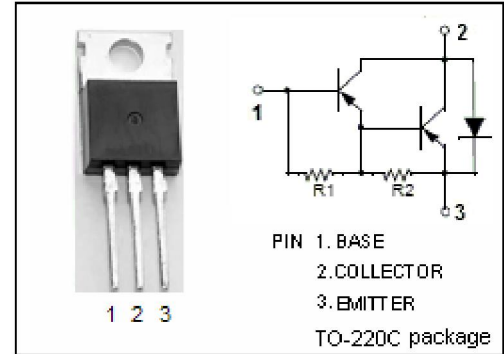
- Designed for use in audio amplifier output stages , general purpose amplifier and high speed switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BDT60	-60	V
		BDT60A	-80	
		BDT60B	-100	
		BDT60C	-120	
V_{CEO}	Collector-Emitter Voltage	BDT60	-60	V
		BDT60A	-80	
		BDT60B	-100	
		BDT60C	-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 $T_a=25^\circ\text{C}$	2	W	
	Collector Power Dissipation $T_c=25^\circ\text{C}$	50		
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	2.5	$^\circ\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C}/\text{W}$



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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	BDT60	$I_C = -30\text{mA}; I_B = 0$			V
		BDT60A		-60		
		BDT60B		-80		
		BDT60C		-100		
$V_{CE(sat)}$	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	BDT60	$V_{CB} = -60\text{V}; I_E = 0$ $V_{CB} = -30\text{V}; I_E = 0; T_J = 150^\circ\text{C}$			mA
		BDT60A		-0.2		
		BDT60B		-2.0		
		BDT60C		-0.2		
I_{CEO}	Collector Cutoff Current	BDT60	$V_{CE} = -30\text{V}; I_B = 0$			mA
		BDT60A		-0.5		
		BDT60B		-0.5		
		BDT60C		-0.5		
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5\text{V}; I_C = 0$			-5	mA
h_{FE}	DC Current Gain	$I_C = -1.5\text{A}; V_{CE} = -3\text{V}$	750			
V_{ECF}	C-E Diode Forward Voltage	$I_E = -1.5\text{A}$			-2.0	V

Switching Times

t_{on}	Turn-On Time	$I_C = -2\text{A}; I_{B1} = -I_{B2} = -8\text{mA};$ $V_{BE(off)} = 5\text{V}; R_L = 20\Omega$		1.0		μs
t_{off}	Turn-Off Time			4.5		μs