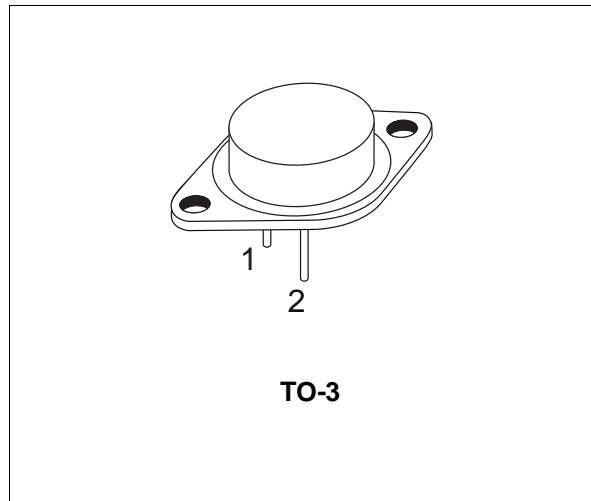


HIGH POWER NPN SILICON TRANSISTOR

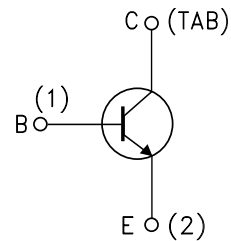
- STMicroelectronics PREFERRED SALESTYPES

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



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 _{thj-case}	Thermal Resistance Junction-case	Max	1.17	°C/W
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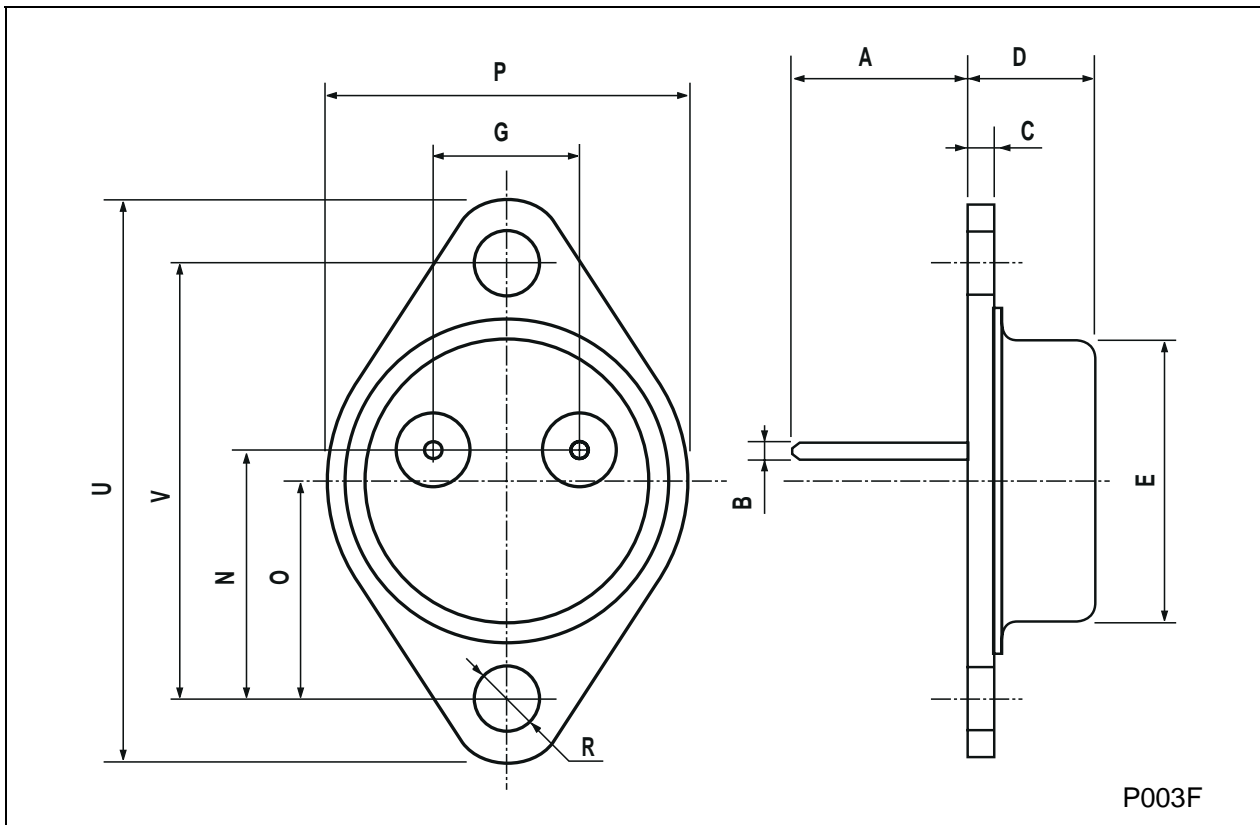
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEV}	Collector Cut-off Current (V _{BE} = -1.5V)	for 2N3771 V _{CB} = 50 V for 2N3772 V _{CB} = 100 V for all V _{CB} = 30 V T _j = 150 °C			2 5 10	mA mA mA
I _{CEO}	Collector Cut-off Current (I _B = 0)	for 2N3771 V _{CB} = 30 V for 2N3772 V _{CB} = 50 V			10 10	mA mA
I _{CB0}	Collector Cut-off Current (I _E = 0)	for 2N3771 V _{CB} = 50 V for 2N3772 V _{CB} = 100 V			4 5	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	for 2N3771 V _{CB} = 5 V for 2N3772 V _{CB} = 7 V			5 5	mA mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 0.2 A for 2N3771 for 2N3772	40 60			V V
V _{CEV(sus)*}	Collector-Emitter Sustaining Voltage (V _{EB} = -1.5V)	I _C = 0.2 A R _{BE} = 100 Ω for 2N3771 for 2N3772	50 80			V V
V _{CER(sus)*}	Collector-Emitter Sustaining Voltage (R _{BE} = 100 Ω)	I _C = 0.2 A for 2N3771 for 2N3772	45 70			V V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	for 2N3771 I _C = 15 A I _B = 1.5 A I _C = 30 A I _B = 6 A for 2N3772 I _C = 10 A I _B = 1 A I _C = 20 A I _B = 4 A			2 4 1.4 4	V V V V
V _{BE*}	Base-Emitter Voltage	for 2N3771 I _C = 15 A V _{CE} = 4 V for 2N3772 I _C = 10 A V _{CE} = 4 V			2.7 2.7	V V
h _{FE*}	DC Current Gain	for 2N3771 I _C = 15 A V _{CE} = 4 V I _C = 30 A V _{CE} = 4 V for 2N3772 I _C = 10 A V _{CE} = 4 V I _C = 20 A V _{CE} = 4 V	15 5 15 5		60 60	
h _{FE}	Small Signal Current Gain	I _C = 1 A V _{CE} = 4 V f = 1 KHz	40			
f _T	Transition frequency	I _C = 1 A V _{CE} = 4 V f = 50 KHz	0.2			MHz
I _{s/b}	Second Breakdown Collector Current	V _{CE} = 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



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