Driver Transistors

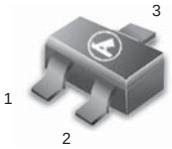
LMBTA05WT1G
LMBTA06WT1G
S-LMBTA05WT1G
S-LMBTA06WT1G

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.

MAXIMUM RATINGS

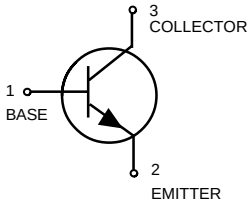
Rating	Symbol	Value LMBTA05	Value LMBTA06	Unit
Collector–Emitter Voltage	V_{CEO}	60	80	Vdc
Collector–Base Voltage	V_{CBO}	60	80	Vdc
Emitter–Base Voltage	V_{EBO}	4.0		Vdc
Collector Current — Continuous	I_C	500		mAdc



SOT–323 / SC – 70

THERMAL CHARACTERISTICS

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



DEVICE MARKING

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

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage(3)		$V_{(BR)CEO}$			Vdc
(I_C = 1.0 mAdc, I_B = 0)	LMBTA05		60	—	
	LMBTA06		80	—	
Emitter–Base Breakdown Voltage		$V_{(BR)EBO}$	4.0	—	Vdc
(I_E = 100 µAdc, I_C = 0)					
Collector Cutoff Current		I_{CES}	—	0.1	µAdc
(V_{CE} = 60Vdc, I_B = 0)					
Emitter Cutoff Current		I_{CBO}			µAdc
(V_{CB} = 60Vdc, I_E = 0)	LMBTA05		—	0.1	
(V_{CB} = 80Vdc, I_E = 0)	LMBTA06		—	0.1	

1. FR–5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.
3. Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%.

LMBTA05WT1G LMBTA06WT1G
S-LMBTA05WT1G S-LMBTA06WT1G

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

Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain	h_{FE}			—
(I_C = 10 mAdc, V_{CE} = 1.0 Vdc)		100	—	
(I_C = 100 mAdc, V_{CE} = 1.0 Vdc)		100	—	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$			Vdc
(I_C = 100 mAdc, I_B = 10 mAdc)		—	0.25	
Base–Emitter On Voltage	$V_{BE(sat)}$			Vdc
(I_C = 100 mAdc, V_{CE}= 1.0 Vdc)		—	1.2	
SMALL–SIGNAL CHARACTERISTICS				
Current –Gain – Bandwidth Product(4) (V_{CE} = 2.0 V, I_C = 10mA, f = 100 MHz)	f_T	100	—	MHz

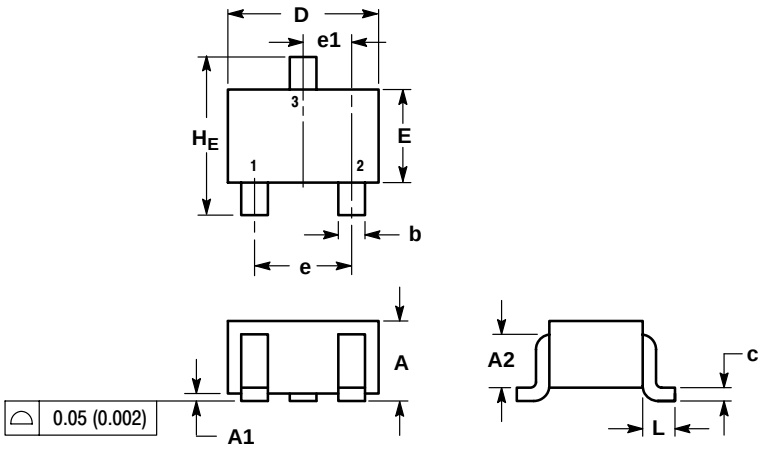
4. f_T is defined as the frequency at which $|h f_e|$ extrapolates to unity.

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

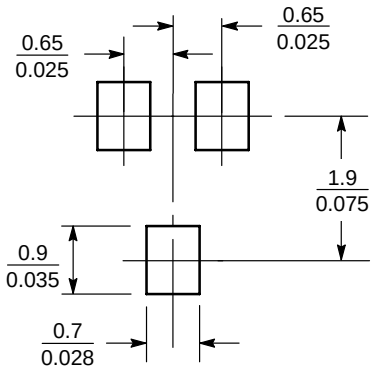
SC−70



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

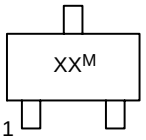
	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2		0.7 REF			0.028 REF	
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40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

SOLDERING FOOTPRINT*



SCALE 10:1 (mm / inches)

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.