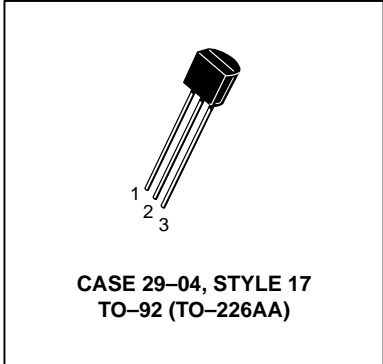
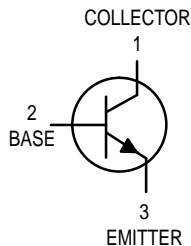


Amplifier Transistors

NPN Silicon

BC182,A,B
BC183
BC184



MAXIMUM RATINGS

Rating	Symbol	BC 182	BC 183	BC 184	Unit
Collector–Emitter Voltage	V_{CEO}	50	30	30	Vdc
Collector–Base Voltage	V_{CBO}	60	45	45	Vdc
Emitter–Base Voltage	V_{EBO}	6.0			Vdc
Collector Current — Continuous	I_C	100			mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350			mW
		2.8			mW/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0			Watts
		8.0			mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150			°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	125	°C/W

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

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

OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ($I_C = 2.0\text{ mA}, I_B = 0$)	BC182 BC183 BC184	$V_{(BR)CEO}$	50 30 30	— — —	— — —	V
Collector–Base Breakdown Voltage ($I_C = 10\text{ }\mu\text{A}, I_E = 0$)	BC182 BC183 BC184	$V_{(BR)CBO}$	60 45 45	— — —	— — —	V
Emitter–Base Breakdown Voltage ($I_E = 100\text{ }\mu\text{A}, I_C = 0$)		$V_{(BR)EBO}$	6.0	—	—	V
Collector Cutoff Current ($V_{CB} = 50\text{ V}, V_{BE} = 0$) ($V_{CB} = 30\text{ V}, V_{BE} = 0$)	BC182 BC183 BC184	I_{CBO}	— — —	0.2 0.2 0.2	15 15 15	nA
Emitter–Base Leakage Current ($V_{EB} = 4.0\text{ V}, I_C = 0$)		I_{EBO}	—	—	15	nA

BC182,A,B BC183 BC184
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS					
DC Current Gain ($I_C = 10\ \mu\text{A}$, $V_{CE} = 5.0\ \text{V}$) ($I_C = 2.0\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$) ($I_C = 100\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$)	BC182	40	—	—	—
	BC183	40	—	—	—
	BC184	100	—	—	—
	BC182	120	—	500	—
	BC183	120	—	800	—
	BC184	250	—	800	—
	BC182	80	—	—	—
	BC183	80	—	—	—
	BC184	130	—	—	—
Collector–Emitter On Voltage ($I_C = 10\ \text{mA}$, $I_B = 0.5\ \text{mA}$) ($I_C = 100\ \text{mA}$, $I_B = 5.0\ \text{mA}$)(1)	$V_{CE(sat)}$	—	0.07 0.2	0.25 0.6	V
Base–Emitter Saturation Voltage ($I_C = 100\ \text{mA}$, $I_B = 5.0\ \text{mA}$)(1)	$V_{BE(sat)}$	—	—	1.2	V
Base–Emitter On Voltage ($I_C = 100\ \mu\text{A}$, $V_{CE} = 5.0\ \text{V}$) ($I_C = 2.0\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$) ($I_C = 100\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$)(1)	$V_{BE(on)}$	— 0.55 —	0.5 0.62 0.83	— 0.7 —	V
DYNAMIC CHARACTERISTICS					
Current–Gain — Bandwidth Product ($I_C = 0.5\ \text{mA}$, $V_{CE} = 3.0\ \text{V}$, $f = 100\ \text{MHz}$) ($I_C = 10\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$, $f = 100\ \text{MHz}$)	BC182	—	100	—	MHz
	BC183	—	120	—	
	BC184	—	140	—	
	BC182	150	200	—	
	BC183	150	240	—	
	BC184	150	280	—	
Common Base Output Capacitance ($V_{CB} = 10\ \text{V}$, $I_C = 0$, $f = 1.0\ \text{MHz}$)	C_{ob}	—	—	5.0	pF
Common Base Input Capacitance ($V_{EB} = 0.5\ \text{V}$, $I_C = 0$, $f = 1.0\ \text{MHz}$)	C_{ib}	—	8.0	—	pF
Small–Signal Current Gain ($I_C = 2.0\ \text{mA}$, $V_{CE} = 5.0\ \text{V}$, $f = 1.0\ \text{kHz}$)	BC182	125	—	500	—
	BC183	125	—	900	
	BC184	240	—	900	
	BC182A	125	—	260	
	BC182B	240	—	500	
	BC184	—	2.0	4.0	
BC182	—	2.0	10		
BC183	—	2.0	10		
BC184	—	2.0	4.0		

