

Silicon PNP Power Transistor

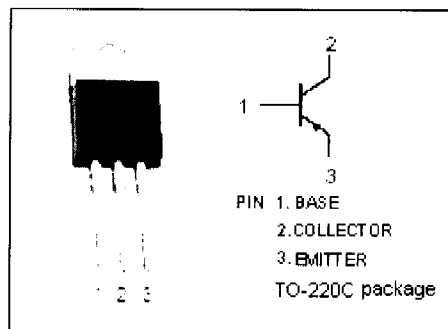
2SA1010

DESCRIPTION

- Low Collector Saturation Voltage
- Fast Switching Speed
- Complement to Type 2SC2334

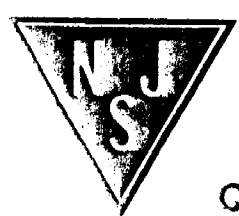
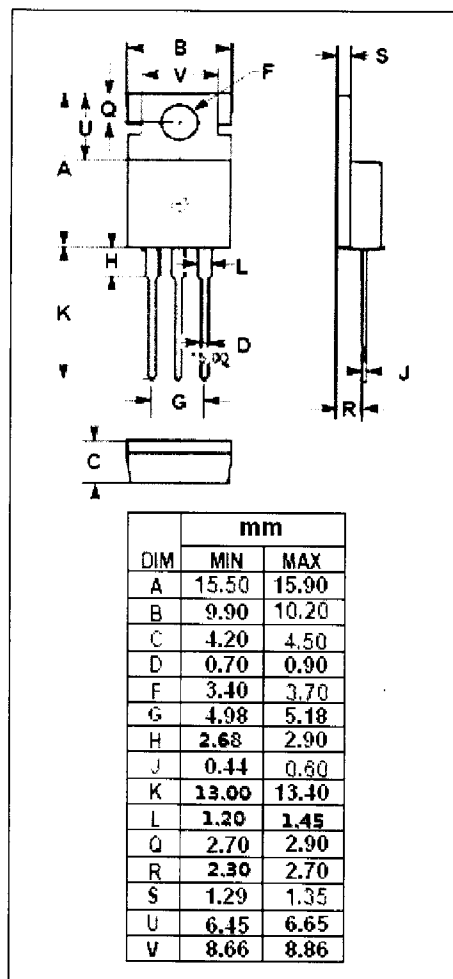
APPLICATIONS

- Developed for high-voltage high-speed switching, and is ideal for use as a driver in devices such as switching regulators, DC/DC converters, and high frequency power amplifiers.



ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{CB0}	Collector-Base Voltage	-100	V
V _{CEO}	Collector-Emitter Voltage	-100	V
V _{EBO}	Emitter-Base Voltage	-7.0	V
I _C	Collector Current-Continuous	-7.0	A
I _{CM}	Collector Current-Peak	-15	A
I _B	Base Current-Continuous	-3.5	A
P _C	Collector Power Dissipation @ T _a =25°C	1.5	W
	Collector Power Dissipation @ T _C =25°C	40	
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature Range	-55~150	°C



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = -5.0A$; $I_B = -0.5A$, $L=1mH$	-100		V
$V_{CEX(SUS)-1}$	Collector-Emitter Sustaining Voltage	$I_C = -5.0A$; $I_{B1} = -I_{B2} = -0.5A$, $V_{BE(OFF)} = 5.0V$, $L=180\mu H$, clamped	-100		V
$V_{CEX(SUS)-2}$	Collector-Emitter Sustaining Voltage	$I_C = -10A$; $I_{B1} = -1.0A$; $I_{B2} = -0.5A$, $V_{BE(OFF)} = 5.0V$, $L=180\mu H$, clamped	-100		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -5.0A$; $I_B = -0.5A$		-0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -5.0A$; $I_B = -0.5A$		-1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = -100V$; $I_E = 0$		-10	μA
I_{CER}	Collector Cutoff Current	$V_{CE} = -100V$; $R_{BE} = 51\Omega$, $T_a = 125^\circ\text{C}$		-1.0	mA
I_{CEX}	Collector Cutoff Current	$V_{CE} = -100V$; $V_{BE(off)} = -1.5V$ $V_{CE} = -100V$; $V_{BE(off)} = -1.5V$, $T_a = 125^\circ\text{C}$		-10 -1.0	μA mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5V$; $I_C = 0$		-10	μA
h_{FE-1}	DC Current Gain	$I_C = -0.5A$; $V_{CE} = -5V$	40	200	
h_{FE-2}	DC Current Gain	$I_C = -3.0A$; $V_{CE} = -5V$	40	200	
h_{FE-3}	DC Current Gain	$I_C = -5.0A$; $V_{CE} = -5V$	20		

Switching times

t_{on}	Turn-on Time	$I_C = -5.0A$, $R_L = 10\Omega$, $I_{B1} = -I_{B2} = -0.5A$, $V_{CC} \approx -50V$		0.5	μs
t_{stg}	Storage Time			1.5	μs
t_f	Fall Time			0.5	μs

◆ h_{FE-2} Classifications

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