

# New Jersey Semi-Conductor Products, Inc.

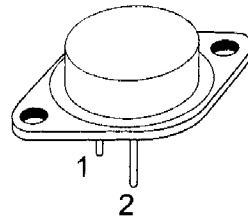
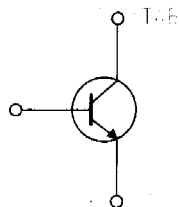
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## DESCRIPTION

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



TO-3

## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		2N3771	2N3772	
$V_{CE0}$	Collector-Emitter Voltage ( $I_E = 0$ )	40	60	V
$V_{CEV}$	Collector-Emitter Voltage ( $V_{BE} = -1.5V$ )	50	80	V
$V_{CB0}$	Collector-Base Voltage ( $I_B = 0$ )	50	100	V
$V_{EB0}$	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		$^\circ C$



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

## THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.17	$^{\circ}\text{C}/\text{W}$
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## ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

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

\* Pulsed: Pulse duration = 300  $\mu\text{s}$ , duty cycle  $\leq 2\%$

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

