

# General Purpose Transistors

## PNP Silicon

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

### ORDERING INFORMATION

Device	Marking	Shipping
LBCW68GLT1G	DG	3000/Tape&Reel
LBCW68GLT3G	DG	10000/Tape&Reel

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	$V_{CEO}$	- 45	Vdc
Collector–Base Voltage	$V_{CBO}$	- 60	Vdc
Emitter–Base Voltage	$V_{EBO}$	- 5.0	Vdc
Collector Current — Continuous	$I_C$	- 800	mAdc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR- 5 Board, (1) $T_A = 25^\circ\text{C}$	$P_D$	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$	$P_D$	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit
----------------	--------	-----	-----	-----	------

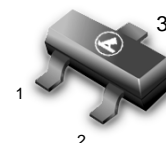
### OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ( $I_C = -10 \text{ mAdc}, I_B = 0$ )	$V_{(BR)CEO}$	- 45	—	—	Vdc
Collector–Emitter Breakdown Voltage ( $I_C = -10 \mu\text{Adc}, V_{EB} = 0$ )	$V_{(BR)CES}$	- 60	—	—	Vdc
Emitter–Base Breakdown Voltage ( $I_E = -10 \mu\text{Adc}, I_C = 0$ )	$V_{(BR)EBO}$	- 5.0	—	—	Vdc
Collector Cutoff Current ( $V_{CE} = -45 \text{ Vdc}, I_E = 0$ )	$I_{CES}$	—	—	- 20	nAdc
( $V_{CE} = -45 \text{ Vdc}, I_B = 0, T_A = 150^\circ\text{C}$ )		—	—	- 10	$\mu\text{Adc}$
Emitter Cutoff Current ( $V_{EB} = -4.0 \text{ Vdc}, I_C = 0$ )	$I_{EBO}$	—	—	- 20	nAdc

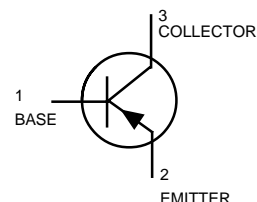
1. FR- 5 = 1.0 x 0.75 x 0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

## LBCW68GLT1G



CASE 318-08, STYLE 6  
SOT-23 (TO-236AB)



**LBCW68GLT1G**
**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
----------------	--------	-----	-----	-----	------

**DC CHARACTERISTICS**

DC Current Gain ( $I_C = -10\text{ mAdc}$ , $V_{CE} = -1.0\text{ Vdc}$ ) ( $I_C = -100\text{ mAdc}$ , $V_{CE} = -1.0\text{ Vdc}$ ) ( $I_C = -300\text{ mAdc}$ , $V_{CE} = -1.0\text{ Vdc}$ )	$h_{FE}$	120 160 60	— — —	400 — —	—
Collector–Emitter Saturation Voltage ( $I_C = -300\text{ mAdc}$ , $I_B = -30\text{ mAdc}$ )	$V_{CE(sat)}$	—	—	-1.5	Vdc
Base–Emitter Saturation Voltage ( $I_C = -500\text{ mAdc}$ , $I_B = -50\text{ mAdc}$ )	$V_{BE(sat)}$	—	—	-2.0	Vdc

**SMALL-SIGNAL CHARACTERISTICS**

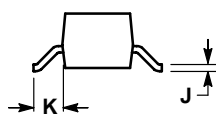
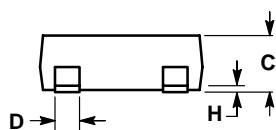
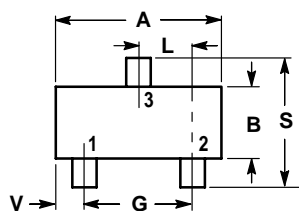
Current–Gain — Bandwidth Product ( $I_C = -20\text{ mAdc}$ , $V_{CE} = -10\text{ Vdc}$ , $f = 100\text{ MHz}$ )	$f_T$	100	—	—	MHz
Output Capacitance ( $V_{CB} = -10\text{ Vdc}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$ )	$C_{obo}$	—	—	18	pF
Input Capacitance ( $V_{EB} = -0.5\text{ Vdc}$ , $I_C = 0$ , $f = 1.0\text{ MHz}$ )	$C_{ibo}$	—	—	105	pF
Noise Figure ( $V_{CE} = -5.0\text{ Vdc}$ , $I_C = -0.2\text{ mAdc}$ , $R_S = 1.0\text{ k}\Omega$ , $f = 1.0\text{ kHz}$ , $BW = 200\text{ Hz}$ )	NF	—	—	10	dB

LBCW68GLT1G

SOT-23

NOTES:

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



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

