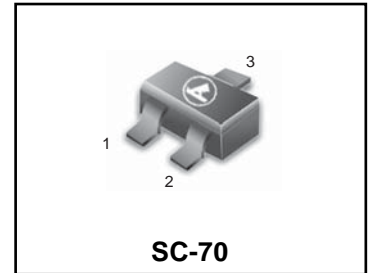# General Purpose Transistors

● We declare that the material of product compliance with RoHS requirements.

LBC817-25WT1G
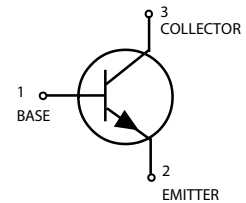
SC-70

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	45	V
Collector–Base Voltage	V_{CBO}	50	V
Emitter–Base Voltage	V_{EBO}	5.0	V
Collector Current — Continuous	I_C	500	mAdc

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}	−55to+150	°C

3 COLLECTOR

1 BASE

2 EMITTER

DEVICE MARKING

LBC817–25W T1G = 6B

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

Characteristic	Symbol	Min	Typ	Max	Unit

OFF CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage (I_C = 10 mA)	$V_{(BR)CEO}$	45	—	—	V
Collector–Emitter Breakdown Voltage (V_{EB} = 0, I_C = 10 μA)	$V_{(BR)CES}$	50	—	—	V
Emitter–Base Breakdown Voltage (I_E = 1.0 μA)	$V_{(BR)EBO}$	5.0	—	—	V
Collector Cutoff Current	I_{CBO}				
(V_{CB} = 20 V)		—	—	100	nA
(V_{CB} = 20 V, T_A = 150°C)		—	—	5.0	μA

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.

LBC817-25WT1G

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

Characteristic	Symbol	Min	Typ	Max	Unit

ON CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
DC Current Gain (I_C= 100 mA, V_{CE} = 1.0 V)	h_{FE}	160	—	400	
Collector–Emitter Saturation Voltage (I_C = 500 mA, I_B = 50 mA)	$V_{CE(sat)}$	—	—	0.7	V
Base–Emitter On Voltage (I_C = 500 mA, V_{CE} = 1.0 V)	$V_{BE(on)}$	—	—	1.2	V

SMALL–SIGNAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Current–Gain — Bandwidth Product (I_C = 10 mA, V_{CE} = 5.0 V_{dc}, f = 100 MHz)	f_T	100	—	—	MHz
Output Capacitance (V_{CB} = 10 V, f = 1.0 MHz)	C_{obo}	—	10	—	pF

ORDERING INFORMATION

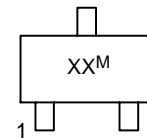| Device	Marking	Shipping
LBC817-25WT1G	6B	3000/Tape&Reel
LBC817-25WT3G	6B	10000/Tape&Reel

LBC817-25WT1G

SC–70 (SOT–323)

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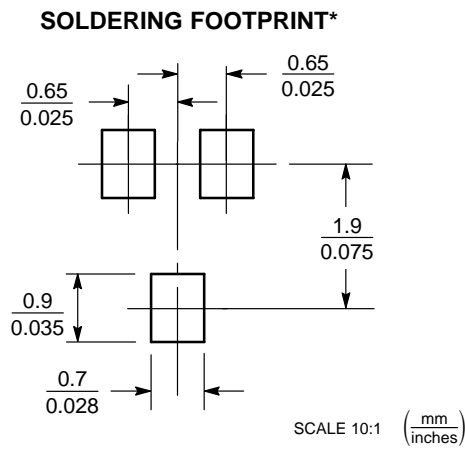2. CONTROLLING DIMENSION: INCH.

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		
H_E	2.00	2.10	2.40	0.079	0.083	0.095

0.05 (0.002)

SOLDERING FOOTPRINT*

$\frac{0.65}{0.025}$ $\frac{0.65}{0.025}$ $\frac{1.9}{0.075}$ $\frac{0.9}{0.035}$ $\frac{0.7}{0.028}$

SCALE 10:1 $\left(\frac{mm}{inches}\right)$

GENERIC MARKING DIAGRAM

XX^M

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.

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