

isc 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
 $80V(\text{Min})$ - BDT41B; $100V(\text{Min})$ - BDT41C
- Complement to Type BDT42/42A/42B/42C

APPLICATIONS

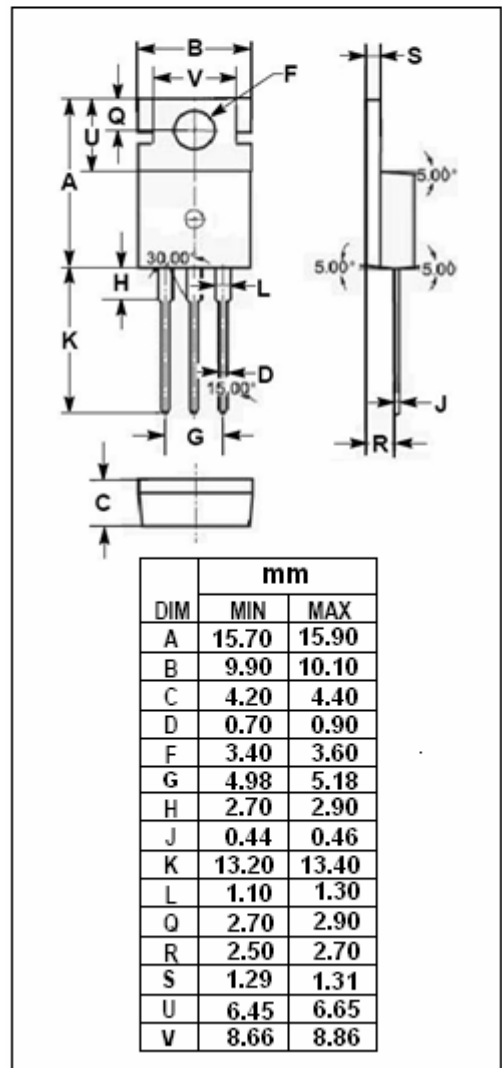
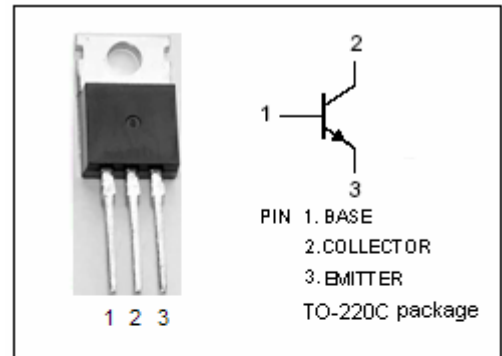
- Designed for use in general purpose amplifier and switching applications

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
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.92	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



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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	BDT41	$I_C=30\text{mA}; I_B=0$	40			V
		BDT41A		60			
		BDT 41B		80			
		BDT 41C		100			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=0.6\text{A}$			1.5	V	
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=6\text{A}; V_{CE}=4\text{V}$			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			0.2	mA	
		BDT41B/C					$V_{CE}=60\text{V}; I_B=0$
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			0.5	mA	
h_{FE-1}	DC Current Gain	$I_C=0.3\text{A}; V_{CE}=4\text{V}$	30				
h_{FE-2}	DC Current Gain	$I_C=3\text{A}; V_{CE}=4\text{V}$	15		75		
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}$	3			MHz	

Switching Times

t_{on}	Turn-On Time	$I_C=6\text{A}; I_{B1}=-I_{B2}=0.6\text{A}$		0.6		μs
t_{off}	Turn-Off Time			1.0		μs