

**Silicon NPN-PNP Power Transistor**

**2SC4131/2SA1746**

**DESCRIPTION**

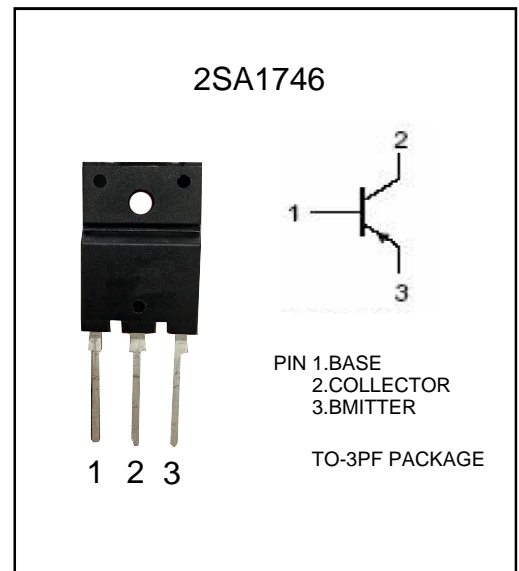
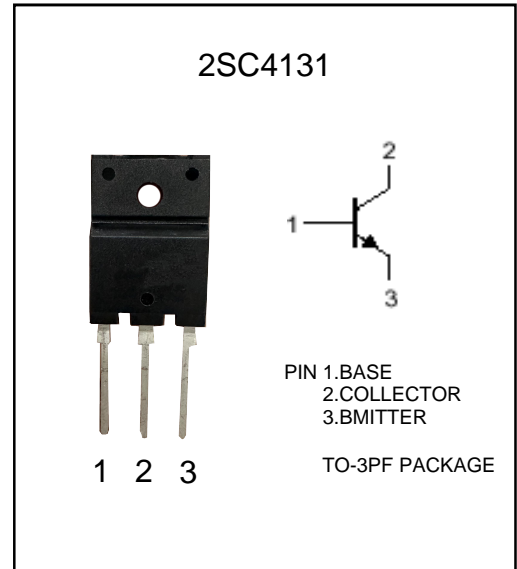
- Low Collector Saturation Voltage  
:  $V_{CE(sat)} = -0.5(V)(Max) @ I_C = -5A$
- Good Linearity of  $h_{FE}$

**APPLICATIONS**

- Designed for chopper regulator, switch and general purpose applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-70	V
$V_{CEO}$	Collector-Emitter Voltage	-50	V
$V_{EBO}$	Emitter-Base Voltage	-6	V
$I_C$	Collector Current-Continuous	-12	A
$I_{CM}$	Collector Current-Peak	-20	A
$I_B$	Base Current-Continuous	-4	A
$P_C$	Collector Power Dissipation @ $T_c=25^{\circ}C$	60	W
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-55~150	$^{\circ}C$



**ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = -25mA ; I <sub>B</sub> = 0	-50			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -5A; I <sub>B</sub> = -80mA			-0.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = -5A; I <sub>B</sub> = -80mA			-1.2	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = -70V ; I <sub>E</sub> = 0			-10	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = -6V; I <sub>C</sub> = 0			-10	μ A
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = -5A ; V <sub>CE</sub> = -1V	50			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = -10V;f= 1.0MHz		400		pF
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>E</sub> = 1A ; V <sub>CE</sub> = -12V		25		MHz

Switching Times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = -5A , R <sub>L</sub> = 4 Ω , I <sub>B1</sub> = -I <sub>B2</sub> = -80mA, V <sub>CC</sub> = -20V		0.5		μ s
t <sub>stg</sub>	Storage Time			0.6		μ s
t <sub>f</sub>	Fall Time			0.3		μ s

TO-3PF PACKAGE

