

isc Silicon NPN Power Transistor

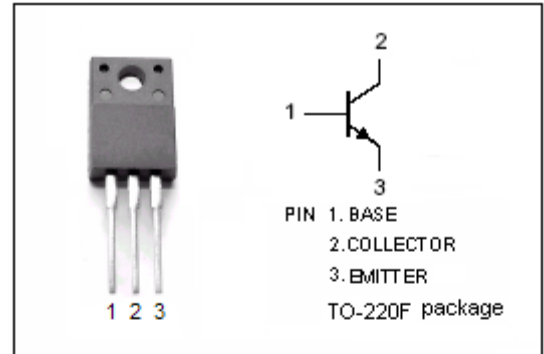
BUT211X

DESCRIPTION

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

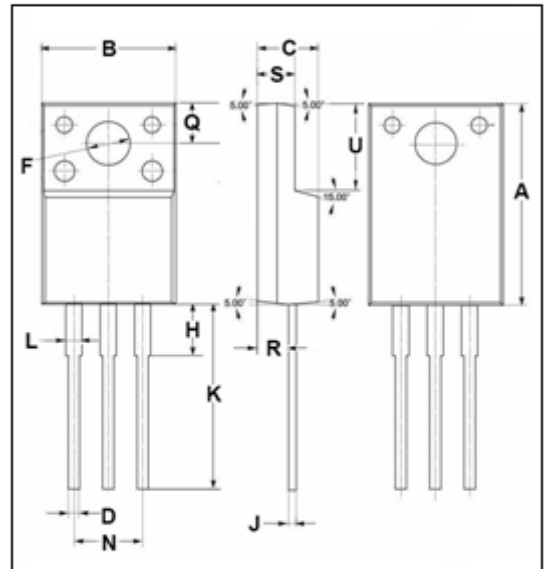
APPLICATIONS

- Designed for high frequency electronic lighting ballast applications.



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	850	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	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 @ $T_c=25^\circ\text{C}$	32	W
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	14.95	15.05
B	10.00	10.10
C	4.40	4.60
D	0.75	0.80
F	3.10	3.30
H	3.70	3.90
J	0.50	0.70
K	13.4	13.6
L	1.10	1.30
N	5.00	5.20
Q	2.70	2.90
R	2.20	2.40
S	2.65	2.85
U	6.40	6.60

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	3.95	$^\circ\text{C/W}$

**isc Silicon NPN Power Transistor****BUT211X****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	$I_C=0.1\text{A}; I_B=0; L=25\text{mH}$	400			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.4\text{A}$			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.4\text{A}$			1.3	V
$I_{CES}$	Collector Cutoff Current	$V_{CE}=850\text{V}; V_{BE}=0$ $V_{CE}=850\text{V}; V_{BE}=0; T_j=125^{\circ}\text{C}$			1.0 2.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=9\text{V}; I_C=0$			10	mA
$h_{FE-1}$	DC Current Gain	$I_C=1\text{A}; V_{CE}=2\text{V}$	13		30	
$h_{FE-2}$	DC Current Gain	$I_C=3\text{A}; V_{CE}=2\text{V}$	7.5			

Switching Times; Resistive Load

$t_s$	Storage Time	$I_C=3\text{A}; I_{B1}=0.3\text{A}; I_{B2}=-0.6\text{A}$			2.0	$\mu\text{s}$
$t_f$	Fall Time				0.8	$\mu\text{s}$

◆  **$h_{FE-1}$  Classifications**

1	2	3
13-20	18-25	23-30