 1. Pulse Test: T_p 300 s, Duty Cycle 2.0%.

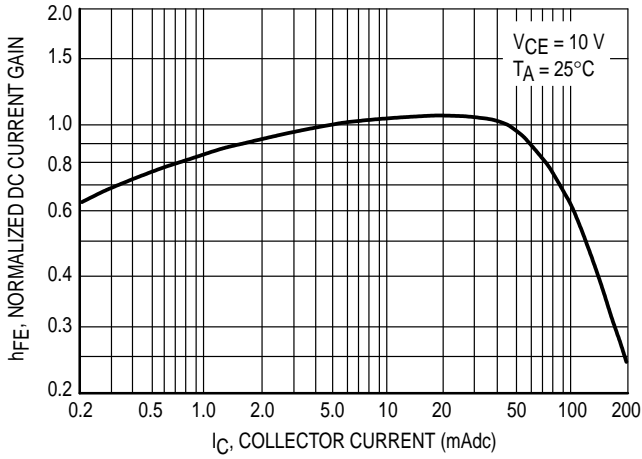


Figure 1. Normalized DC Current Gain

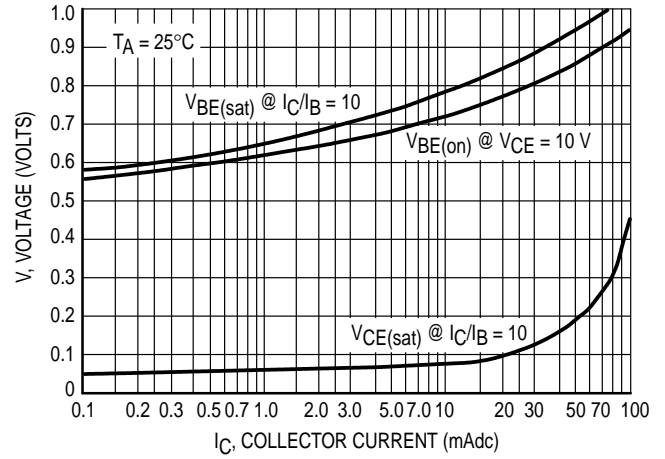


Figure 2. "Saturation" and "On" Voltages

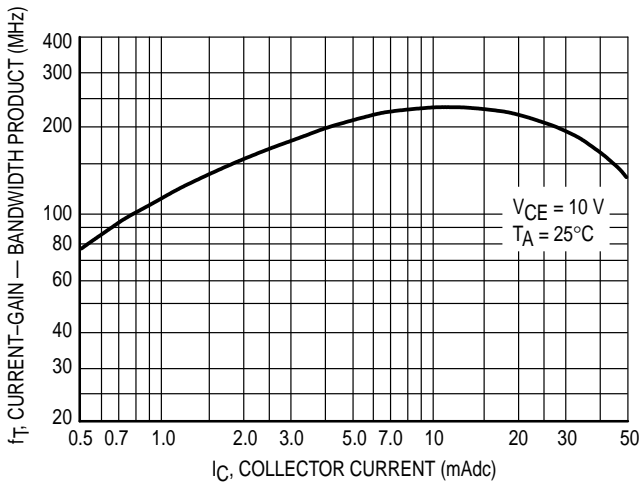


Figure 3. Current-Gain — Bandwidth Product

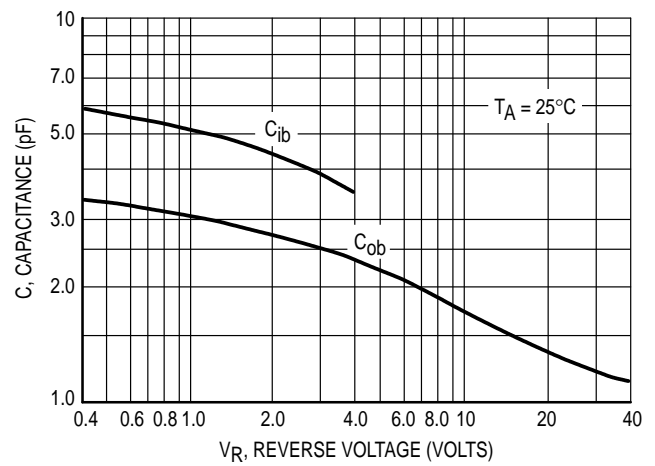


Figure 4. Capacitances

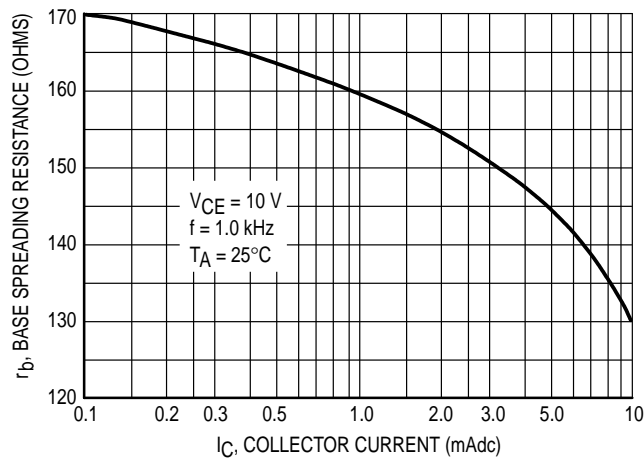


Figure 5. Base Spreading Resistance

PACKAGE DIMENSIONS



CASE 029-04
(TO-226AA)
ISSUE AD

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION D AND J APPLY BETWEEN L AND K. MINIMUM LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.022	0.41	0.55
F	0.016	0.019	0.41	0.48
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	—	12.70	—
L	0.250	—	6.35	—
N	0.080	0.105	2.04	2.66
P	—	0.100	—	2.54
R	0.115	—	2.93	—
V	0.135	—	3.43	—

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2. BASE
3. EMITTER

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Datasheets for electronics components.

BC182, BC182A, BC182B

Amplifier Transistors

NPN Silicon

Features

- Pb-Free Package is Available*

MAXIMUM RATINGS

Rating	Symbol	BC182	Unit
Collector–Emitter Voltage	V_{CEO}	50	Vdc
Collector–Base Voltage	V_{CBO}	60	Vdc
Emitter–Base Voltage	V_{EBO}	6.0	Vdc
Collector Current – Continuous	I_C	100	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	350 2.8	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 8.0	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

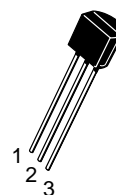
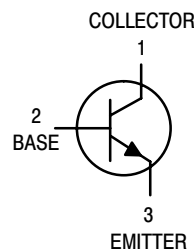
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction–to–Case	$R_{\theta JC}$	125	$^\circ\text{C}/\text{W}$

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



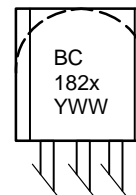
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TO-92
CASE 29
STYLE 17

MARKING DIAGRAM



BC Specific Device Code
x A or B
Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping†
BC182	TO-92	5000 Units / Box
BC182G	TO-92 (Pb-Free)	5000 Units / Box
BC182A	TO-92	5000 Units / Box
BC182B	TO-92	5000 Units / Box
BC182BRL1	TO-92	2000 /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.

