

isc Silicon NPN Power Transistors

BDT41F/AF/BF/CF

DESCRIPTION

- DC Current Gain $-h_{FE} = 30(\text{Min})@ I_C = 0.3\text{A}$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(\text{SUS})} = 40\text{V}(\text{Min})$ - BDT41F; $60\text{V}(\text{Min})$ - BDT41AF
80V(Min)- BDT41BF; $100\text{V}(\text{Min})$ - BDT41CF
- Complement to Type BDT42F/AF/BF/CF

APPLICATIONS

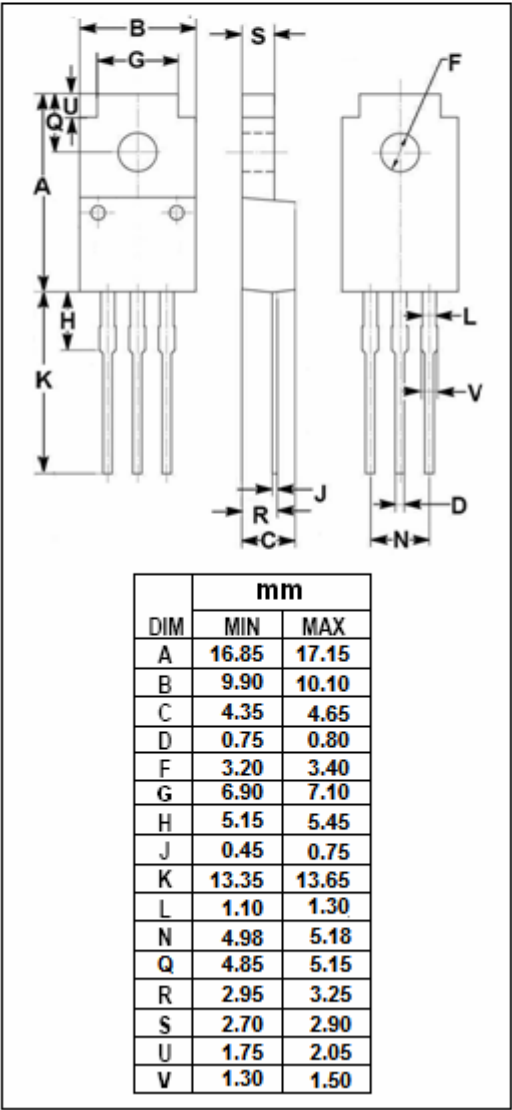
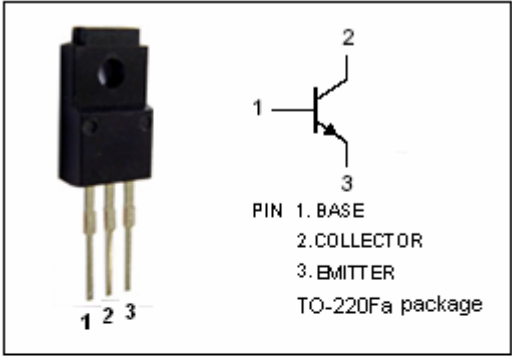
- Designed for use in general purpose amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDT41F	80
		BDT41AF	100
		BDT41BF	120
		BDT41CF	140
V_{CEO}	Collector-Emitter Voltage	BDT41F	40
		BDT41AF	60
		BDT41BF	80
		BDT41CF	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 $T_C=25^{\circ}\text{C}$	32	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	6.3	$^{\circ}\text{C/W}$



isc Silicon NPN Power Transistors

BDT41F/AF/BF/CF

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BDT41F	$I_C=30\text{mA}; I_B=0$	40			V
		BDT41AF		60			
		BDT41BF		80			
		BDT41CF		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		$V_{CE}=V_{CEOmax}; V_{BE}=0$			0.4	mA
I_{CEO}	Collector Cutoff Current	BDT41F/AF	$V_{CE}=30\text{V}; I_B=0$			0.2	mA
		BDT41BF/CF	$V_{CE}=60\text{V}; I_B=0$				
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