

isc Silicon NPN Power Transistor

2N3772

DESCRIPTION

- Excellent Safe Operating Area
- High DC Current Gain- $h_{FE}=15(\text{Min})@I_C = 10A$
- Low Saturation Voltage-
: $V_{CE(sat)}= 1.4V(\text{Max})@ I_C = 10A$

APPLICATIONS

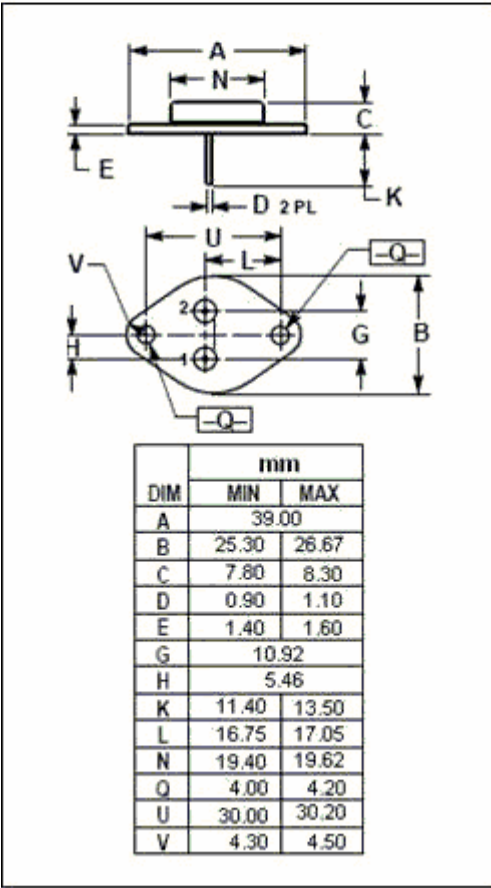
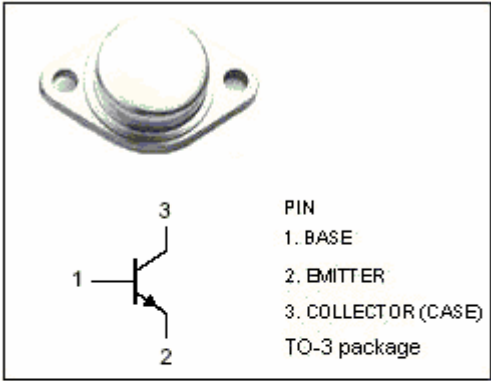
- Designed for linear amplifiers, series pass regulators, and inductive switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEX}	Collector-Emitter Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	20	A
I_{CM}	Collector Current-Peak	30	A
I_B	Base Current-Continuous	5	A
I_{BM}	Base Current-Peak	15	A
P_C	Collector Power Dissipation @ $T_C=25^{\circ}C$	150	W
T_J	Junction Temperature	200	$^{\circ}C$
T_{stg}	Storage Temperature	-65~200	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.17	$^{\circ}C/W$



isc Silicon NPN Power Transistor**2N3772****ELECTRICAL CHARACTERISTICS** **$T_C=25^{\circ}\text{C}$ unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 200\text{mA}$; $I_B = 0$	60		V
$V_{CEX(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 200\text{mA}$; $V_{BE(off)} = 1.5\text{V}$; $R_{BE} = 100\ \Omega$	80		V
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C = 200\text{mA}$; $R_{BE} = 100\ \Omega$	70		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{A}$; $I_B = 1\text{A}$		1.4	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C = 20\text{A}$; $I_B = 4\text{A}$		4.0	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 10\text{A}$; $V_{CE} = 4\text{V}$		2.2	V
I_{CEO}	Collector Cutoff Current	$V_{CE} = 50\text{V}$; $I_B = 0$		10	mA
I_{CEV}	Collector Cutoff Current	$V_{CE} = 100\text{V}$; $V_{BE(off)} = 1.5\text{V}$ $V_{CE} = 45\text{V}$; $V_{BE(off)} = 1.5\text{V}$, $T_C = 150^{\circ}\text{C}$		5.0 10	mA
I_{CBO}	Collector Cutoff Current	$V_{CB} = 100\text{V}$; $I_E = 0$		5.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 7\text{V}$; $I_C = 0$		5.0	mA
h_{FE-1}	DC Current Gain	$I_C = 10\text{A}$; $V_{CE} = 4\text{V}$	15	60	
h_{FE-2}	DC Current Gain	$I_C = 20\text{A}$; $V_{CE} = 4\text{V}$	5		
f_T	Current-Gain—Bandwidth Product	$I_C = 1\text{A}$; $V_{CE} = 4\text{V}$; $f_{test} = 50\text{kHz}$	0.2		MHz
$I_{S/b}$	Second Breakdown Collector Current with Base Forward Biased	$V_{CE} = 60\text{V}$, $t = 1.0\text{s}$, Nonrepetitive	2.5		A