

Silicon PNP Power Transistors

BDT30/A/B/C

DESCRIPTION

- DC Current Gain $-h_{FE} = 40(\text{Min})@ I_C = -0.4A$
- Collector-Emitter Sustaining Voltage-
 : $V_{CEO(\text{SUS})} = -40V(\text{Min})$ - BDT30; $-60V(\text{Min})$ - BDT30A
 $-80V(\text{Min})$ - BDT30B; $-100V(\text{Min})$ - BDT30C
- Complement to Type BDT29/A/B/C

APPLICATIONS

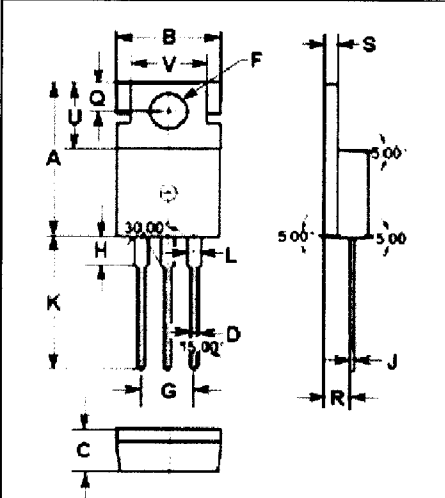
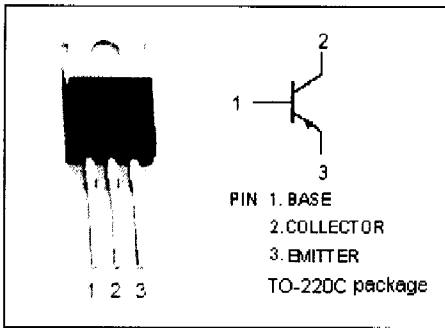
- Designed for use in output stages of audio and television amplifier circuits where high peak powers can occur.

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	BDT30	-80	V
		BDT30A	-100	
		BDT30B	-120	
		BDT30C	-140	
V_{CEO}	Collector-Emitter Voltage	BDT30	-40	V
		BDT30A	-60	
		BDT30B	-80	
		BDT30C	-100	
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 $T_C=25^\circ\text{C}$	30	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	4.17	$^\circ\text{C/W}$
R_{th-j-a}	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



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



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
$V_{CE(SUS)}$	Collector-Emitter Sustaining Voltage	BDT30	-40			V	
		BDT30A	-60				
		BDT30B	-80				
		BDT30C	-100				
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -1\text{A}; I_B = -0.125\text{A}$			-0.7	V	
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -1\text{A}; V_{CE} = -4\text{V}$			-1.3	V	
I_{CES}	Collector Cutoff Current	$V_{CE} = V_{CE0max}; V_{BE} = 0$			-0.2	mA	
I_{CEO}	Collector Cutoff Current	BDT30/A	$V_{CE} = -30\text{V}; I_B = 0$			-0.1	mA
		BDT30B/C	$V_{CE} = -60\text{V}; I_B = 0$				
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5\text{V}; I_C = 0$			-0.2	mA	
h_{FE-1}	DC Current Gain	$I_C = -0.2\text{A}; V_{CE} = -4\text{V}$	40				
h_{FE-2}	DC Current Gain	$I_C = -1\text{A}; V_{CE} = -4\text{V}$	15		75		
f_T	Current-Gain—Bandwidth Product	$I_C = -0.2\text{A}; V_{CE} = -10\text{V}$	3			MHz	

Switching Times

t_{on}	Turn-On Time	$I_C = -1.0\text{A}; I_{B1} = -I_{B2} = -0.1\text{A}$		0.3		μs
t_{off}	Turn-Off Time			1.0		μs