WMBT5401LT1

PNP Silicon Transistor

COLLECTOR
3

1
BASE

2
EMITTER

SOT−23 (TO−236AB)
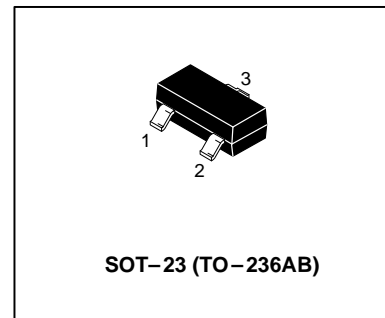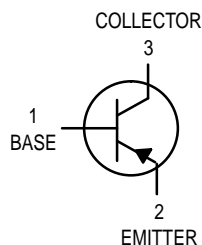
MAXIMUM RATINGS

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

THERMAL CHARACTERISTICS

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

DEVICE MARKING

WMBT5401LT1 = 2L

ELECTRICAL CHARACTERISTICS ($T_A = 25°C$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector−Emitter Breakdown Voltage ($I_C = -1.0$ mAdc, $I_B = 0$)	$V_{(BR)CEO}$	−150	—	Vdc
Collector−Base Breakdown Voltage ($I_C = -100$ μAdc, $I_E = 0$)	$V_{(BR)CBO}$	−160	—	Vdc
Emitter−Base Breakdown Voltage ($I_E = -10$ μAdc, $I_C = 0$)	$V_{(BR)EBO}$	−5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = -120$ Vdc, $I_E = 0$)	I_{CB0}	—	−50	nAdc
($V_{CB} = -120$ Vdc, $I_E = 0$, $T_A = 100°C$)		—	−50	μAdc

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain (I_C = −1.0 mAdc, V_{CE} = −5.0 Vdc) (I_C = −10 mAdc, V_{CE} = −5.0 Vdc) (I_C = −50 mAdc, V_{CE} = −5.0 Vdc)	h_{FE}	 80 80 80	— 240 —	—
Collector−Emitter Saturation Voltage (I_C = −10 mAdc, I_B = −1.0 mAdc) (I_C = −50 mAdc, I_B = −5.0 mAdc)	$V_{CE(sat)}$	 — —	 −0.2 −0.5	Vdc
Base−Emitter Saturation Voltage (I_C = −10 mAdc, I_B = −1.0 mAdc) (I_C = −50 mAdc, I_B = −5.0 mAdc)	$V_{BE(sat)}$	 — —	 −1.0 −1.0	Vdc
SMALL−SIGNAL CHARACTERISTICS				
Current−Gain — Bandwidth Product (I_C = −10 mAdc, V_{CE} = −10 Vdc, f = 100 MHz)	f_T	100	300	MHz
Output Capacitance (V_{CB} = −10 Vdc, I_E = 0, f = 1.0 MHz)	C_{obo}	—	6.0	pF
Small Signal Current Gain (I_C = −1.0 mAdc, V_{CE} = −10 Vdc, f = 1.0 kHz)	h_{fe}	40	200	—
Noise Figure (I_C = −200 µAdc, V_{CE} = −5.0 Vdc, R_S = 10 Ω, f = 1.0 kHz)	NF	—	8.0	dB