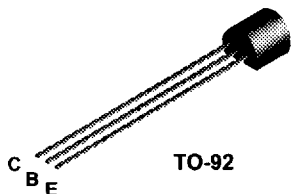
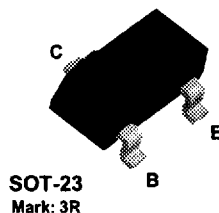


2N5771

TO-92

MMBT5771SOT-23
Mark: 3R

PNP Switching Transistor

This device is designed for very high speed saturate switching at collector currents to 100 mA. Sourced from Process 65. See PN4258 for characteristics.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	15	V
V _{CBO}	Collector-Base Voltage	15	V
V _{EBO}	Emitter-Base Voltage	4.5	V
I _C	Collector Current - Continuous	200	mA
T _J , T _{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max		Units
		2N5771	*MMBT5771	
P _D	Total Device Dissipation Derate above 25°C	350 2.8	225 1.8	mW mW/°C
R _{RJC}	Thermal Resistance, Junction to Case	125		°C/W
R _{RJA}	Thermal Resistance, Junction to Ambient	357	556	°C/W

* Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

PNP Switching Transistor

(continued)

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage*	I _C = 3.0 mA, I _B = 0	15		V
V _{(BR)CES}	Collector-Emitter Breakdown Voltage	I _C = 100 μA, V _{BE} = 0	15		V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 100 μA, I _E = 0	15		V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 100 μA, I _C = 0	4.5		V
I _{CBO}	Collector Cutoff Current	V _{CB} = 8.0 V, I _E = 0		10	nA
I _{CES}	Collector Cutoff Current	V _{CE} = 8.0 V, V _{BE} = 0		10	nA
		V _{CE} = 8.0 V, V _{BE} = 0, T _A = 125°C		5.0	μA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 4.5 V, I _C = 0		1.0	μA

ON CHARACTERISTICS*

h _{FE}	DC Current Gain	I _C = 1.0 mA, V _{CE} = 0.5 V I _C = 10 mA, V _{CE} = 0.3 V I _C = 10 mA, V _{CE} = 0.3 V, T _A = -55°C I _C = 50 mA, V _{CE} = 1.0 V	35 50 20 40	120	
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 1.0 mA, I _B = 0.1 mA I _C = 10 mA, I _B = 1.0 mA I _C = 50 mA, I _B = 5.0 mA		0.15 0.18 0.6	V V V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 1.0 mA, I _B = 0.1 mA I _C = 10 mA, I _B = 1.0 mA I _C = 50 mA, I _B = 5.0 mA	0.75	0.8 0.95 1.5	V V V

SMALL SIGNAL CHARACTERISTICS

C _{cb}	Collector-Base Capacitance	V _{CB} = 5.0 V, I _E = 0, f = 140 kHz		3.0	pF
C _{eb}	Emitter-Base Capacitance	V _{BE} = 0.5 V, I _C = 0, f = 140 kHz		3.5	pF
h _{fe}	Small-Signal Current Gain	I _C = 10 mA, V _{CE} = 10 V, f = 100 MHz	8.5		MHz

SWITCHING CHARACTERISTICS

t _s	Storage Time	I _C = 10 mA, V _{CC} = 1.5 V, I _{B1} = I _{B2} = 1.0 mA		20	ns
t _{on}	Turn-On Time	I _C = 10 mA, V _{CC} = 1.5 V, I _B = 1.0 mA		15	ns
t _{off}	Turn-Off Time	I _C = 10 mA, V _{CC} = 1.5 V, I _{B1} = I _{B2} = 1.0 mA		20	ns

*Pulse Test: Pulse Width < 300 μs, Duty Cycle ≤ 2.0%

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