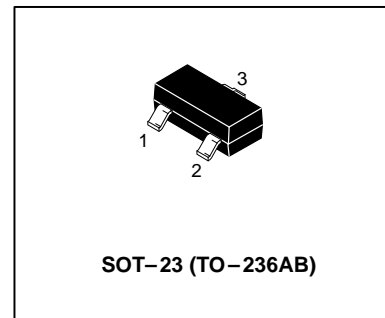
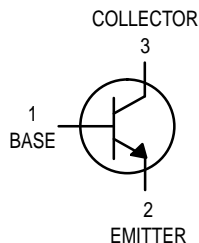




# WMBT5551LT1

## NPN Silicon Transistor



### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	$V_{CEO}$	160	Vdc
Collector–Base Voltage	$V_{CBO}$	180	Vdc
Emitter–Base Voltage	$V_{EBO}$	6.0	Vdc
Collector Current — Continuous	$I_C$	600	mAdc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR–5 Board <sup>(1)</sup> $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, <sup>(2)</sup> $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$		mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$		$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	–55 to +150	$^\circ\text{C}$

### DEVICE MARKING

MMBT5550LT1 = M1F; MMBT5551LT1 = G1

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

Characteristic	Symbol	Min	Max	Unit
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### OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage <sup>(3)</sup> ( $I_C = 1.0 \text{ mAdc}, I_B = 0$ )	$V_{(BR)CEO}$	160	—	Vdc
Collector–Base Breakdown Voltage ( $I_C = 100 \mu\text{Adc}, I_E = 0$ )	$V_{(BR)CBO}$	180	—	Vdc
Emitter–Base Breakdown Voltage ( $I_E = 10 \mu\text{Adc}, I_C = 0$ )	$V_{(BR)EBO}$	6.0	—	Vdc
Collector Cutoff Current  ( $V_{CB} = 120 \text{ Vdc}, I_E = 0$ )  ( $V_{CB} = 120 \text{ Vdc}, I_E = 0, T_A = 100^\circ\text{C}$ )	$I_{CBO}$	— — —	50 50	nAdc $\mu\text{Adc}$
Emitter Cutoff Current ( $V_{EB} = 5.0 \text{ Vdc}, I_C = 0$ )	$I_{EBO}$	—	50	nAdc

# WMBT5551LT1

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

Characteristic	Symbol	Min	Max	Unit
<b>ON CHARACTERISTICS</b>				
DC Current Gain ( $I_C = 1.0\text{ mAdc}$ , $V_{CE} = 5.0\text{ Vdc}$ )	$h_{FE}$	80	—	—
( $I_C = 10\text{ mAdc}$ , $V_{CE} = 5.0\text{ Vdc}$ )		80	250	—
( $I_C = 50\text{ mAdc}$ , $V_{CE} = 5.0\text{ Vdc}$ )		80	—	—
Collector–Emitter Saturation Voltage ( $I_C = 10\text{ mAdc}$ , $I_B = 1.0\text{ mAdc}$ )	$V_{CE(sat)}$	—	0.15	Vdc
( $I_C = 50\text{ mAdc}$ , $I_B = 5.0\text{ mAdc}$ )		—	0.20	
Base–Emitter Saturation Voltage ( $I_C = 10\text{ mAdc}$ , $I_B = 1.0\text{ mAdc}$ )	$V_{BE(sat)}$	—	1.0	Vdc
( $I_C = 50\text{ mAdc}$ , $I_B = 5.0\text{ mAdc}$ )		—	1.0	