

**Silicon PNP Power Transistor**

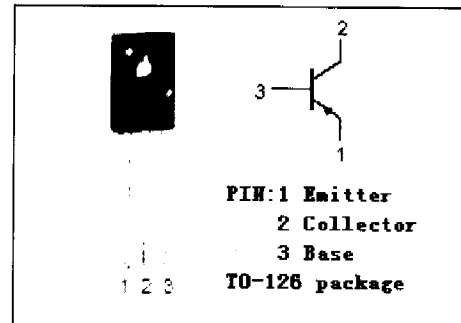
**2SB631K**

**DESCRIPTION**

- High Collector Current- $I_C=-1.0A$
- High Collector-Emitter Breakdown Voltage-  
 $V_{(BR)CEO}=-120V(\text{Min})$
- Good Linearity of  $h_{FE}$
- Low Saturation Voltage
- Complement to Type 2SD600K

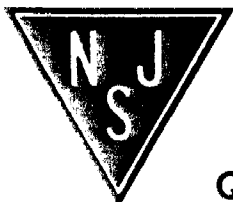
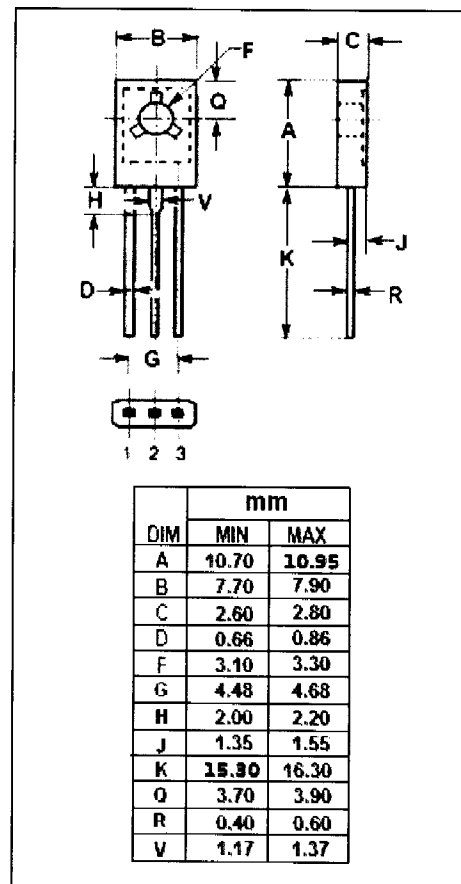
**APPLICATIONS**

- Power amplifier applications



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-120	V
$V_{CEO}$	Collector-Emitter Voltage	-120	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current-Continuous	-1	A
$I_{CP}$	Collector Current-Pulse	-2	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ C$	8	W
	Collector Power Dissipation @ $T_a=25^\circ C$	1	
$T_J$	Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$



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**Quality Semi-Conductors**

# Silicon PNP Power Transistor

# 2SB631K

## ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}$ ; $I_E = 0$	-120			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -1\text{mA}$ ; $R_{BE} = \infty$	-120			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}$ ; $I_C = 0$	-5			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -500\text{mA}$ ; $I_B = -50\text{mA}$			-0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -500\text{mA}$ ; $I_B = -50\text{mA}$			-1.2	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -50\text{V}$ ; $I_E = 0$			-1	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -4\text{V}$ ; $I_C = 0$			-1	$\mu\text{A}$
$h_{FE-1}$	DC Current Gain	$I_C = -50\text{mA}$ ; $V_{CE} = -5\text{V}$	60		320	
$h_{FE-2}$	DC Current Gain	$I_C = -500\text{mA}$ ; $V_{CE} = -5\text{V}$	20			
$f_T$	Current-Gain—Bandwidth Product	$I_C = -50\text{mA}$ ; $V_{CE} = -10\text{V}$		110		MHz
$C_{OB}$	Output Capacitance	$I_E = 0$ ; $V_{CB} = -10\text{V}$ , $f_{test} = 1\text{MHz}$		30		pF

### Switching times

$t_f$	Fall Time	$I_C = -500\text{mA}$ , $R_L = 24\Omega$ , $I_{B1} = -I_{B2} = -50\text{mA}$ , $V_{CE} = -12\text{V}$		0.08		$\mu\text{s}$
$t_{off}$	Turn-Off Time			0.1		$\mu\text{s}$
$t_{stg}$	Storage Time			0.6		$\mu\text{s}$

### ◆ $h_{FE-1}$ Classifications

D	E	F
60-120	100-200	160-320