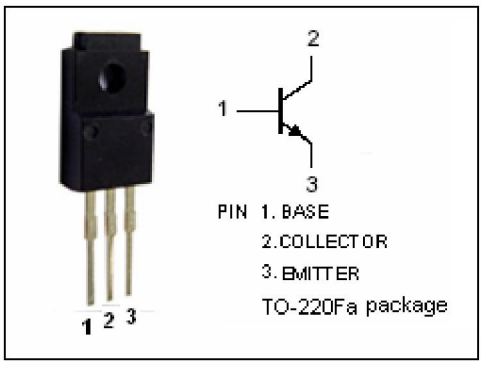
isc Silicon NPN Power Transistors BUT21BF/CF

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
  : $V_{CEO(SUS)}$ = 400V(Min)- BUT21BF
  450V(Min)- BUT21CF
- High Switching Speed

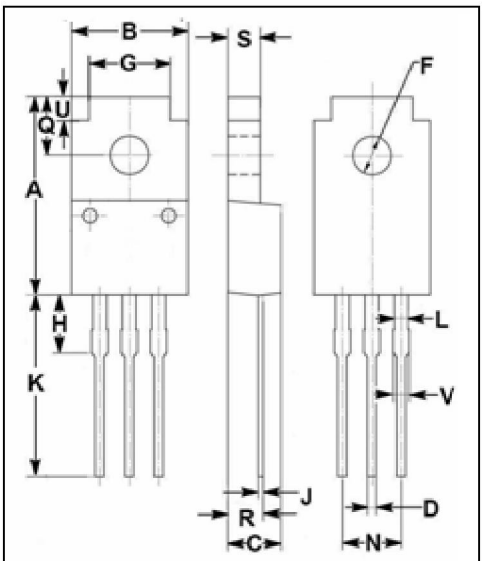


APPLICATIONS

- Designed for use in converters, inverters, switching regulators, motor control systems etc.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CES}	Collector-Emitter Voltage V_{BE}= 0	BUT21BF	750	V
		BUT21CF	850	
V_{CEO}	Collector-Emitter Voltage	BUT21BF	400	V
		BUT21CF	450	
V_{EBO}	Emitter-Base Voltage		9	V
I_C	Collector Current-Continuous		5	A
I_{CM}	Collector Current-Peak		10	A
I_B	Base Current-Continuous		2	A
I_{BM}	Base Current-Peak		4	A
P_C	Collector Power Dissipation @ T_C=25℃		20	W
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃



DIM	mm MIN	MAX
A	16.85	17.15
B	9.90	10.10
C	4.35	4.65
D	0.75	0.80
F	3.20	3.40
G	6.90	7.10
H	5.15	5.45
J	0.45	0.75
K	13.35	13.65
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.95	3.25
S	2.70	2.90
U	1.75	2.05
V	1.30	1.50

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	6.46	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance, Junction to Ambient	55	℃/W

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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	BUT21BF	I_C= 0.1A ;I_B= 0; L= 25mH	400			V
		BUT21CF		450			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	BUT21BF	I_C= 3A; I_B= 0.4A			1.5	V
		BUT21CF	I_C= 3A; I_B= 0.5A			1.5	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	BUT21BF	I_C= 3A; I_B= 0.4A			1.5	V
		BUT21CF	I_C= 3A; I_B= 0.5A			1.5	
I_{CES}	Collector Cutoff Current		V_{CE}= V_{CESmax};V_{BE}= 0			1.0	mA
I_{EBO}	Emitter Cutoff Current		V_{EB}= 9V; I_C=0			10	mA
h_{FE}	DC Current Gain		I_C= 0.5A ; V_{CE}= 10V		25		
Switching Times; Resistive Load							
t_{on}	Turn-On Time		V_{CC}= 250V, t_p= 20 μ s, T= 2ms For BUT21BF I_C= 3A; I_{B1}= -I_{B2}= 0.4A For BUT21CF I_C= 3A; I_{B1}= -I_{B2}= 0.5A			1.0	μ s
t_{stg}	Storage Time					4.5	μ s
t_f	Fall Time					0.7	μ s