BC818-40LT1G

General Purpose Transistors

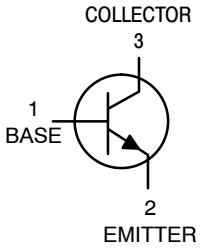
NPN Silicon

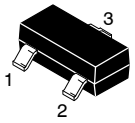
ON Semiconductor®

http://onsemi.com

Features

- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant





SOT−23
CASE 318
STYLE 6

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector−Emitter Voltage	V_{CEO}	25	V
Collector−Base Voltage	V_{CBO}	30	V
Emitter−Base Voltage	V_{EBO}	5.0	V
Collector Current − Continuous	I_C	500	mAdc

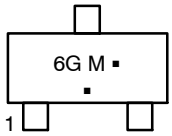
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR−5 Board, (Note 1) T_A = 25°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (Note 2) T_A = 25°C Derate above 25°C	P_D	300 2.4	mW 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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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.

MARKING DIAGRAMS



6G = Specific Device Code
M = Date Code*
▪ = Pb−Free Package
(Note: Microdot may be in either location)
*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
BC818−40LT1G	SOT−23 (Pb−Free)	3000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector − Emitter Breakdown Voltage (I_C = −10 mA)	$V_{(BR)CEO}$	25	−	−	V
Collector − Emitter Breakdown Voltage (V_{EB} = 0, I_C = −10 μA)	$V_{(BR)CES}$	30	−	−	V
Emitter − Base Breakdown Voltage (I_E = −1.0 μA)	$V_{(BR)EBO}$	5.0	−	−	V
Collector Cutoff Current (V_{CB} = 20 V) (V_{CB} = 20 V, T_A = 150°C)	I_{CBO}	− −	− −	100 5.0	nA μA
ON CHARACTERISTICS					
DC Current Gain (I_C = 100 mA, V_{CE} = 1.0 V) (I_C = 500 mA, V_{CE} = 1.0 V)	h_{FE}	250 40	− −	600 −	−
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					
Current − Gain − Bandwidth Product (I_C = 10 mA, V_{CE} = 5.0 Vdc, f = 100 MHz)	f_T	100	−	−	MHz
Output Capacitance (V_{CB} = 10 V, f = 1.0 MHz)	C_{obo}	−	10	−	pF

