

Driver Transistors

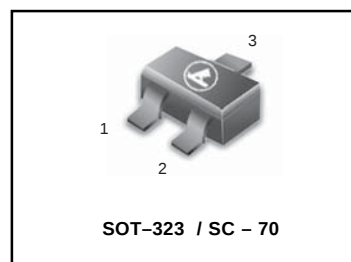
FEATURES

- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

LMBTA05WT1G
LMBTA06WT1G
S-LMBTA05WT1G
S-LMBTA06WT1G

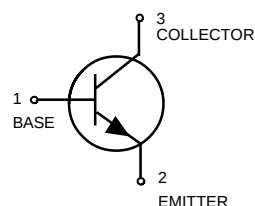
MAXIMUM RATINGS

Rating	Symbol	Value		Unit
		LMBTA05	LMBTA06	
Collector-Emitter Voltage	V_{CEO}	60	80	Vdc
Collector-Base Voltage	V_{CBO}	60	80	Vdc
Emitter-Base Voltage	V_{EBO}	4.0		Vdc
Collector Current — Continuous	I_C	500		mAdc



THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A = 25^\circ\text{C}$	P_D	150	mW
Derate above 25°C		1.2	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	833	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$	P_D	200	mW
Derate above 25°C		1.6	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$



DEVICE MARKING

(S-)LMBTA05WT1G = 1H, (S-)LMBTA06WT1G = 1GM;

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(3) ($I_C = 1.0 \text{ mAdc}, I_B = 0$)	$V_{(BR)CEO}$			Vdc
LMBTA05		60	—	
LMBTA06		80	—	
Emitter-Base Breakdown Voltage ($I_E = 100 \mu\text{Adc}, I_C = 0$)	$V_{(BR)EBO}$	4.0	—	Vdc
Collector Cutoff Current ($V_{CE} = 60\text{Vdc}, I_B = 0$)	I_{CES}	—	0.1	μAdc
Emitter Cutoff Current ($V_{CB} = 60\text{Vdc}, I_E = 0$)	I_{CBO}	—	0.1	μAdc
($V_{CB} = 80\text{Vdc}, I_E = 0$)		—	0.1	

1. FR-5 = $1.0 \times 0.75 \times 0.062 \text{ in.}$

2. Alumina = $0.4 \times 0.3 \times 0.024 \text{ in.}$ 99.5% alumina.

3. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

LMBTA05WT1G LMBTA06WT1G
S-LMBTA05WT1G S-LMBTA06WT1G

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 ($I_C = 10\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$) ($I_C = 100\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$)	h_{FE}	100 100	— —	—
Collector–Emitter Saturation Voltage ($I_C = 100\text{ mAdc}$, $I_B = 10\text{ mAdc}$)	$V_{CE(sat)}$	—	0.25	Vdc
Base–Emitter On Voltage ($I_C = 100\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$)	$V_{BE(sat)}$	—	1.2	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current –Gain – Bandwidth Product(4) ($V_{CE} = 2.0\text{ V}$, $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$)	f_T	100	—	MHz
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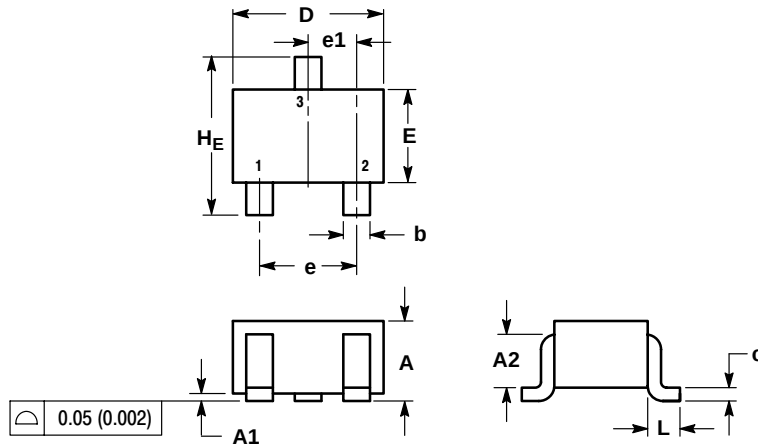
4. f_T is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.

ORDERING INFORMATION

Device	Marking	Shipping
(S-)LMBTA05WT1G	1H	3000/Tape & Reel
(S-)LMBTA06WT1G	1GM	3000/Tape & Reel
(S-)LMBTA05WT3G	1H	10000/Tape & Reel
(S-)LMBTA06WT3G	1GM	10000/Tape & Reel

LMBTA05WT1G LMBTA06WT1G
S-LMBTA05WT1G S-LMBTA06WT1G

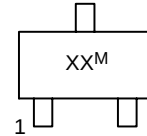
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NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.7 REF			0.028 REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.425 REF			0.017 REF		
HE	2.00	2.10	2.40	0.079	0.083	0.095

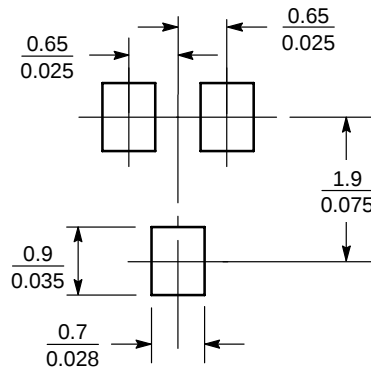
GENERIC MARKING DIAGRAM



XX = Specific Device Code
 M = Date Code
 ■ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "■", may or may not be present.

SOLDERING FOOTPRINT*



SCALE 10:1 (mm/inches)