

**Silicon PNP Power Transistor**

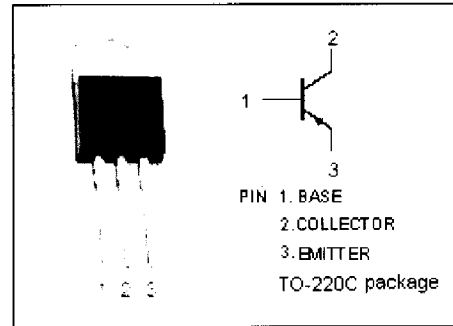
**2SA1011**

**DESCRIPTION**

- Low Collector Saturation Voltage-  
 :  $V_{CE(sat)} = -0.5V(Typ.) @ I_C = -0.5A$
- Collector-Emitter Breakdown Voltage-  
 :  $V_{(BR)CEO} = -160V(Min.)$
- Complement to Type 2SC2344

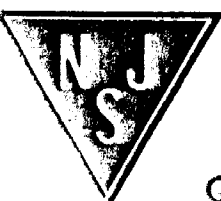
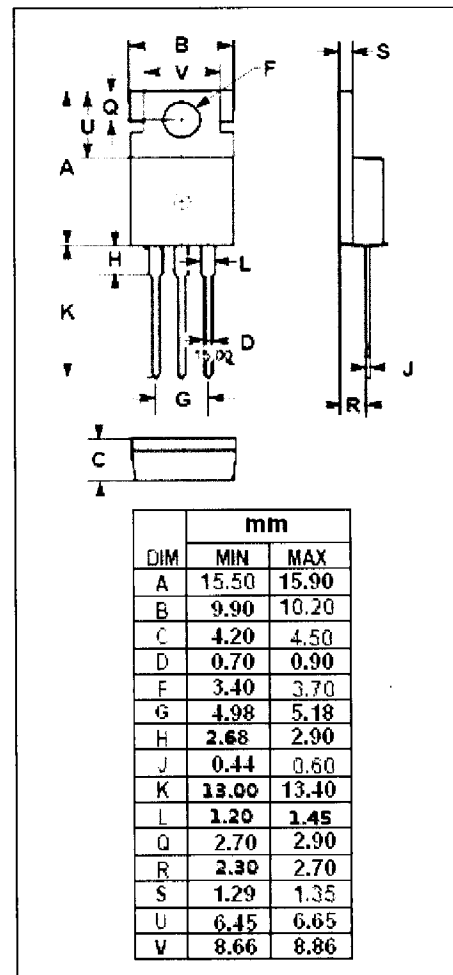
**APPLICATIONS**

- Designed for high-voltage switching, audio frequency power amplifiers, 100W output predriver applications.



**ABSOLUTE MAXIMUM RATINGS(Ta=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-180	V
$V_{CEO}$	Collector-Emitter Voltage	-160	V
$V_{EBO}$	Emitter-Base Voltage	-6	V
$I_C$	Collector Current-Continuous	-1.5	A
$I_{CM}$	Collector Current-Peak	-3.0	A
$P_C$	Total Power Dissipation@ $T_C=25^\circ C$	25	W
$T_J$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature Range	-55~150	°C



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

# Silicon PNP Power Transistor

# 2SA1011

## 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	$I_C = -1\text{mA}; R_{BE} = \infty$	-160			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = -1\text{mA}; I_E = 0$	-180			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\text{mA}; I_C = 0$	-6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -0.5\text{A}; I_B = -50\text{mA}$		-0.5		V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -10\text{mA}; V_{CE} = -5\text{V}$		-1.5		V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -120\text{V}; I_E = 0$			-10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -4\text{V}; I_C = 0$			-10	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C = -0.3\text{A}; V_{CE} = -5\text{V}$	60		200	
$f_T$	Current-Gain—Bandwidth Product	$I_C = -50\text{mA}; V_{CE} = -10\text{V}$		100		MHz
$C_{OB}$	Output Capacitance	$I_E = 0; V_{CB} = -10\text{V}; f_{\text{test}} = 1.0\text{MHz}$		30		pF

### Switching Times

$t_{on}$	Turn-On Time	$I_C = -0.5\text{A}, I_{B1} = -I_{B2} = -50\text{mA}$		0.29		$\mu\text{s}$
$t_{stg}$	Storage Time			0.48		$\mu\text{s}$
$t_f$	Fall Time			0.19		$\mu\text{s}$

### ◆ $h_{FE}$ Classifications

D	E
60-120	100-200