

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistors

BU406F/407F

DESCRIPTION

- High Voltage
- Fast Switching Speed-
: $t_{off} = 0.75 \mu s$ (Max)
- Low Saturation Voltage-
: $V_{CE(sat)} = 1.0V$ (Max)@ $I_C = 5A$

APPLICATIONS

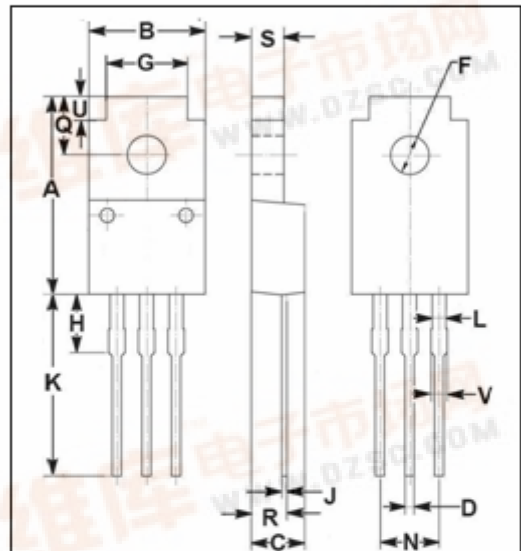
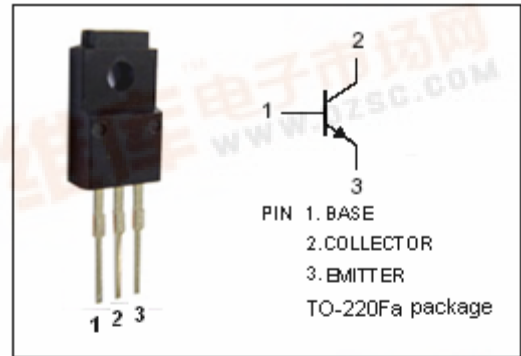
- Designed for use in converters, inverters, switching regulators and motor control systems etc.

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CES}	Collector-Emitter Voltage $V_{BE}=0$	BU406F	400	V
		BU407F	330	
V_{CEO}	Collector-Emitter Voltage	BU406F	200	V
		BU407F	150	
V_{EBO}	Emitter-Base Voltage	5	V	
I_C	Collector Current-Continuous	7	A	
I_{CM}	Collector Current-Peak	15	A	
I_B	Base Current-Continuous	4	A	
I_{BM}	Base Current-Peak	6	A	
P_C	Collector Power Dissipation @ $T_C=25^\circ C$	18	W	
T_J	Junction Temperature	150	$^\circ C$	
T_{stg}	Storage Temperature Range	-65~150	$^\circ C$	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	7	$^\circ C/W$
$R_{th j-a}$	Thermal Resistance, Junction to Ambient	55	$^\circ C/W$



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
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BU406F	$I_C=200\text{mA}; I_B=0; L=25\text{mH}$	200			V
		BU407F		150			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		$I_C=5\text{A}; I_B=0.5\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C=5\text{A}; I_B=0.5\text{A}$			1.2	V
I_{CES}	Collector Cutoff Current		$V_{CE}=V_{CESmax}; V_{BE}=0$			0.05 1	mA
I_{CES}	Collector Cutoff Current	BU406F	$V_{CE}=250\text{V}; V_{BE}=0$ $V_{CE}=350\text{V}; V_{BE}=0; T_J=150^{\circ}\text{C}$			0.1 1	mA
		BU407F	$V_{CE}=200\text{V}; V_{BE}=0$ $V_{CE}=200\text{V}; V_{BE}=0; T_J=150^{\circ}\text{C}$			0.1 1	
I_{EBO}	Emitter Cutoff Current		$V_{EB}=5\text{V}; I_C=0$			1	mA
f_T	Current-Gain—Bandwidth Product		$I_C=0.5\text{A}; V_{CE}=10\text{V}$	4			MHz
t_{off}	Turn-Off Time		$I_C=5\text{A}; I_{B1}=-I_{B2}=0.5\text{A}$			0.75	μs