

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistor

2N6500

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 90V(\text{Min})$
- Wide Area of Safe Operation

APPLICATIONS

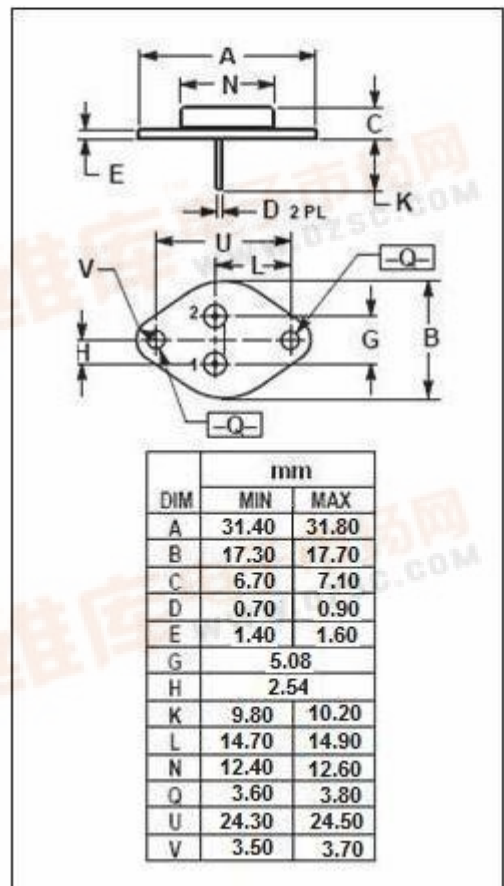
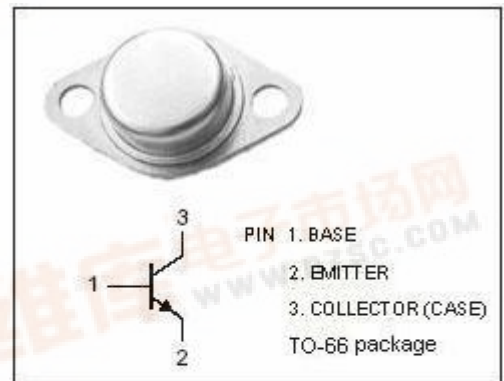
- Designed for use in high-current, high-speed switching circuits such as: low-distortion power amplifiers, oscillators, switching regulators, series regulators, converters, and inverters.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	90	V
V_{CER}	Collector-Emitter Voltage $R_{BE} = 50 \Omega$	110	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	4	A
I_{CM}	Collector Current-Peak	5	A
I_B	Base Current-Continuous	3	A
P_D	Total Power Dissipation @ $T_c = 25^\circ\text{C}$	35	W
T_J	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	5.0	$^\circ\text{C/W}$



isc Silicon NPN Power Transistor**2N6500****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}; I_B=0$	90		V
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=200\text{mA}; R_{BE}=50\Omega$	110		V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$		1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=3\text{A}; I_B=0.3\text{A}$		2.5	V
I_{CEV}	Collector Cutoff Current	$V_{CE}=110\text{V}; V_{BE}=-1.5\text{V}$ $V_{CE}=110\text{V}; V_{BE}=-1.5\text{V}; T_C=150^\circ\text{C}$		5 10	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=70\text{V}; I_B=0$		5	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=7\text{V}; I_C=0$		25	mA
h_{FE}	DC Current Gain	$I_C=3\text{A}; V_{CE}=2\text{V}$	15	60	
$I_{s/b}$	Second Breakdown Collector Current with Base Forward Biased	$V_{CE}=40\text{V}, t=1.0\text{s}, \text{Nonrepetitive}$	0.4		A
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=10\text{V}$	6		MHz
C_{OB}	Collector Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f=1\text{MHz}$		175	pF