

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistors

BU406FI/407FI

DESCRIPTION

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

APPLICATIONS

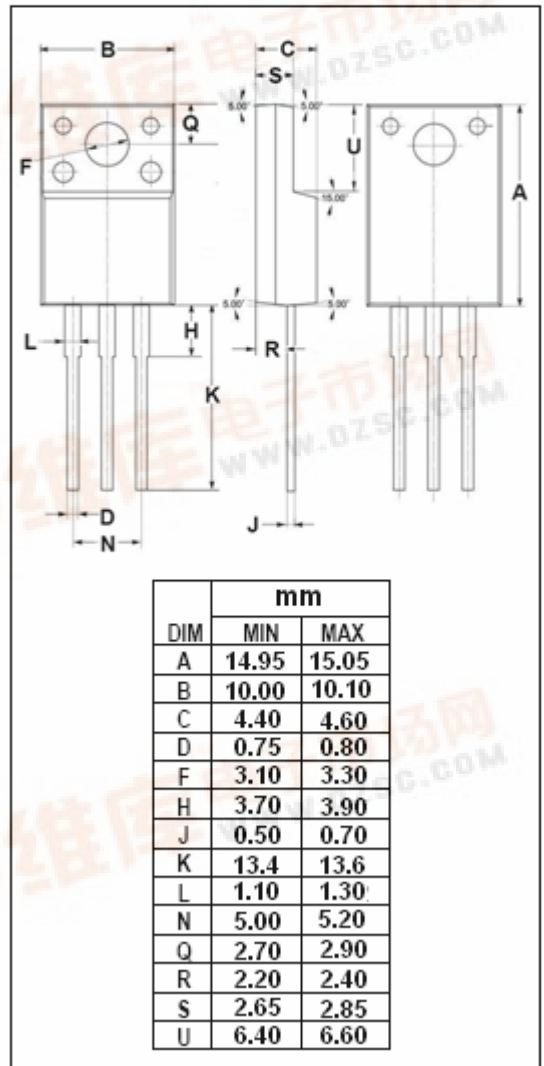
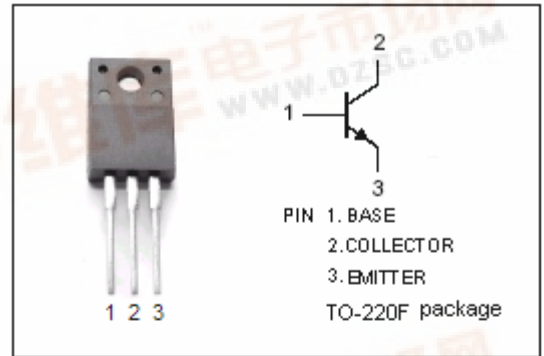
- Designed for use in converters, inverters, switching regulators and motor control systems etc.

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

SYMBOL	PARAMETER		VALUE	UNIT
V_{CES}	Collector-Emitter Voltage	BU406FI	400	V
		BU407FI	330	
V_{CEO}	Collector-Emitter Voltage	BU406FI	200	V
		BU407FI	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	$^\circ C/W$



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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	BU406FI	$I_C = 200\text{mA}$; $I_B = 0$; $L = 25\text{mH}$	200			V
		BU407FI		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 1.0	mA
I_{CES}	Collector Cutoff Current	BU406FI	$V_{CE} = 250\text{V}$; $V_{BE} = 0$ $V_{CE} = 350\text{V}$; $V_{BE} = 0$; $T_J = 150^{\circ}\text{C}$			0.1 1.0	mA
		BU407FI	$V_{CE} = 200\text{V}$; $V_{BE} = 0$ $V_{CE} = 200\text{V}$; $V_{BE} = 0$; $T_J = 150^{\circ}\text{C}$			0.1 1.0	
I_{EBO}	Emitter Cutoff Current		$V_{EB} = 5\text{V}$; $I_C = 0$			1.0	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