



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

2N3771 & 2N3772 Silicon NPN Transistor High Power Audio Amplifier TO-3 Type Package

Description:

The 2N3771 and 2N3772 are silicon epitaxial-base NPN transistors in a TO-3 type case intended for linear amplifiers and inductive switching applications

Absolute Maximum Ratings:

Collector-Emitter Voltage ($I_E = 0$), V_{CEO}	
1N3771	40V
1N3772	60V
Collector-Emitter Voltage ($V_{BE} = -1.5V$), V_{CEV}	
1N3771	50V
1N3772	80V
Collector-Base Voltage ($I_B = 0$), V_{CBO}	
1N3771	50V
1N3772	100V
Emitter-Base Voltage ($I_C = 0$), V_{EBO}	
1N3771	5V
1N3772	7V
Collector Current, I_C	
1N3771	30A
1N3772	20A
Peak Collector Current, I_{CM}	30A
Base Current, I_B	
1N3771	7.5A
1N3772	5A
Peak Base Current, I_{BM}	15A
Total Device Dissipation ($T_C \leq +25^\circ C$), P_D	150W
Operating Junction Temperature Range, T_J	-65° to +200°C
Storage Temperature Range, T_{stg}	-65° to +200°C
Thermal Resistance, Junction-to-Case, R_{thJC}	1.17°C/W

Electrical Characteristics: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Collector Cutoff Current 1N3771	I_{CEV}	$V_{BE} = -1.5\text{V}$	$V_{CB} = 50\text{V}$	-	-	2	mA
1N3772			$V_{CB} = 100\text{V}$	-	-	5	mA
All Devices			$V_{CB} = 30\text{V}, T_J = +150^\circ\text{C}$	-	-	10	mA
Collector Cutoff Current 1N3771	I_{CEO}	$I_B = 0$	$V_{CB} = 30\text{V}$	-	-	10	mA
1N3772			$V_{CB} = 50\text{V}$	-	-	10	mA
Collector Cutoff Current 1N3771	I_{CBO}	$I_E = 0$	$V_{CB} = 50\text{V}$	-	-	4	mA
1N3772			$V_{CB} = 100\text{V}$	-	-	5	mA
Emitter Cutoff Current 1N3771	I_{EBO}	$I_C = 0$	$V_{CB} = 5\text{V}$	-	-	5	mA
1N3772			$V_{CB} = 7\text{V}$	-	-	5	mA
Collector-Emitter Sustaining Voltage 1N3771	$V_{CEO(sus)}$	$I_C = 200\text{mA}, I_B = 0, \text{Note 1}$		40	-	-	V
1N3772				60	-	-	V
Collector-Emitter Sustaining Voltage 1N3771	$V_{CEV(sus)}$	$V_{BE} = -1.5\text{V}, I_C = 200\text{mA}, R_{BE} = 100\Omega, \text{Note 1}$		50	-	-	V
1N3772				80	-	-	V
Collector-Emitter Sustaining Voltage 1N3771	$V_{CER(sus)}$	$I_C = 200\text{mA}, R_{BE} = 100\Omega, \text{Note 1}$		45	-	-	V
1N3772				70	-	-	V
Collector-Emitter Saturation Voltage 1N3771	$V_{CE(sat)}$	Note 1	$I_C = 15\text{A}, I_B = 1.5\text{A}$	-	-	2	V
1N3772			$I_C = 30\text{A}, I_B = 6\text{A}$	-	-	4	V
			$I_C = 10\text{A}, I_B = 1\text{A}$	-	-	1.4	V
			$I_C = 20\text{A}, I_B = 4\text{A}$	-	-	4	V
Base-Emitter Voltage 1N3771	V_{BE}	$V_{CE} = 4\text{V}, \text{Note 1}$	$I_C = 15\text{A}$	-	-	2.7	V
1N3772			$I_C = 10\text{A}$	-	-	2.7	V
DC Current Gain 1N3771	h_{FE}	$V_{CE} = 4\text{V}, \text{Note 1}$	$I_C = 15\text{A}$	15	-	60	
1N3772			$I_C = 30\text{A}$	5	-	-	
			$I_C = 10\text{A}$	15	-	60	
			$I_C = 20\text{A}$	5	-	-	
Small Signal Current Gain	h_{FE}	$I_C = 1\text{A}, V_{CE} = 4\text{V}, f = 1\text{kHz}$		40	-	-	
Transition Frequency	f_T	$I_C = 1\text{A}, V_{CE} = 4\text{V}, f = 50\text{kHz}$		0.2	-	-	MHz
Second Breakdown Collector Current	$I_{s/b}$	$V_{CE} = 25\text{V}, t = 1\text{s (non-repetitive)}$		6	-	-	A

Note 1. Pulse Test: Pulse Width = 300 μs . Duty Cycle $\leq 2\%$.

