

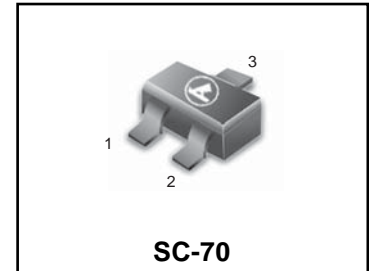
# General Purpose Transistors

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

**LBC817-25WT1G**

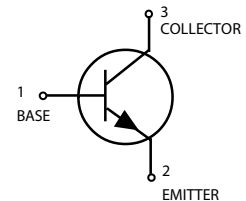
## MAXIMUM RATINGS

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



## DEVICE MARKING

LBC817-25WT1G = 6B

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

Characteristic	Symbol	Min	Typ	Max	Unit
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## OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ( $I_C = 10\text{ mA}$ )	$V_{(BR)CEO}$	45	—	—	V
Collector–Emitter Breakdown Voltage ( $V_{EB} = 0, I_C = 10\ \mu\text{A}$ )	$V_{(BR)CES}$	50	—	—	V
Emitter–Base Breakdown Voltage ( $I_E = 1.0\ \mu\text{A}$ )	$V_{(BR)EBO}$	5.0	—	—	V
Collector Cutoff Current ( $V_{CB} = 20\text{ V}$ )	$I_{CBO}$	—	—	100	nA
( $V_{CB} = 20\text{ V}, T_A = 150^\circ\text{C}$ )		—	—	5.0	$\mu\text{A}$

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<sub>A</sub> = 25°C unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
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### ON CHARACTERISTICS

DC Current Gain (I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 1.0 V)	h <sub>FE</sub>	160	—	400	
Collector–Emitter Saturation Voltage (I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA)	V <sub>CE(sat)</sub>	—	—	0.7	V
Base–Emitter On Voltage (I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 1.0 V)	V <sub>BE(on)</sub>	—	—	1.2	V

### SMALL–SIGNAL CHARACTERISTICS

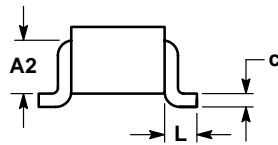
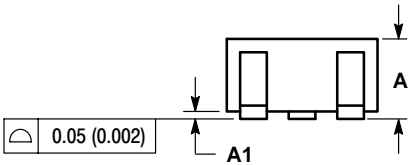
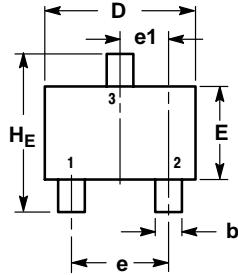
Current–Gain — Bandwidth Product (I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 5.0 V <sub>dc</sub> , f = 100 MHz)	f <sub>T</sub>	100	—	—	MHz
Output Capacitance (V <sub>CB</sub> = 10 V, f = 1.0 MHz)	C <sub>obo</sub>	—	10	—	pF

### ORDERING INFORMATION

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

# LBC817-25WT1G

SC-70 (SOT-323)

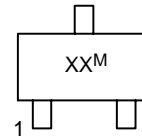


NOTES:  
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
 2. CONTROLLING DIMENSION: INCH.

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		
HE	2.00	2.10	2.40	0.079	0.083	0.095

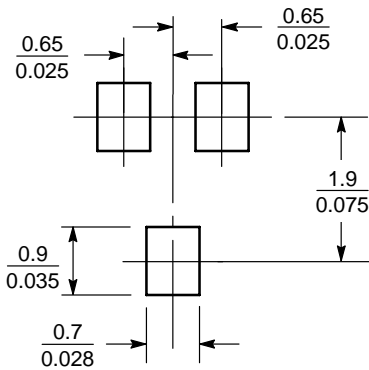
0.05 (0.002)

### GENERIC MARKING DIAGRAM



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

### SOLDERING FOOTPRINT\*



SCALE 10:1 (mm/inches)

\*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.