

SPTECH Silicon PNP Power Transistor**2SA1010****DESCRIPTION**

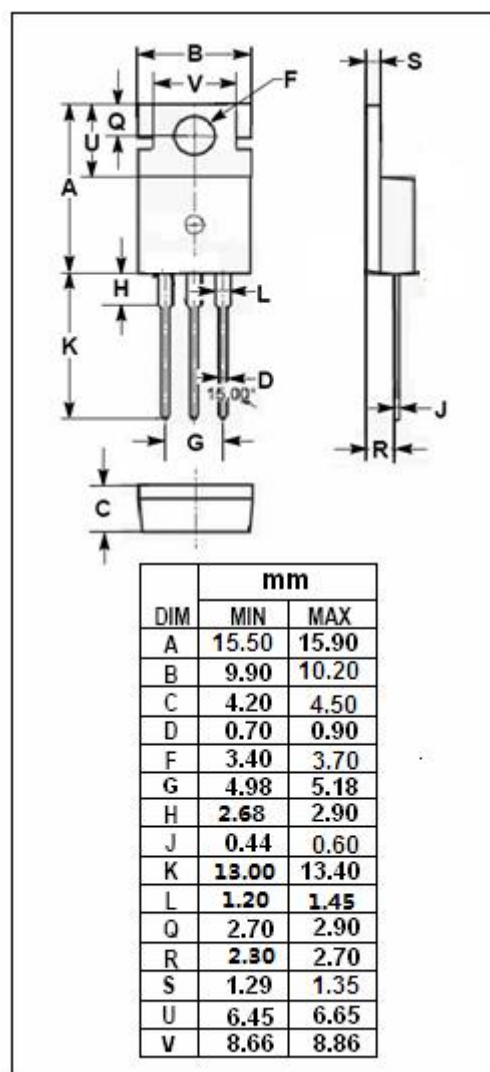
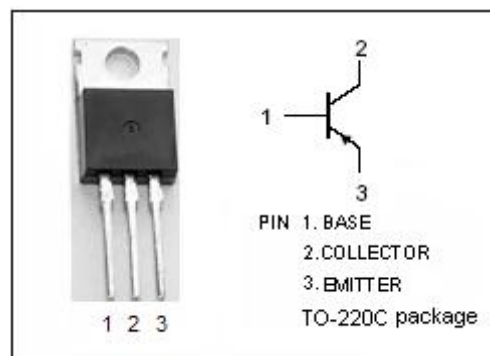
- Low Collector Saturation Voltage
- Fast Switching Speed
- Complement to Type 2SC2334

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($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	-100	V
V_{CEO}	Collector-Emitter Voltage	-100	V
V_{EBO}	Emitter-Base Voltage	-7.0	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 @ $T_a=25^\circ\text{C}$	1.5	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	40	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS

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

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

Switching times

t_{on}	Turn-on Time	$I_C = -5.0\text{A}$, $R_L = 10\text{ }\Omega$, $I_{B1} = -I_{B2} = -0.5\text{A}$, $V_{CC} \approx -50\text{V}$		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