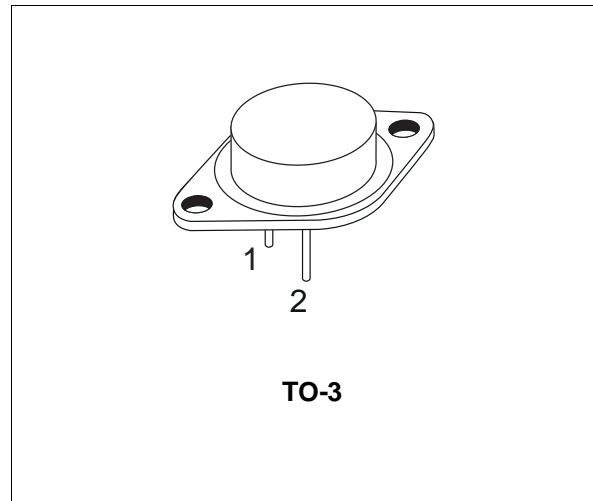


HIGH POWER NPN SILICON TRANSISTOR

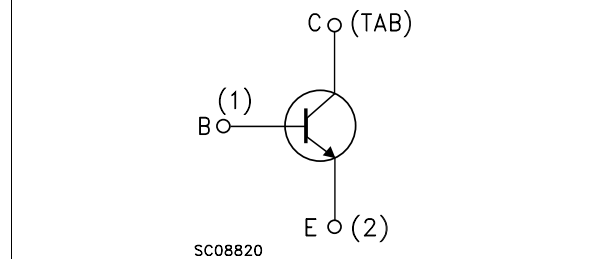
■ SGS-THOMSON PREFERRED SALESTYPES

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		$^\circ C$
T_j	Max. Operating Junction Temperature	200		$^\circ C$

2N3771/2N3772

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.17	°C/W
-----------------------	----------------------------------	-----	------	------

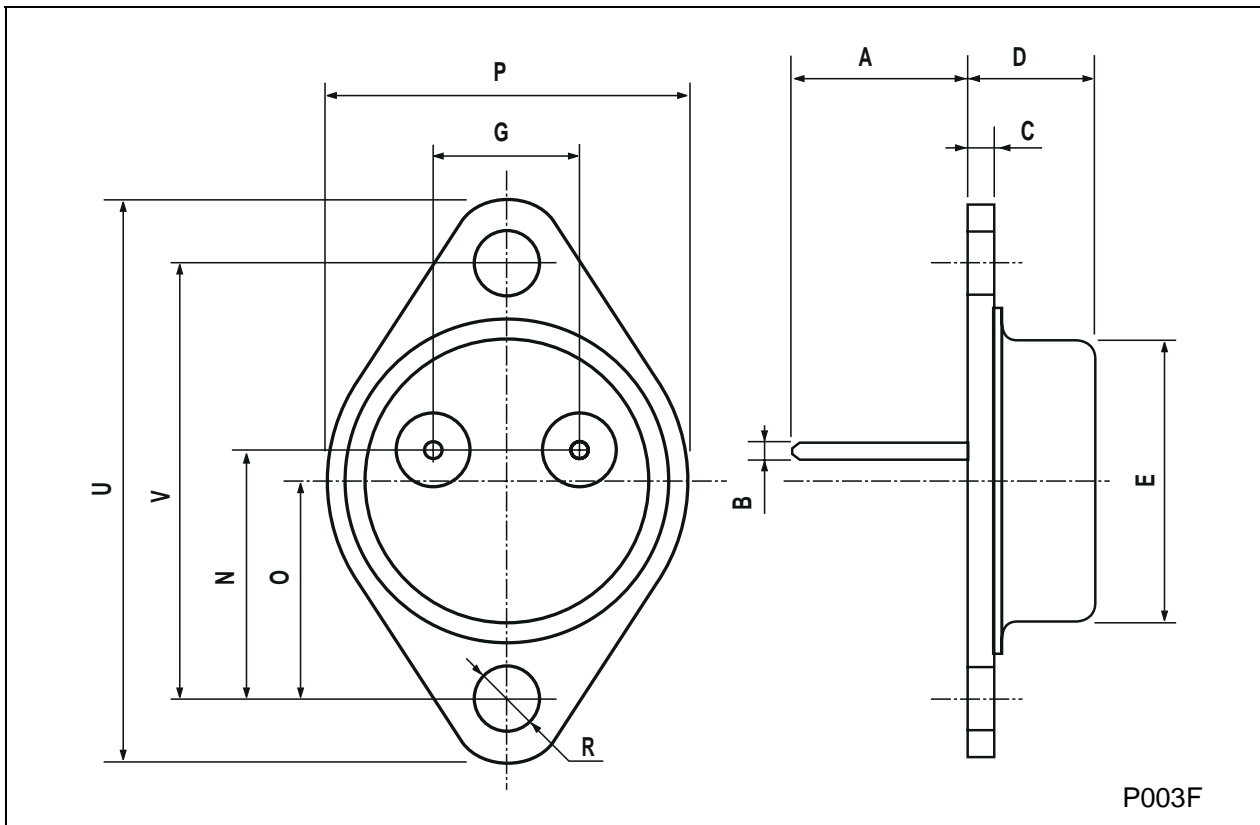
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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 _{CBO}	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



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A
...