

Silicon PNP Power Transistors

BDT30F/AF/BF/CF/DF

DESCRIPTION

- DC Current Gain $-h_{FE} = 40(\text{Min}) @ I_C = -0.4\text{A}$
- Collector-Emitter Sustaining Voltage-
 : $V_{CEO(\text{SUS})} = -40\text{V}(\text{Min})$ - BDT30F; $-60\text{V}(\text{Min})$ - BDT30AF
 $-80\text{V}(\text{Min})$ - BDT30BF; $-100\text{V}(\text{Min})$ - BDT30CF
 $-120\text{V}(\text{Min})$ - BDT30DF
- Complement to Type BDT29F/AF/BF/CF/DF

APPLICATIONS

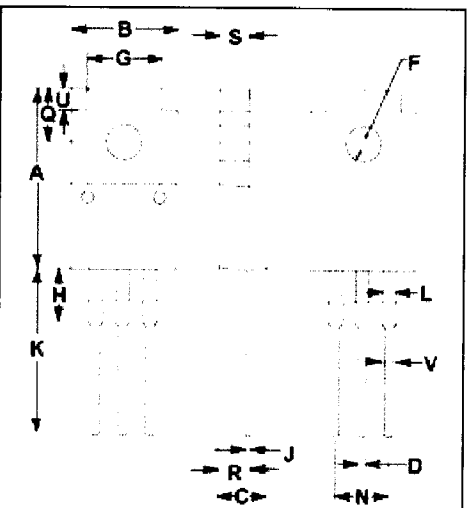
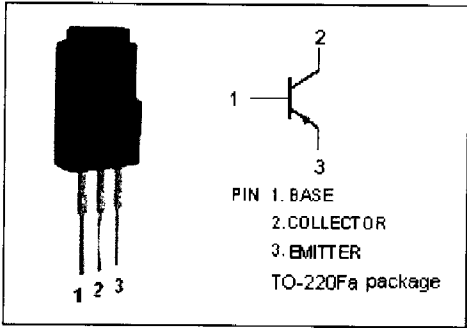
- Designed for use in audio output stages , general purpose amplifier and high speed switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BDT30F	-80	V
		BDT30AF	-100	
		BDT30BF	-120	
		BDT30CF	-140	
		BDT30DF	-160	
V_{CEO}	Collector-Emitter Voltage	BDT30F	-40	V
		BDT30AF	-60	
		BDT30BF	-80	
		BDT30CF	-100	
		BDT30DF	-120	
V_{EBO}	Emitter-Base Voltage	-5	V	
I_C	Collector Current-Continuous	-1	A	
I_{CM}	Collector Current-Peak	-3	A	
I_B	Base Current	-0.4	A	
P_C	Collector Power Dissipation $T_C=25^\circ\text{C}$	19	W	
T_j	Junction Temperature	150	$^\circ\text{C}$	
T_{stg}	Storage Ttemperature Range	-65~150	$^\circ\text{C}$	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{th-j-c}	Thermal Resistance, Junction to Case	9.17	$^\circ\text{C/W}$
R_{th-j-a}	Thermal Resistance, Junction to Ambient	55	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	16.85	17.15
B	9.90	10.10
C	4.35	4.65
D	0.75	0.80
E	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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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V _{CE(SUS)}	Collector-Emitter Sustaining Voltage	BDT30F	-40			V	
		BDT30AF	-60				
		BDT30BF	-80				
		BDT30CF	-100				
		BDT30DF	-120				
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = -1A; I _B = -0.125A			-0.7	V	
V _{BE(on)}	Base-Emitter On Voltage	I _C = -1A; V _{CE} = -4V			-1.3	V	
I _{CES}	Collector Cutoff Current	V _{CE} = V _{CE(max)} ; V _{BE} = 0			-0.2	mA	
I _{CEO}	Collector Cutoff Current	BDT30F/AF	V _{CE} = -30V; I _B = 0			-0.1	mA
		BDT30BF/CF	V _{CE} = -60V; I _B = 0				
		BDT30DF	V _{CE} = -90V; I _B = 0				
I _{EBO}	Emitter Cutoff Current	V _{EB} = -5V; I _C = 0			-0.2	mA	
h _{FE-1}	DC Current Gain	I _C = -0.2A; V _{CE} = -4V	40				
h _{FE-2}	DC Current Gain	I _C = -1A; V _{CE} = -4V	15		75		
f _T	Current-Gain—Bandwidth Product	I _C = -0.2A; V _{CE} = -10V	3			MHz	

Switching Times

t _{on}	Turn-On Time	I _C = -1.0A; I _{B1} = -I _{B2} = -0.1A		0.3		μs
t _{off}	Turn-Off Time			1.0		μs