ELECTRONICS, INC.
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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}
- 2N3771 . . . . . 40V
- 2N3772 . . . . . 60V

Collector–Emitter Voltage (V_{BE} = –1.5V), V_{CEV}
- 2N3771 . . . . . 50V
- 2N3772 . . . . . 80V

Collector–Base Voltage (I_B = 0), V_{CBO}
- 2N3771 . . . . . 50V
- 2N3772 . . . . . 100V

Emitter–Base Voltage (I_C = 0), V_{EBO}
- 2N3771 . . . . . 5V
- 2N3772 . . . . . 7V

Collector Current, I_C
- 2N3771 . . . . . 30A
- 2N3772 . . . . . 20A

Peak Collector Current, I_{CM} 30A

Base Current, I_B
- 2N3771 . . . . . 7.5A
- 2N3772 . . . . . 5A

Peak Base Current, I_{BM} 15A

Total Device Dissipation ($T_C \le +25°C$), P_D 150W

Operating Junction Temperature Range, T_J . . . . . –65° to +200°C

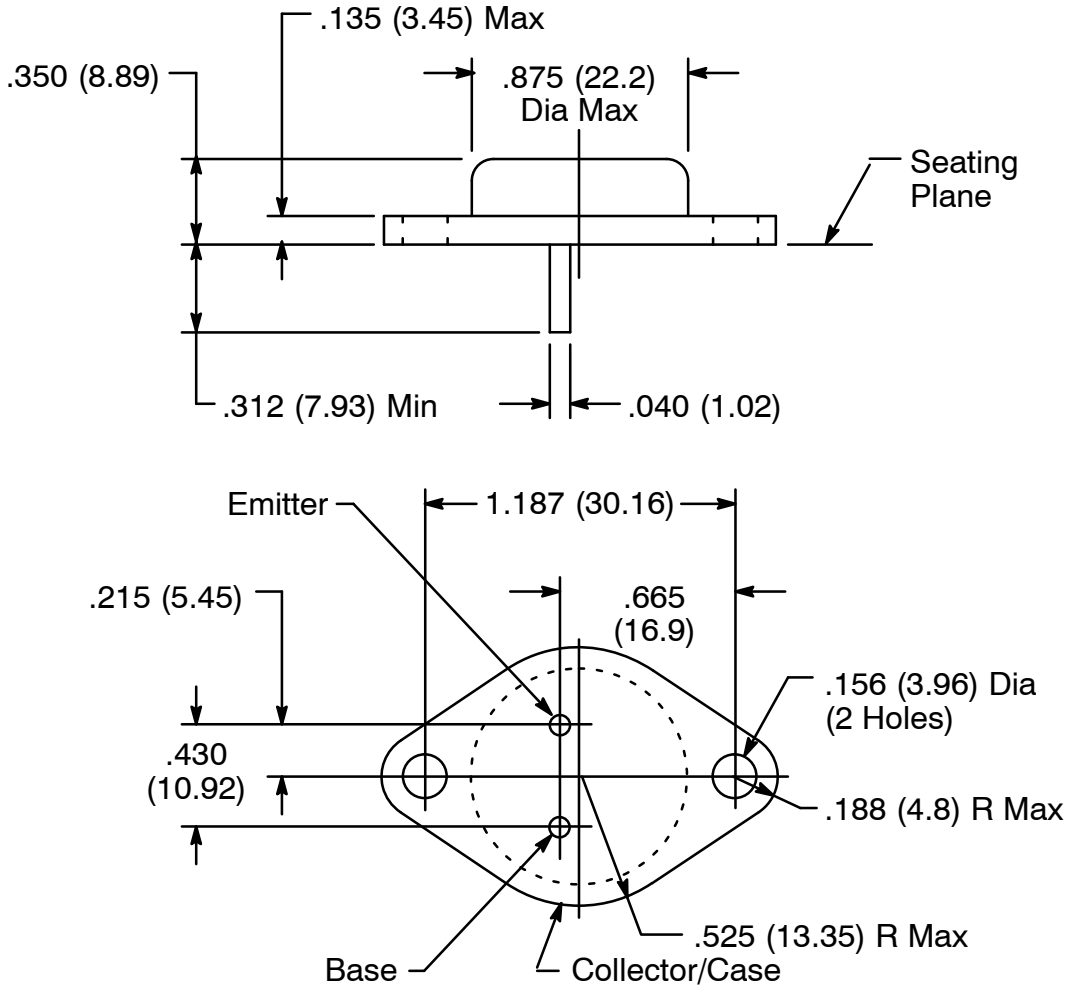
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C

Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1.17°C/W

Electrical Characteristics: (T_C =+25°C unless otherwise specified)

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

Note 1. Pulse Test: Pulse Width = 300μs. Duty Cycle ≤ 2%.


.135 (3.45) Max
.350 (8.89)
.875 (22.2)
Dia Max
Seating
Plane
.312 (7.93) Min
.040 (1.02)
Emitter
1.187 (30.16)
.215 (5.45)
.665
(16.9)
.156 (3.96) Dia
(2 Holes)
.430
(10.92)
.188 (4.8) R Max
.525 (13.35) R Max
Base
Collector/Case

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