BC182, BC182A, BC182B

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (I _C = 2.0 mA, I _B = 0)	V _{(BR)CEO}	50	–	–	V
Collector–Base Breakdown Voltage (I _C = 10 μA, I _E = 0)	V _{(BR)CBO}	60	–	–	V
Emitter–Base Breakdown Voltage (I _E = 100 μA, I _C = 0)	V _{(BR)EBO}	6.0	–	–	V
Collector Cutoff Current (V _{CB} = 50 V, V _{BE} = 0)	I _{CBO}	–	0.2	15	nA
Emitter–Base Leakage Current (V _{EB} = 4.0 V, I _C = 0)	I _{EBO}	–	–	15	nA
ON CHARACTERISTICS					
DC Current Gain (I _C = 10 μA, V _{CE} = 5.0 V)	h _{FE}	40	–	–	–
(I _C = 2.0 mA, V _{CE} = 5.0 V)		120	–	500	
(I _C = 100 mA, V _{CE} = 5.0 V)		80	–	–	
		120	–	220	
Collector–Emitter On Voltage (I _C = 10 mA, I _B = 0.5 mA)	V _{CE(sat)}	–	0.07	0.25	V
(I _C = 100 mA, I _B = 5.0 mA) (Note 1)		–	0.2	0.6	
Base–Emitter Saturation Voltage (I _C = 100 mA, I _B = 5.0 mA) (Note 1)	V _{BE(sat)}	–	–	1.2	V
Base–Emitter On Voltage (I _C = 100 μA, V _{CE} = 5.0 V)	V _{BE(on)}	–	0.5	–	V
(I _C = 2.0 mA, V _{CE} = 5.0 V)		0.55	0.62	0.7	
(I _C = 100 mA, V _{CE} = 5.0 V) (Note 1)		–	0.83	–	
DYNAMIC CHARACTERISTICS					
Current–Gain — Bandwidth Product (I _C = 0.5 mA, V _{CE} = 3.0 V, f = 100 MHz)	f _T	–	100	–	MHz
(I _C = 10 mA, V _{CE} = 5.0 V, f = 100 MHz)		150	200	–	
Common Base Output Capacitance (V _{CB} = 10 V, I _C = 0, f = 1.0 MHz)	C _{ob}	–	–	5.0	pF
Common Base Input Capacitance (V _{EB} = 0.5 V, I _C = 0, f = 1.0 MHz)	C _{ib}	–	8.0	–	pF
Small–Signal Current Gain (I _C = 2.0 mA, V _{CE} = 5.0 V, f = 1.0 kHz)	h _{fe}	125	–	500	–
		125	–	260	
		240	–	500	
Noise Figure (I _C = 0.2 mA, V _{CE} = 5.0 V, R _S = 2.0 kΩ, f = 1.0 kHz)	NF	–	2.0	10	dB