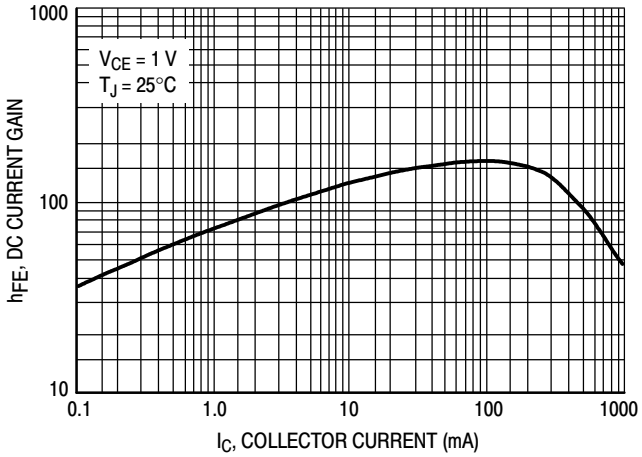


Figure 1. DC Current Gain

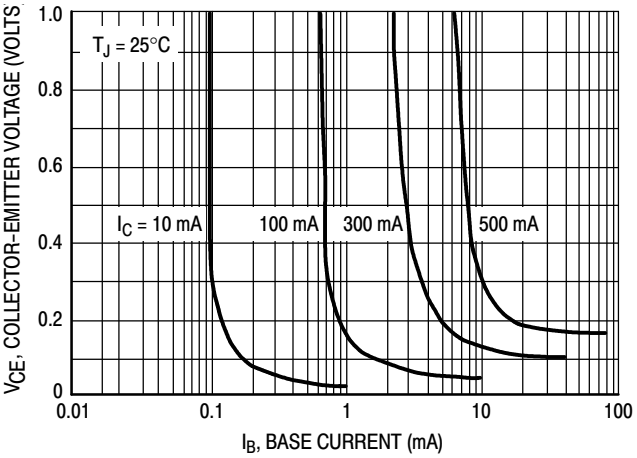


Figure 2. Saturation Region

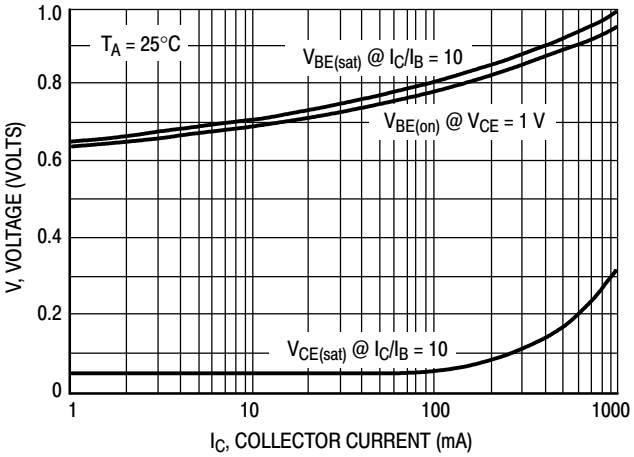


Figure 3. “On” Voltages

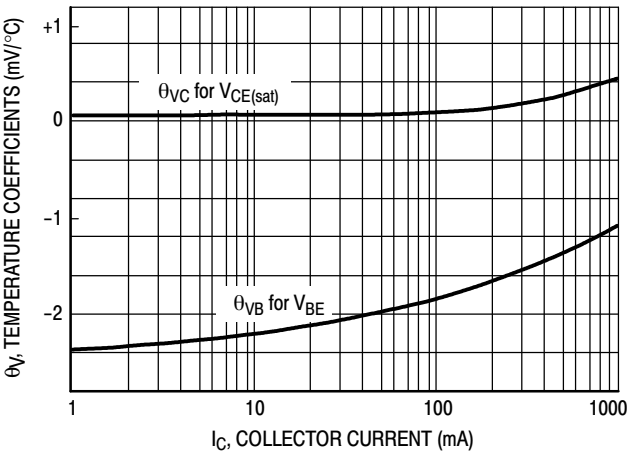


Figure 4. Temperature Coefficients

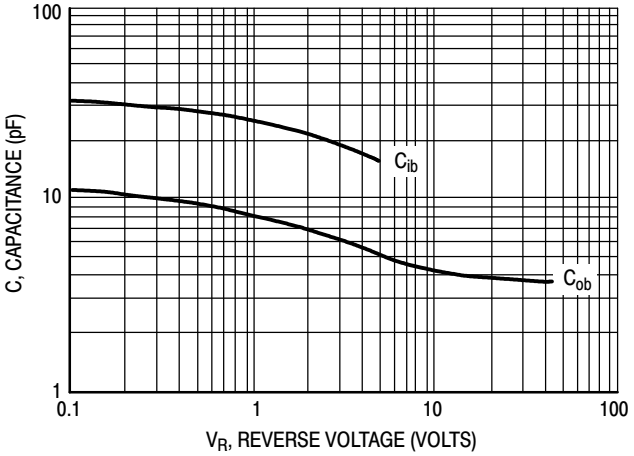
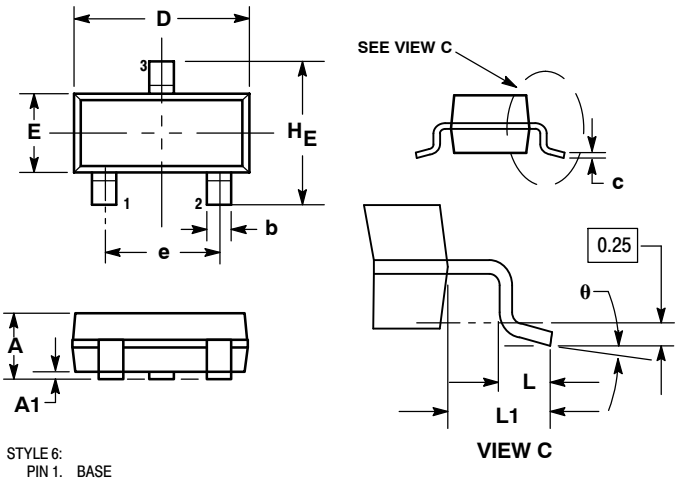


Figure 5. Capacitances

PACKAGE DIMENSIONS

SOT−23 (TO−236)
CASE 318−08
ISSUE AN

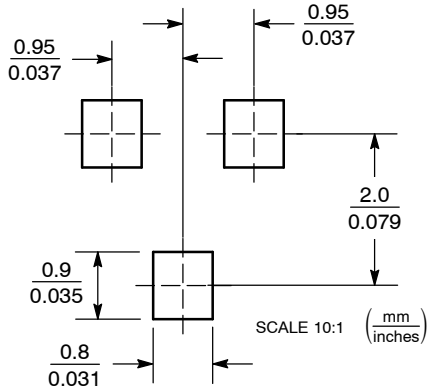


STYLE 6:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318−01 THRU −07 AND −09 OBSOLETE, NEW STANDARD 318−08.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.40	2.64	0.083	0.094	0.104

SOLDERING FOOTPRINT*



*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
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