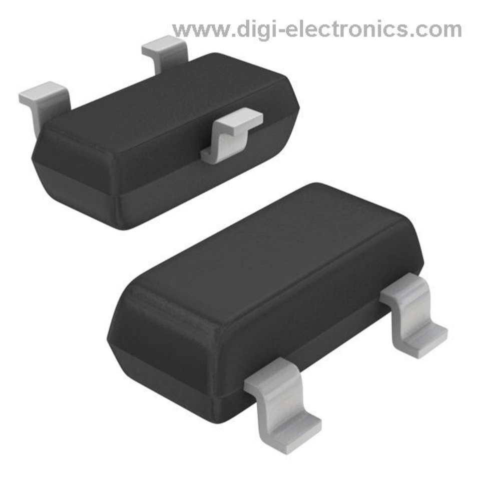
BC817-40LT3 Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	BC817-40LT3-DG
Manufacturer	onsemi
Manufacturer Product Number	BC817-40LT3
Description	TRANS NPN 45V 0.5A SOT23-3
Detailed Description	Bipolar (BJT) Transistor NPN 45 V 500 mA 100MHz 300 mW Surface Mount SOT-23-3 (TO-236)

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
BC817-40LT3	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN	500 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
45 V	700mV @ 50mA, 500mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA (ICBO)	250 @ 100mA, 1V
Power - Max:	Frequency - Transition:
300 mW	100MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-236-3, SC-59, SOT-23-3	SOT-23-3 (TO-236)
Base Product Number:	
BC817	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
RoHS non-compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

BC817-16LT1, BC817-25LT1, BC817-40LT1

General Purpose Transistors

NPN Silicon

Features

- Pb−Free Packages are Available

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

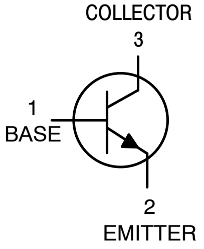
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR− 5 Board, (Note 1) T_A = 25°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (Note 2) T_A = 25°C Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal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

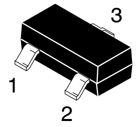
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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.

ON Semiconductor®

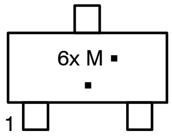
http://onsemi.com





SOT−23
CASE 318
STYLE 6

MARKING DIAGRAM



6x = Device Code
x = A, B, or C
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

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

March, 2009 − Rev. 9

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)	$V_{(BR)CEO}$	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
ON CHARACTERISTICS					
DC Current Gain	h_{FE}				–
(I_C = 100 mA, V_{CE} = 1.0 V) BC817−16		100	–	250	
BC817−25		160	–	400	
BC817−40		250	–	600	
(I_C = 500 mA, V_{CE} = 1.0 V)		40	–	–	
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

ORDERING INFORMATION

Device	Specific Marking	Package	Shipping†
BC817−16LT1G	6A	SOT−23 (Pb−Free)	3000/Tape & Reel
BC817−16LT3G		SOT−23 (Pb−Free)	10,000/Tape & Reel
BC817−25LT1	6B	SOT−23	3000/Tape & Reel
BC817−25LT1G		SOT−23 (Pb−Free)	3000/Tape & Reel
BC817−25LT3G		SOT−23 (Pb−Free)	10,000/Tape & Reel
BC817−40LT1	6C	SOT−23	3000/Tape & Reel
BC817−40LT1G		SOT−23 (Pb−Free)	3000/Tape & Reel
BC817−40LT3G		SOT−23 (Pb−Free)	10,000/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.

