

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

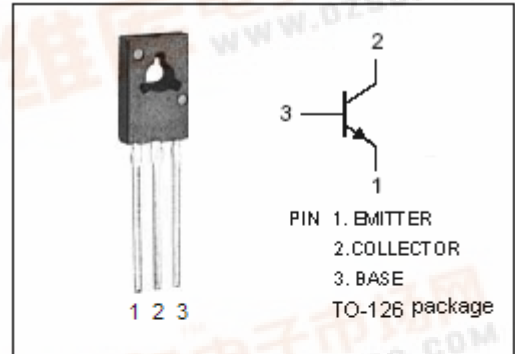
2SC3902

DESCRIPTION

- High Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 160V(\text{Min})$
- Large Current Capacity
- Complement to Type 2SA1507

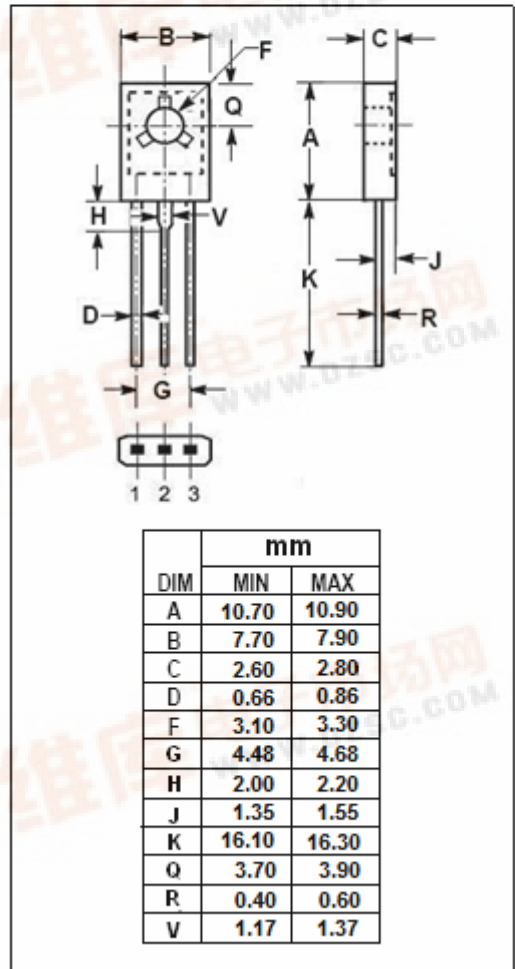
APPLICATIONS

- Color TV audio output, converters, inverters.



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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	180	V
V_{CEO}	Collector-Emitter Voltage	160	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	1.5	A
I_{CM}	Collector Current-Peak	2.5	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	10	W
	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	1.5	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Power Transistor**2SC3902****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=10\mu\text{A}; I_E=0$	180			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}; R_{BE}=\infty$	160			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}; I_C=0$	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=500\text{mA}; I_B=50\text{mA}$			0.45	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=500\text{mA}; I_B=50\text{mA}$			1.2	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=120\text{V}; I_E=0$			0.1	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=4\text{V}; I_C=0$			0.1	μA
h_{FE}	DC Current Gain	$I_C=10\text{mA}; V_{CE}=5\text{V}$	100		400	
f_T	Current-Gain—Bandwidth Product	$I_C=50\text{mA}; V_{CE}=10\text{V}$		120		MHz
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}, f_{test}=1\text{MHz}$		14		pF

Switching Times

t_{on}	Turn-on Time	$I_C=0.7\text{A}, I_{B1}=-I_{B2}=70\text{mA}$ $R_L=14.3\Omega; V_{CC}=100\text{V}$		0.04		μs
t_{stg}	Storage Time			1.2		μs
t_f	Fall Time			0.08		μs

◆ h_{FE} Classifications

R	S	T
100-200	140-280	200-400