

**Silicon PNP Power Transistor**

**2SA1396**

**DESCRIPTION**

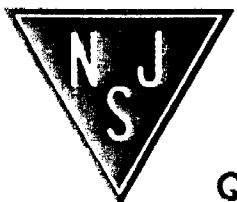
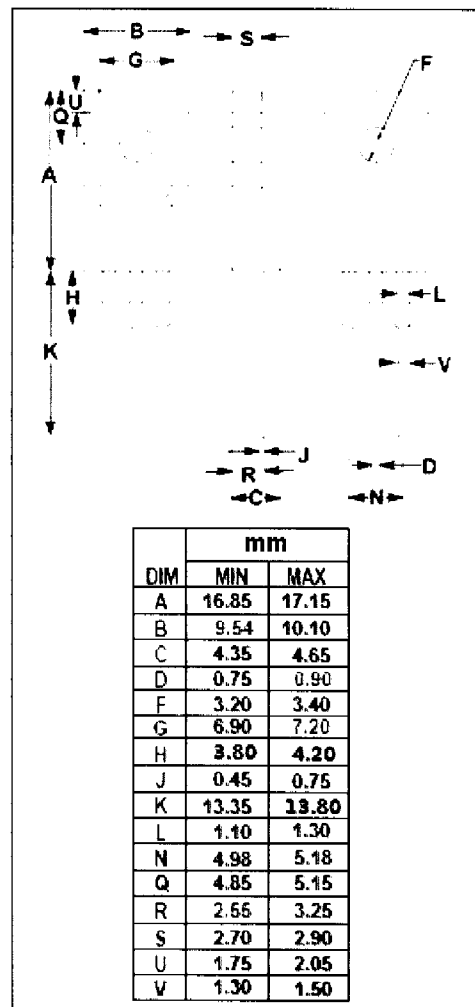
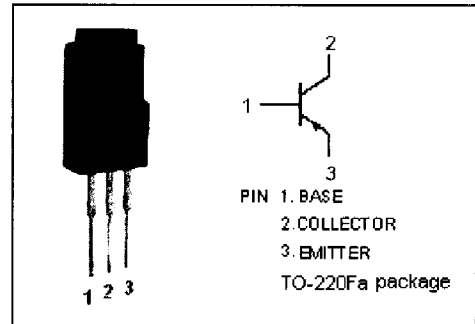
- Low Collector Saturation Voltage-  
 :  $V_{CE(sat)} = -0.6V(\text{Max}) @ I_C = -5A$
- High Switching Speed
- Complement to Type 2SC3568

**APPLICATIONS**

- Designed for switching regulator, DC-DC converter and high frequency power amplifier applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-100	V
$V_{CEO}$	Collector-Emitter Voltage	-100	V
$V_{EBO}$	Emitter-Base Voltage	-7	V
$I_C$	Collector Current-Continuous	-10	A
$I_{CM}$	Collector Current-Peak	-20	A
$I_B$	Base Current-Continuous	-5	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	30	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$



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# 2SA1396

## ELECTRICAL CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = -5A; I <sub>B</sub> = -0.5A, L= 1mH	-100		V
V <sub>CEX(SUS)-1</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = -5A; I <sub>B1</sub> =-I <sub>B2</sub> = -0.5A, L=180μ H, clamped; T <sub>a</sub> =125°C	-100		V
V <sub>CEX(SUS)-2</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = -5A; I <sub>B1</sub> = -1A; I <sub>B2</sub> = 0.5A, L=180μ H, clamped	-100		V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -5A; I <sub>B</sub> = -0.5A		-0.6	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = -5A; I <sub>B</sub> = -0.5A		-1.5	V
I <sub>CB0</sub>	Collector Cutoff Current	V <sub>CB</sub> = -100V; I <sub>E</sub> = 0		-10	μ A
I <sub>CER</sub>	Collector Cutoff Current	V <sub>CE</sub> = -100V; R <sub>BE</sub> = 51Ω, T <sub>a</sub> =125°C		-1.0	mA
I <sub>CEx</sub>	Collector Cutoff Current	V <sub>CE</sub> = -100V; V <sub>BE(off)</sub> = -1.5V V <sub>CE</sub> = -100V; V <sub>BE(off)</sub> = -1.5V, T <sub>a</sub> =125°C		-10 -1.0	μ A mA
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = -5V; I <sub>C</sub> = 0		-10	μ A
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = -0.5A; V <sub>CE</sub> = -5V	40	200	
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = -3A; V <sub>CE</sub> = -5V	40	200	
h <sub>FE-3</sub>	DC Current Gain	I <sub>C</sub> = -5A; V <sub>CE</sub> = -5V	20		

### Switching times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = -5A, R <sub>L</sub> = 10Ω, I <sub>B1</sub> = -I <sub>B2</sub> = -0.5A, V <sub>CC</sub> ≈-50V		0.5	μ s
t <sub>stg</sub>	Storage Time			1.5	μ s
t <sub>f</sub>	Fall Time			0.5	μ s

### ◆ h<sub>FE-2</sub> Classifications

M	L	K
40-80	60-120	100-200