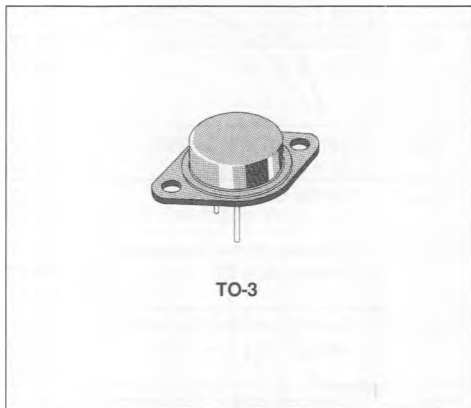


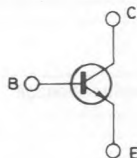
HIGH POWER TRANSISTORS

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	2N3771	2N3772	Unit
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	40	60	V
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	50	80	V
V_{CBO}	Collector-base Voltage ($I_E = 0$)	50	100	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5	7	V
I_C	Collector Current	15	10	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 Power Dissipation at $T_{case} \leq 25^\circ C$	150		W
T_{stg}	Storage Temperature	- 65 to 200		$^\circ C$
T_j	Junction Temperature	200		$^\circ C$

THERMAL DATA

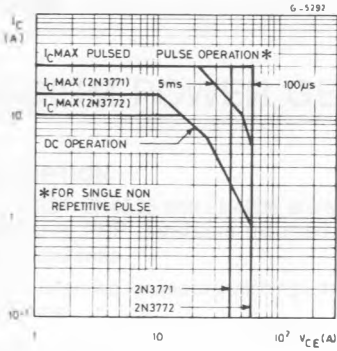
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	1.17	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

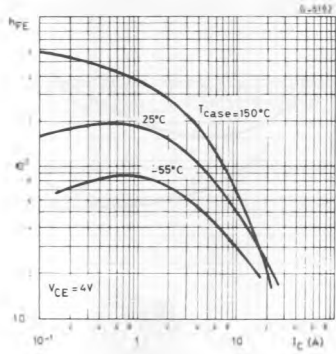
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	for 2N3771 $V_{CE} = 30V$ for 2N3772 $V_{CE} = 50V$			10 10	mA mA
I_{CEV}	Collector Cutoff Current ($V_{BE} = -1.5V$)	for 2N3771 $V_{CE} = 50V$ for 2N3772 $V_{CE} = 100V$ for all $V_{CE} = 30V$ $T_{case}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

* Pulsed : pulse duration = 300 μ s, duty cycle < 2%.

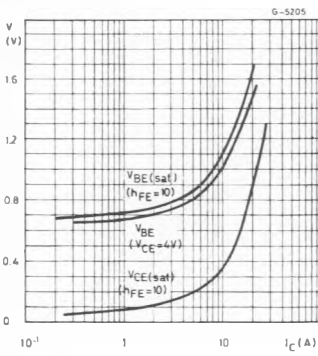
Safe Operating Areas



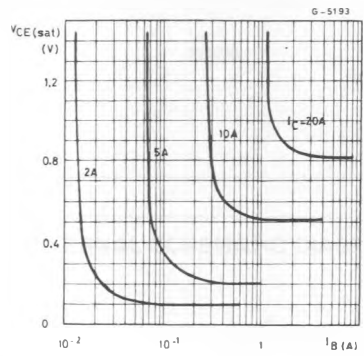
DC Current Gain.



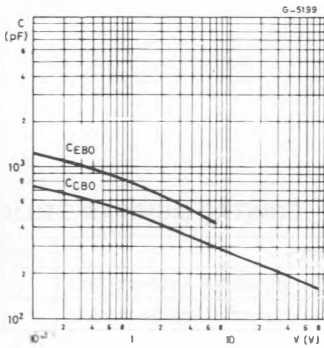
Saturation Voltage.



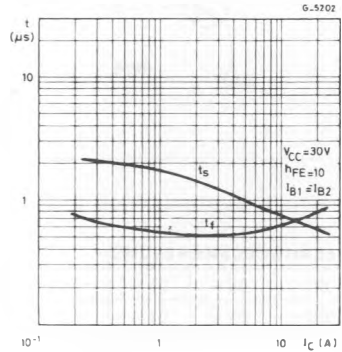
Collector-emitter Saturation Vol-



Capacitances.



Turn-off Time.



Turn-on Time.

