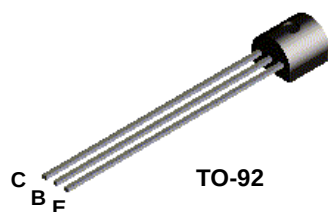
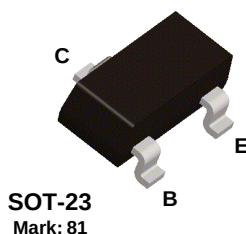


PN4355



MMBT4355



PNP General Purpose Amplifier

This device is designed for use as a general purpose amplifier and switch requiring collector currents to 500 mA. Sourced from Process 67. See TN4033A for characteristics.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	60	V
V _{CBO}	Collector-Base Voltage	60	V
V _{EBO}	Emitter-Base Voltage	10	V
I _C	Collector Current - Continuous	800	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
		PN4355	*MMBT4355	
P _D	Total Device Dissipation Derate above 25°C	625	350	mW
		5.0	2.8	mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	83.3		°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	200	357	°C/W

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

PNP General Purpose Amplifier

(continued)

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Sustaining Voltage*	$I_C = 1.0 \text{ mA}, I_B = 0$	60		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \text{ } \mu\text{A}, I_E = 0$	60		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \text{ } \mu\text{A}, I_C = 0$	5.0		V
I_{CBO}	Collector-Cutoff Current	$V_{CB} = 50 \text{ V}, I_E = 0$		50	nA
I_{EBO}	Emitter-Cutoff Current	$V_{EB} = 5.0 \text{ V}, V_{CE} = 0$ $V_{EB} = 4.0 \text{ V}, I_C = 0$		10 100	μA nA

ON CHARACTERISTICS

h_{FE}	DC Current Gain	$I_C = 100 \text{ } \mu\text{A}, V_{CE} = 10 \text{ V}$ $I_C = 1.0 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 100 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 500 \text{ mA}, V_{CE} = 10 \text{ V}$	60 75 100 75 75	400	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$ $I_C = 1.0 \text{ A}, I_B = 100 \text{ mA}$		0.15 0.50 1.0	V V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$ $I_C = 1.0 \text{ A}, I_B = 100 \text{ mA}$		0.9 1.1 1.2	V V V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 500 \text{ mA}, V_{CE} = 0.5 \text{ V}$ $I_C = 1.0 \text{ A}, V_{CE} = 1.0 \text{ V}$		1.1 1.2	V V

SMALL SIGNAL CHARACTERISTICS

C_{obo}	Output Capacitance	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$		30	pF
C_{ibo}	Input Capacitance	$V_{EB} = 0.5 \text{ V}, I_C = 0, f = 1.0 \text{ MHz}$		110	pF
h_{fe}	Small-Signal Current Gain	$I_C = 50 \text{ mA}, V_{CE} = 10 \text{ V},$ $f = 100 \text{ MHz}$	1.0	5.0	
NF	Noise Figure	$I_C = 100 \text{ } \mu\text{A}, V_{CE} = 10 \text{ V},$ $R_S = 1.0 \text{ k}\Omega, f = 1.0 \text{ kHz},$ $BW = 1.0 \text{ Hz}$	1.0	3.0	dB

SWITCHING CHARACTERISTICS

t_{on}	Turn-On Time	$I_C = 500 \text{ mA}, V_{CC} = 500 \text{ mA}$		100	ns
t_{off}	Turn-Off Time	$I_{B1} = I_{B2} = 50 \text{ mA}$		400	ns

*Pulse Test: Pulse Width $\leq 300 \text{ } \mu\text{s}$, Duty Cycle $\leq 1.0\%$