

isc Silicon NPN Power Transistor

BU706DF

DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 700V(\text{Min})$
- High Switching Speed
- Built-in Integrated Diode

APPLICATIONS

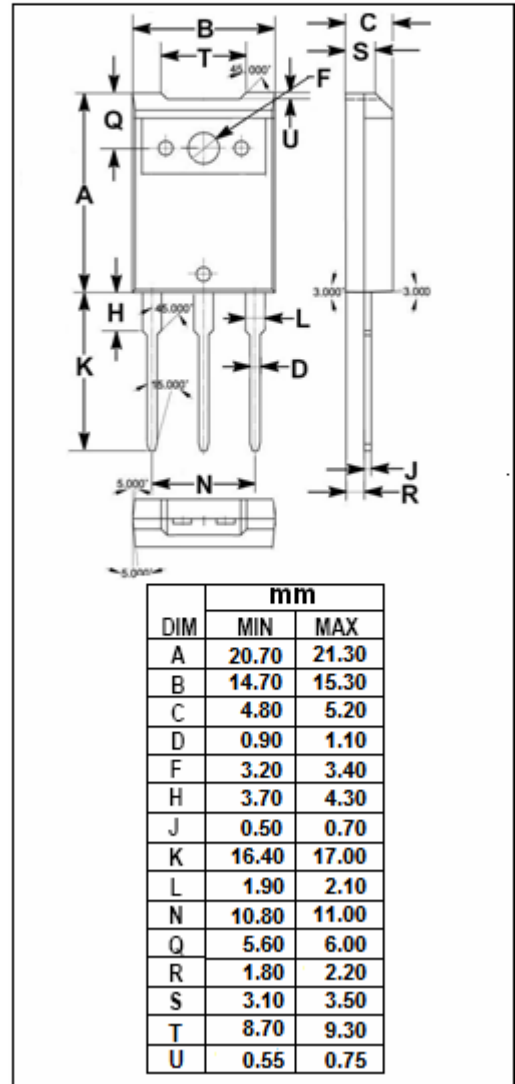
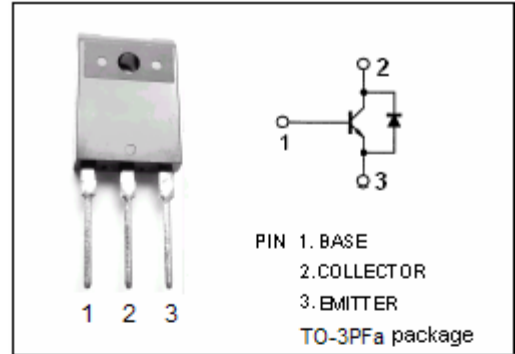
- Designed for use in horizontal deflection circuits of color TV receivers and line operated switch-mode applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CES}$	Collector- Emitter Voltage $V_{BE}=0$	1500	V
$V_{CEO}$	Collector-Emitter Voltage	700	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	5	A
$I_{CM}$	Collector Current-Peak	8	A
$I_B$	Base Current-Continuous	3	A
$I_{BM}$	Base Current-Peak	5	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	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	3.95	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	35	$^\circ\text{C/W}$



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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	$I_C=0.1\text{A}; I_B=0; L=25\text{mH}$	700			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=1.33\text{A}$			5.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=1.33\text{A}$			1.3	V
$I_{CES}$	Collector Cutoff Current	$V_{CE}=V_{CESmax}; V_{BE}=0$ $V_{CE}=V_{CESmax}; V_{BE}=0; T_J=125^{\circ}\text{C}$			0.5 1.0	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=6\text{V}; I_C=0$			10	mA
$h_{FE}$	DC Current Gain	$I_C=3\text{A}; V_{CE}=5\text{V}$	2.25			
$V_{ECF}$	C-E Diode Forward Voltage	$I_F=3\text{A}$		1.5	2.2	V
$I_{S/B}$	Second Breakdown Current	$V_{CE}=300\text{V}; t_p=200\mu\text{s}$	1.0			A

## Switching Times

$t_f$	Fall Time	$I_C=3\text{A}; I_{B(end)}=1\text{A}; L_B=12\mu\text{H}$		0.7		$\mu\text{s}$
$t_s$	Storage Time			6.5		$\mu\text{s}$