

**Silicon NPN Power Transistors**

**BDT41/A/B/C**

**DESCRIPTION**

- DC Current Gain  $-h_{FE} = 30(\text{Min}) @ I_C = 0.3A$
- Collector-Emitter Sustaining Voltage-  
 :  $V_{CEO(\text{SUS})} = 40V(\text{Min})$ - BDT41;  $60V(\text{Min})$ - BDT41A  
 80V(Min)- BDT41B;  $100V(\text{Min})$ - BDT41C
- Complement to Type BDT42/42A/42B/42C

**APPLICATIONS**

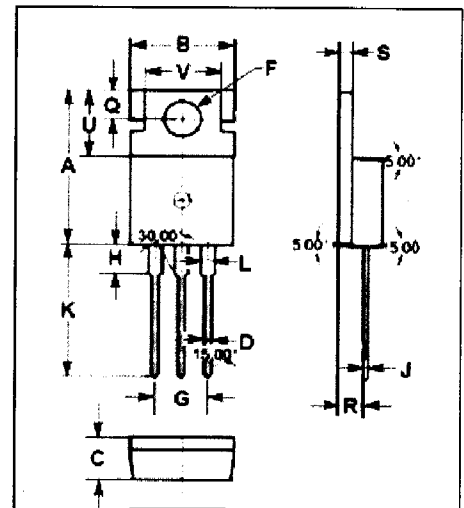
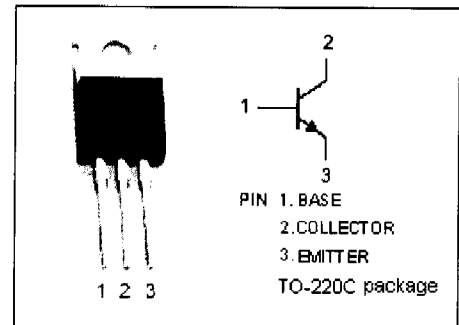
- Designed for use in general purpose amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
$V_{CBO}$	Collector-Base Voltage	BDT41	80	V
		BDT41A	100	
		BDT41B	120	
		BDT41C	140	
$V_{CEO}$	Collector-Emitter Voltage	BDT41	40	V
		BDT41A	60	
		BDT41B	80	
		BDT41C	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 $T_C=25^\circ\text{C}$	65	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
$R_{th-jc}$	Thermal Resistance, Junction to Case	1.92	$^\circ\text{C/W}$
$R_{th-ja}$	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	
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	BDT41	40			V	
		BDT41A <sup>†</sup>	60				
		BDT 41B	80				
		BDT 41C	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	$V_{CE}=V_{CE0max}; V_{BE}=0$			0.4	mA	
$I_{CEO}$	Collector Cutoff Current	BDT41/A	$V_{CE}=30V; I_B=0$			0.2	mA
		BDT41B/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	$I_C=6A; I_{B1}=-I_{B2}=0.6A$		0.6		$\mu s$
$t_{off}$	Turn-Off Time			1.0		$\mu s$