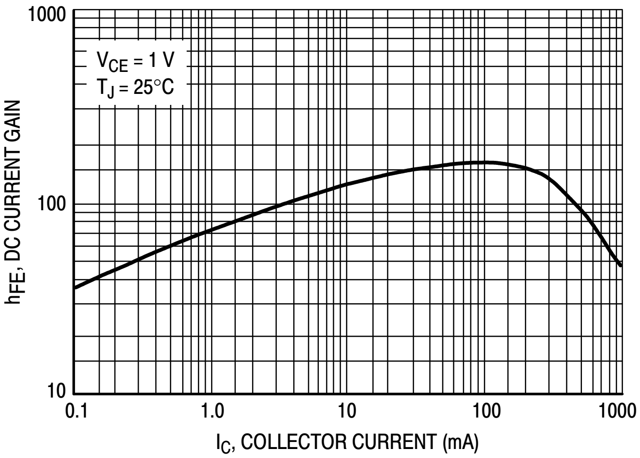


Figure 1. DC Current Gain

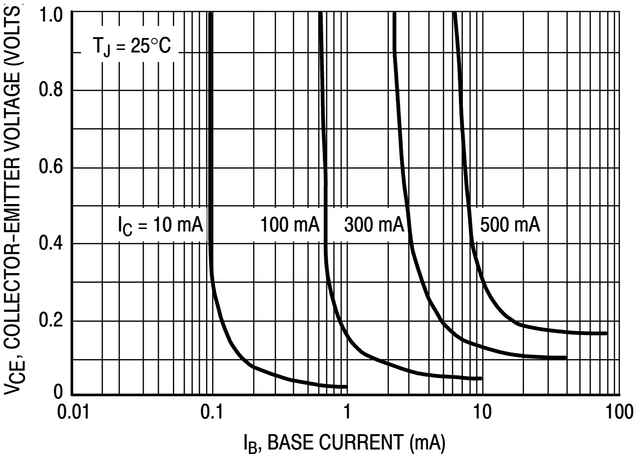


Figure 2. Saturation Region

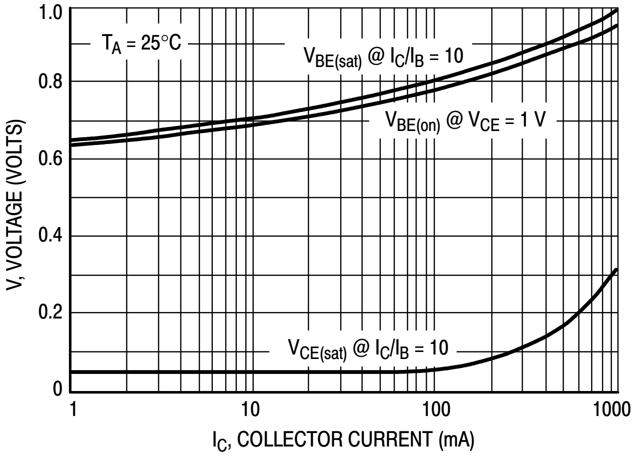


Figure 3. “On” Voltages

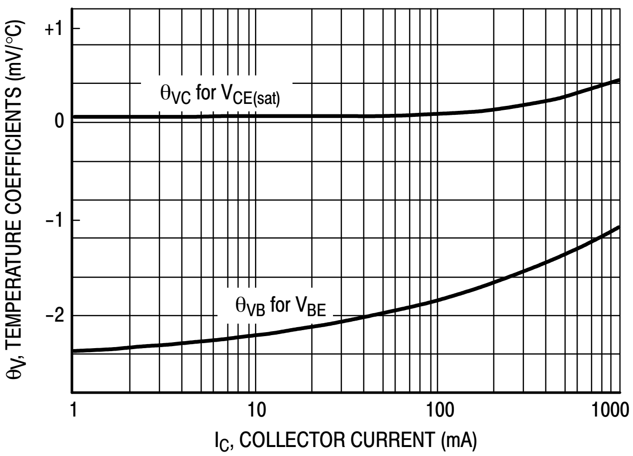


Figure 4. Temperature Coefficients

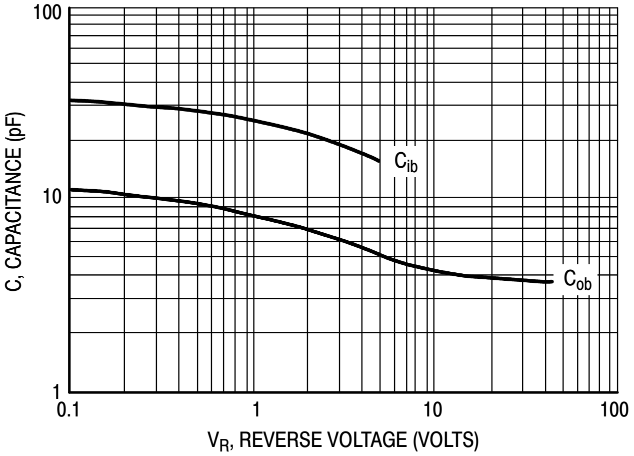


Figure 5. Capacitances

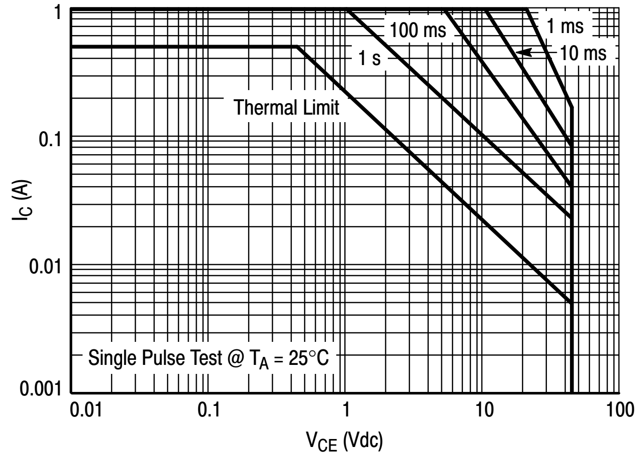
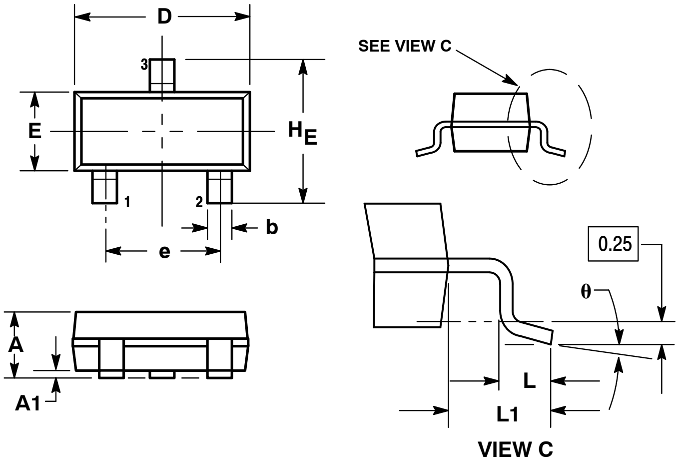


Figure 6. BC817−40L Safe Operating Area

PACKAGE DIMENSIONS

SOT−23 (TO−236)
CASE 318−08
ISSUE AN

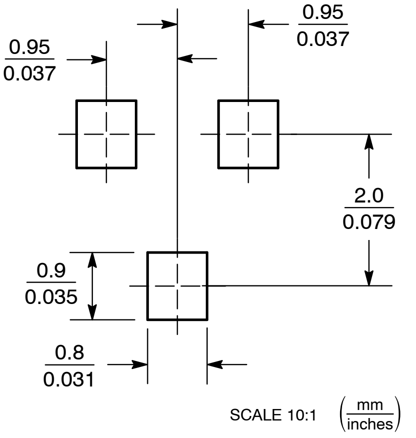


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318−01 THRU −07 AND −09 OBSOLETE, NEW STANDARD 318−08.

	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

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

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.

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Email: orderlit@onsemi.com

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Phone: 81−3−5773−3850

ON Semiconductor Website: **www.onsemi.com**

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we stricíy control the quality of products and services. Welcome your RFQ to Email: Info@DiGi-Electronics.com

DCI.

QUALITY MANAGEMENT SYSTEM CERTIFICATE

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GB/T 19001-2016 idt ISO9001:2015

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OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM CERTIFICATE

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DCI Certification Ltd

CR

CERTIFICATE OF INCORPORATION

ASA

MEMBERSHIP

Certificate

DIGI ELECTRONICS HK LIMITED

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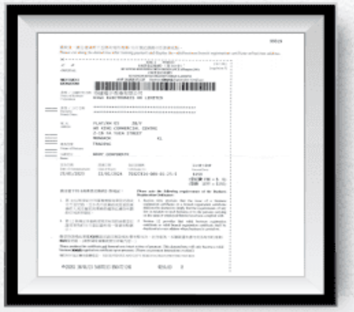
A Dun & Bradstreet

D-U-N-S® Registered™ Business



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