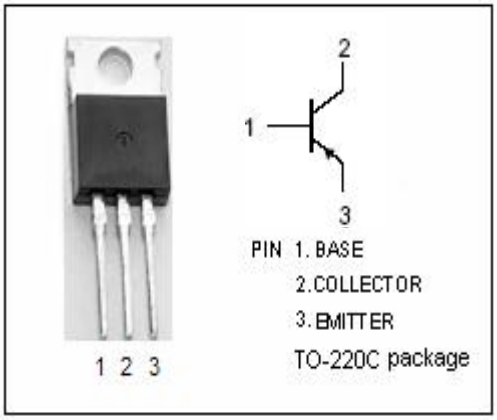
isc Silicon PNP Power Transistors — BDT42/A/B/C

DESCRIPTION

- DC Current Gain -h_{FE} = 30(Min)@ I_C= -0.3A
- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = -40V(Min)- BDT42; -60V(Min)- BDT42A
  -80V(Min)- BDT42B; -100V(Min)- BDT42C
- Complement to Type BDT41/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

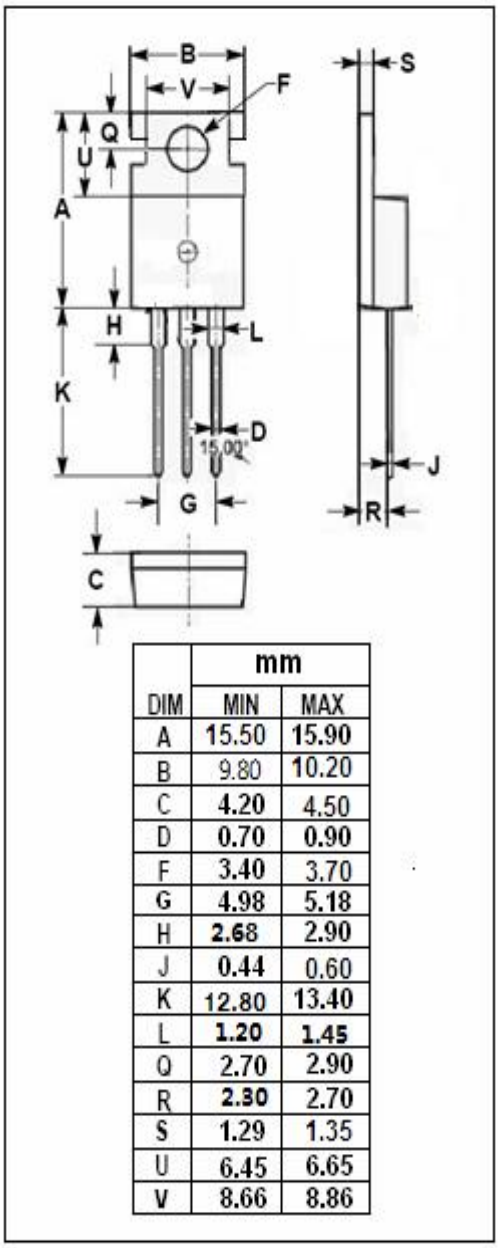
- Designed for use in general purpose amplifer and switching applications

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDT42	-80	V
		BDT42A	-100	
		BDT42B	-120	
		BDT42C	-140	
V_{CEO}	Collector-Emitter Voltage	BDT42	-40	V
		BDT42A	-60	
		BDT42B	-80	
		BDT42C	-100	
V_{EBO}	Emitter-Base Voltage		-5	V
I_C	Collector Current-Continuous		-6	A
I_{CM}	Collector Current-Peak		-10	A
I_B	Base Current		-3	A
P_C	Collector Power Dissipation T_C=25℃		65	W
T_j	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	1.92	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	70	℃/W



DIM	mm MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BDT42	I_C= -30mA; I_B= 0	-40			V
		BDT42A		-60			
		BDT42B		-80			
		BDT42C		-100			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C= -6A; I_B= -0.6A			-1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= -6A ; V_{CE}= -4V			-2.0	V
I_{CES}	Collector Cutoff Current		V_{CE}= V_{CEOmax}; V_{BE}= 0			-0.4	mA
I_{CEO}	Collector Cutoff Current	BDT42/A	V_{CE}= -30V; I_B= 0			-0.2	mA
		BDT42B/C	V_{CE}= -60V; I_B= 0				
I_{EBO}	Emitter Cutoff Current		V_{EB}= -5V; I_C= 0			-0.5	mA
h_{FE-1}	DC Current Gain		I_C= -0.3A ; V_{CE}= -4V	30			
h_{FE-2}	DC Current Gain		I_C= -3A ; V_{CE}= -4V	15		75	
f_T	Current-Gain—Bandwidth Product		I_C= -0.5A ; V_{CE}= -10V	3			MHz
Switching Times							
t_{on}	Turn-On Time		I_C= -6A; I_{B1}= -I_{B2}= -0.6A		0.4		μs
t_{off}	Turn-Off Time				0.7		μs

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