

isc Silicon NPN Power Transistor

2N5493

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 55V(\text{Min})$
- Low Saturation Voltage-
: $V_{CE(sat)} = 1V(\text{Max}) @ I_C = 2.5A$

APPLICATIONS

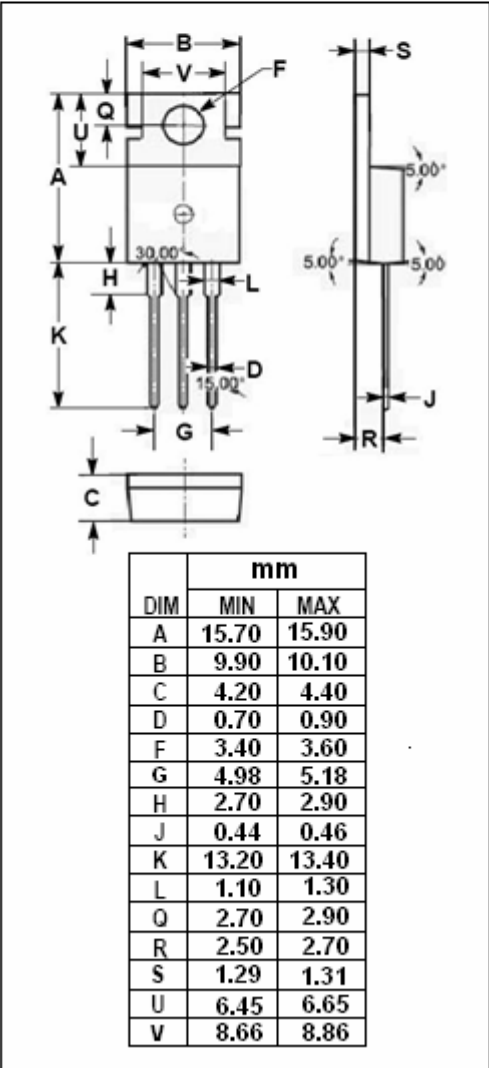
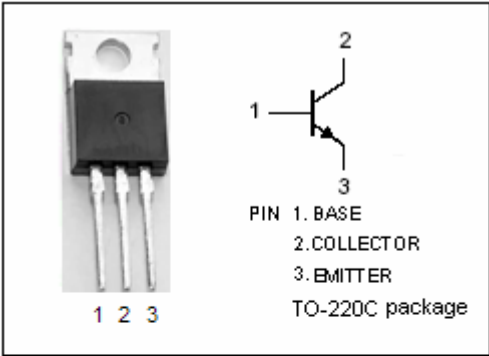
- Designed for a wide variety of medium-power switching and amplifier applications , such as series and shunt regulators and driver and output stages of high-fidelity amplifiers.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	75	V
V_{CEV}	Collector-Emitter Voltage $V_{BE} = -1.5V$	75	V
V_{CER}	Collector-Emitter Voltage $R_{BE} = 100 \Omega$	65	V
V_{CEO}	Collector-Emitter Voltage	55	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	7	A
I_B	Base Current	3	A
P_C	Collector Power Dissipation @ $T_a=25^{\circ}C$	1.8	W
	Collector Power Dissipation @ $T_c=25^{\circ}C$	50	
T_J	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature Range	-65~150	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.5	$^{\circ}C/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^{\circ}C/W$



isc Silicon NPN Power Transistor**2N5493****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 100\text{mA}$; $I_B = 0$	55		V
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 100\text{mA}$; $R_{BE} = 100\ \Omega$	65		V
$V_{CEV(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 100\text{mA}$; $V_{BE} = -1.5\text{V}$	75		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 2.5\text{A}$; $I_B = 0.25\text{A}$		1.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 2.5\text{A}$; $V_{CE} = 4\text{V}$		1.3	V
I_{CEV}	Collector Cutoff Current	$V_{CE} = 70\text{V}$; $V_{BE} = -1.5\text{V}$ $V_{CE} = 70\text{V}$; $V_{BE} = -1.5\text{V}$; $T_C = 125^{\circ}\text{C}$		1.0 5.0	mA
I_{CER}	Collector Cutoff Current	$V_{CE} = 55\text{V}$; $R_{BE} = 100\ \Omega$ $V_{CE} = 55\text{V}$; $R_{BE} = 100\ \Omega$; $T_C = 125^{\circ}\text{C}$		0.5 3.5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5\text{V}$; $I_C = 0$		1.0	mA
h_{FE}	DC Current Gain	$I_C = 2.5\text{A}$; $V_{CE} = 4\text{V}$	20	100	
f_T	Current-Gain—Bandwidth Product	$I_C = 0.5\text{A}$; $V_{CE} = 4\text{V}$	0.8		MHz

Switching Times

t_{on}	Turn-On Time	$I_C = 2.5\text{A}$; $I_{B1} = -I_{B2} = 0.25\text{A}$		5	$\mu\text{ s}$
t_{off}	Turn-Off Time			15	$\mu\text{ s}$