

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistors

BUT22BF/CF

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 400V(\text{Min})$ - BUT22BF
450V(Min)- BUT22CF
- High Switching Speed

APPLICATIONS

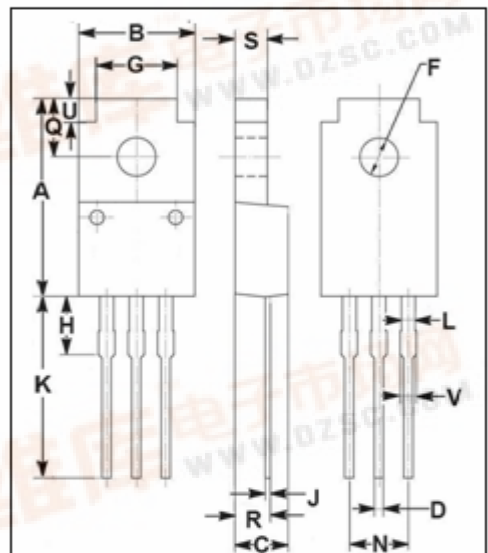
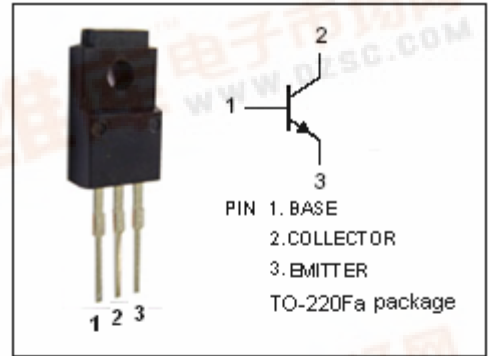
- Designed for use in converters, inverters, switching regulators, motor control systems etc.

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CES}	Collector-Emitter Voltage $V_{BE} = 0$	BUT22BF	750	V
		BUT22CF	850	
V_{CEO}	Collector-Emitter Voltage	BUT22BF	400	V
		BUT22CF	450	
V_{EBO}	Emitter-Base Voltage	9	V	
I_C	Collector Current-Continuous	8	A	
I_{CM}	Collector Current-Peak $t_p < 20\text{ms}$	20	A	
I_B	Base Current-Continuous	4	A	
I_{BM}	Base Current-Peak $t_p < 20\text{ms}$	6	A	
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	23	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	5.5	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	55	$^\circ\text{C/W}$



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



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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	BUT22BF	$I_C=0.1\text{A}; I_B=0; L=25\text{mH}$	400			V
		BUT22CF					
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	BUT22BF	$I_C=6\text{A}; I_B=0.8\text{A}$			1.5	V
		BUT22CF	$I_C=6\text{A}; I_B=1.0\text{A}$			1.5	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	BUT22BF	$I_C=6\text{A}; I_B=0.8\text{A}$			1.5	V
		BUT22CF	$I_C=6\text{A}; I_B=1.0\text{A}$			1.5	
I_{CES}	Collector Cutoff Current		$V_{CE}=V_{CESmax}; V_{BE}=0$			1.0	mA
I_{EBO}	Emitter Cutoff Current		$V_{EB}=9\text{V}; I_C=0$			10	mA
h_{FE}	DC Current Gain		$I_C=1\text{A}; V_{CE}=5\text{V}$		25		

Switching Times; Resistive Load

t_{on}	Turn-On Time	For BUT22BF $I_C=6\text{A}; I_{B1}=-I_{B2}=0.8\text{A}$			1.0	μs
t_{stg}	Storage Time		For BUT22CF $I_C=6\text{A}; I_{B1}=-I_{B2}=1.0\text{A}$			4.5
t_f	Fall Time					0.7