

isc Silicon NPN Power Transistor
BUT56AF
DESCRIPTION

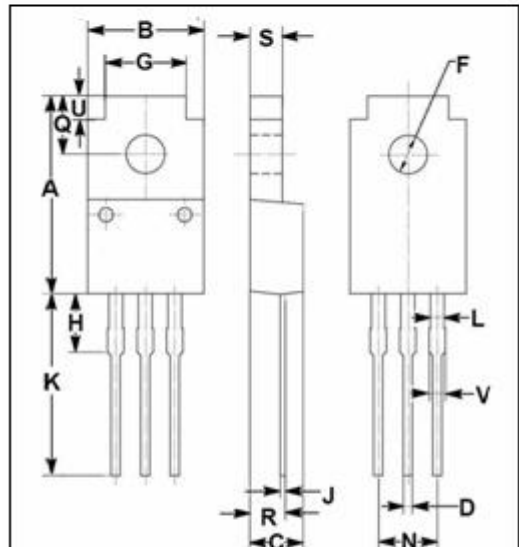
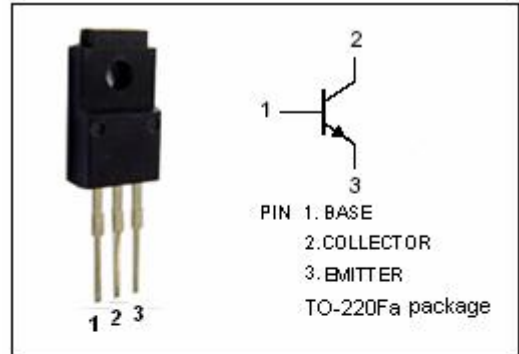
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 450V(\text{Min.})$
- High Speed Switching
- High Power Dissipation
- With TO-220Fa Package
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for switching mode power supply applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CES}	Collector-Emitter Voltage	1000	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	8	A
I_{CM}	Collector Current-Peak	10	A
I_{BM}	Base Current-Peak	4	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	50	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	16.85	17.15
B	9.54	10.10
C	4.35	4.65
D	0.75	0.90
F	3.20	3.40
G	6.90	7.20
H	3.80	4.20
J	0.45	0.75
K	13.35	13.80
L	1.10	1.30
N	4.98	5.18
Q	4.85	5.15
R	2.55	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
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=50\text{mA}; I_B=0$	450			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=1\text{mA}; I_C=0$	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.8\text{A}$			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.8\text{A}$			2.0	V
I_{CES}	Collector Cutoff Current	$V_{CE}=1000\text{V}; V_{BE}=0$ $V_{CE}=1000\text{V}; V_{BE}=0; T_C=150^{\circ}\text{C}$			1 2	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			0.1	mA
h_{FE-1}	DC Current Gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	15		45	
h_{FE-2}	DC Current Gain	$I_C=3\text{A}; V_{CE}=5\text{V}$	4			
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}; f_{test}=1\text{MHz}$		10		MHz

Switching Times ;Resistive Load

t_{off}	Turn-off Time	$I_C=4\text{A}; I_{B1}=-I_{B2}=1.25\text{A}$ $t_p=20\mu\text{s}$			4	μs
t_f	Fall Time				1	μs

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