1. Pulse Test: T_p 300 s, Duty Cycle 2.0%.

BC182, BC182A, BC182B

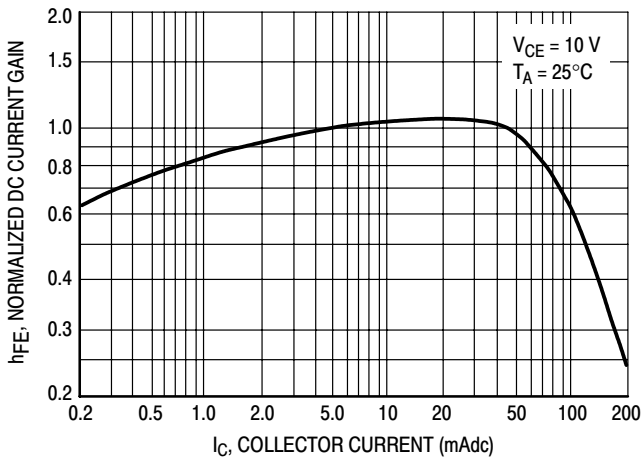


Figure 1. Normalized DC Current Gain

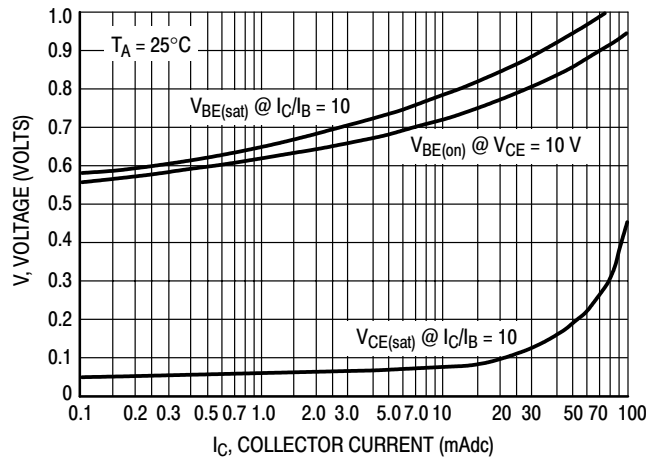


Figure 1. "Saturation" and "On" Voltages

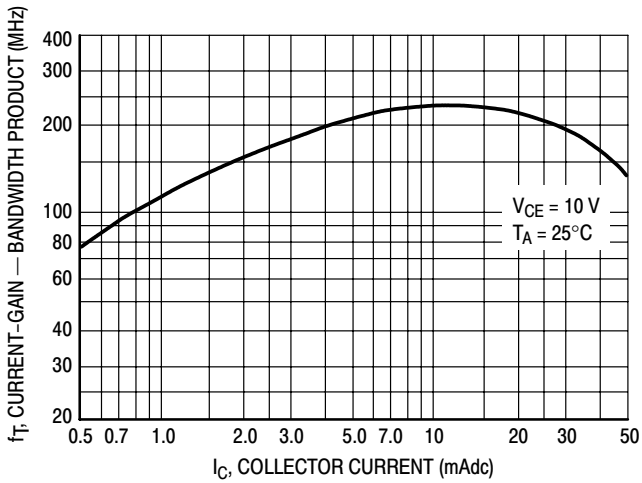


Figure 2. Current-Gain — Bandwidth Product

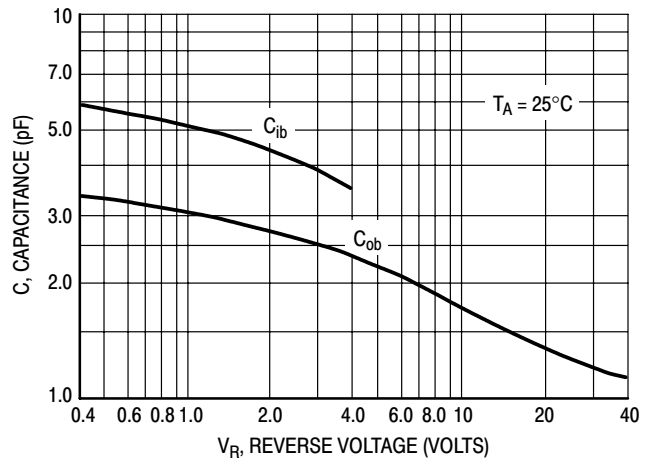


Figure 3. Capacitances

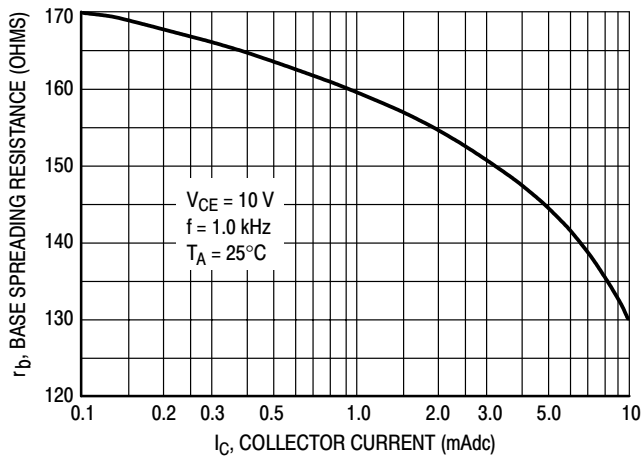
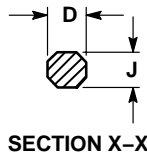
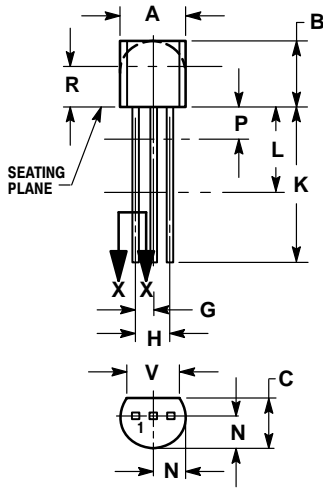


Figure 4. Base Spreading Resistance

BC182, BC182A, BC182B

PACKAGE DIMENSIONS

TO-92
TO-226AA
CASE 29-11
ISSUE AL




NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

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2. BASE
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