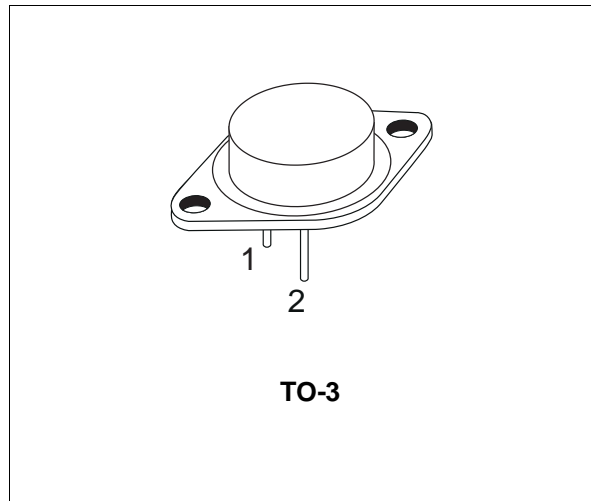


## HIGH POWER NPN SILICON TRANSISTOR

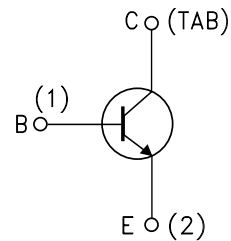
- STMicroelectronics PREFERRED SALESTYPES

### DESCRIPTION

The 2N3771, 2N3772 are silicon epitaxial-base NPN transistors mounted in Jedec TO-3 metal case. They are intended for linear amplifiers and inductive switching applications.



### INTERNAL SCHEMATIC DIAGRAM



SC08820

### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		2N3771	2N3772	
$V_{CEO}$	Collector-Emitter Voltage ( $I_E = 0$ )	40	60	V
$V_{CEV}$	Collector-Emitter Voltage ( $V_{BE} = -1.5V$ )	50	80	V
$V_{CBO}$	Collector-Base Voltage ( $I_B = 0$ )	50	100	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	5	7	V
$I_C$	Collector Current	30	20	A
$I_{CM}$	Collector Peak Current	30	30	A
$I_B$	Base Current	7.5	5	A
$I_{BM}$	Base Peak Current	15	15	A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ C$	150		W
$T_{stg}$	Storage Temperature	-65 to 200		$^\circ C$

## 2N3771/2N3772

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	1.17	°C/W
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### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CEV</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	for <b>2N3771</b> V <sub>CB</sub> = 50 V for <b>2N3772</b> V <sub>CB</sub> = 100 V for all V <sub>CB</sub> = 30 V T <sub>j</sub> = 150 °C			2 5 10	mA mA mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	for <b>2N3771</b> V <sub>CB</sub> = 30 V for <b>2N3772</b> V <sub>CB</sub> = 50 V			10 10	mA mA
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	for <b>2N3771</b> V <sub>CB</sub> = 50 V for <b>2N3772</b> V <sub>CB</sub> = 100 V			4 5	mA mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	for <b>2N3771</b> V <sub>CB</sub> = 5 V for <b>2N3772</b> V <sub>CB</sub> = 7 V			5 5	mA mA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 0.2 A for <b>2N3771</b> for <b>2N3772</b>	40 60			V V
V <sub>CEV(sus)*</sub>	Collector-Emitter Sustaining Voltage (V <sub>EB</sub> = -1.5V)	I <sub>C</sub> = 0.2 A R <sub>BE</sub> = 100 Ω for <b>2N3771</b> for <b>2N3772</b>	50 80			V V
V <sub>CER(sus)*</sub>	Collector-Emitter Sustaining Voltage (R <sub>BE</sub> = 100 Ω)	I <sub>C</sub> = 0.2 A for <b>2N3771</b> for <b>2N3772</b>	45 70			V V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	for <b>2N3771</b> I <sub>C</sub> = 15 A I <sub>B</sub> = 1.5 A I <sub>C</sub> = 30 A I <sub>B</sub> = 6 A for <b>2N3772</b> I <sub>C</sub> = 10 A I <sub>B</sub> = 1 A I <sub>C</sub> = 20 A I <sub>B</sub> = 4 A			2 4 1.4 4	V V V V
V <sub>BE*</sub>	Base-Emitter Voltage	for <b>2N3771</b> I <sub>C</sub> = 15 A V <sub>CE</sub> = 4 V for <b>2N3772</b> I <sub>C</sub> = 10 A V <sub>CE</sub> = 4 A			2.7 2.7	V V
h <sub>FE*</sub>	DC Current Gain	for <b>2N3771</b> I <sub>C</sub> = 15 A V <sub>CE</sub> = 4 V I <sub>C</sub> = 30 A V <sub>CE</sub> = 4 V for <b>2N3772</b> I <sub>C</sub> = 10 A V <sub>CE</sub> = 4 V I <sub>C</sub> = 20 A V <sub>CE</sub> = 4 V	15 5 15 5		60 60	
h <sub>FE</sub>	Small Signal Current Gain	I <sub>C</sub> = 1 A V <sub>CE</sub> = 4 V f = 1 KHz	40			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> = 1 A V <sub>CE</sub> = 4 V f = 50 KHz	0.2			MHz
I <sub>s/b</sub>	Second Breakdown Collector Current	V <sub>CE</sub> = 25 V t = 1 s (non repetitive)	6			A

\* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %

## TO-3 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193

