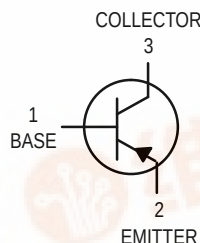


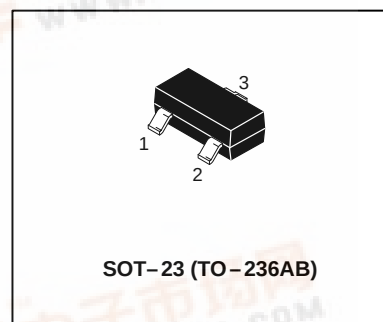


PNP Silicon



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	–150	Vdc
Collector–Base Voltage	V_{CBO}	–160	Vdc
Emitter–Base Voltage	V_{EBO}	–5.0	Vdc
Collector Current — Continuous	I_C	–500	mAdc



SOT-23 (TO-236AB)

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D		mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$		$^\circ\text{C/W}$
Junction and Storage Temperature	T_J, T_{stg}	–55 to +150	$^\circ\text{C}$

DEVICE MARKING

MBT5401LT1 = 2L

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Breakdown Voltage ($I_C = -1.0\text{ mAdc}$, $I_E = 0$)	$V_{(BR)CEO}$	–150	—	Vdc
Collector–Base Breakdown Voltage ($I_C = -100\text{ }\mu\text{Adc}$, $I_E = 0$)	$V_{(BR)CBO}$	–160	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = -10\text{ }\mu\text{Adc}$, $I_C = 0$)	$V_{(BR)EBO}$	–5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = -120\text{ Vdc}$, $I_E = 0$) ($V_{CB} = -120\text{ Vdc}$, $I_E = 0$, $T_A = 100^\circ\text{C}$)	I	— —	–50 –50	nAdc μAdc



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Max	Unit
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ON CHARACTERISTICS

DC Current Gain ($I_C = -1.0\text{ mA}$, $V_{CE} = -5.0\text{ Vdc}$) ($I_C = -10\text{ mA}$, $V_{CE} = -5.0\text{ Vdc}$) ($I_C = -50\text{ mA}$, $V_{CE} = -5.0\text{ Vdc}$)	h_{FE}		— 240 —	—
Collector–Emitter Saturation Voltage ($I_C = -10\text{ mA}$, $I_B = -1.0\text{ mA}$) ($I_C = -50\text{ mA}$, $I_B = -5.0\text{ mA}$)	$V_{CE(sat)}$	— —	—0.2 —0.5	Vdc
Base–Emitter Saturation Voltage ($I_C = -10\text{ mA}$, $I_B = -1.0\text{ mA}$) ($I_C = -50\text{ mA}$, $I_B = -5.0\text{ mA}$)	$V_{BE(sat)}$	— —	—1.0 —1.0	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ($I_C = -10\text{ mA}$, $V_{CE} = -10\text{ Vdc}$, $f = 100\text{ MHz}$)	f_T	100	300	MHz
Output Capacitance ($V_{CB} = -10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{obo}	—	6.0	pF
Small Signal Current Gain ($I_C = -1.0\text{ mA}$, $V_{CE} = -10\text{ Vdc}$, $f = 1.0\text{ kHz}$)	h_{fe}	40	200	—
Noise Figure ($I_C = -200\text{ }\mu\text{A}$, $V_{CE} = -5.0\text{ Vdc}$, $R_S = 10\text{ }\Omega$, $f = 1.0\text{ kHz}$)	NF	—	8.0	dB