

Parameter	Value
V_{CEO}	-120V
I_C	-50mA

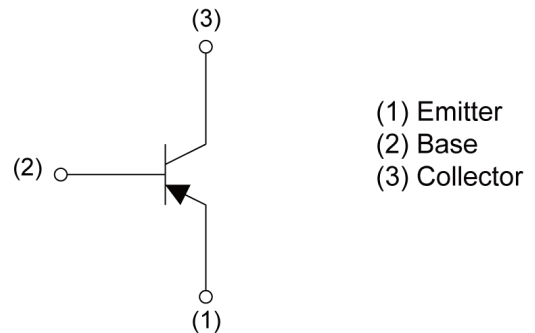
●Outline

UMT3	SMT3
2SA1579 SOT-323	2SA1514K SOT-346

●Features

- 1)High breakdown voltage. ($BV_{CEO}=-120V$)
- 2)Complements the 2SC4102/2SC3906K.

●Inner circuit



●Application

HIGH VOLTAGE AMPLIFIER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	hFE rank	Marking
2SA1579	UMT3	2021	T106	180	8	3000	RS	R
2SA1514K	SMT3	2928	T146	180	8	3000	RS	R

● Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Values	Unit
Collector-base voltage		V_{CBO}	-120	V
Collector-emitter voltage		V_{CEO}	-120	V
Emitter-base voltage		V_{EBO}	-5	V
Collector current		I_C	-50	mA
Power dissipation	2SA1579	P_D^{*1}	200	mW
	2SA1514K		200	
Junction temperature		T_j	150	$^\circ\text{C}$
Range of storage temperature		T_{stg}	-55 to +150	$^\circ\text{C}$

● Electrical characteristics ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	BV_{CBO}	$I_C = -50\mu\text{A}$	-120	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1\text{mA}$	-120	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -50\mu\text{A}$	-5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = -100\text{V}$	-	-	-500	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -4\text{V}$	-	-	-500	nA
Collector-emitter saturation voltage	$V_{CE(sat)}^{*2}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$	-	-	-500	mV
DC current gain	h_{FE}	$V_{CE} = -6\text{V}, I_C = -2\text{mA}$	180	-	560	-
Transition frequency	f_T	$V_{CE} = -12\text{V}, I_E = 2\text{mA}, f = 100\text{MHz}$	-	140	-	MHz
Output capacitance	C_{ob}	$V_{CB} = -12\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$	-	3.2	-	pF

h_{FE} values are classified as follows :

rank	R	S	-	-	-
h_{FE}	180-390	270-560	-	-	-

*1 Each terminal mounted on a reference land.

*2 Pulsed

● Electrical characteristic curves ($T_a = 25^\circ\text{C}$)

Fig.1 Ground Emitter Propagation Characteristics

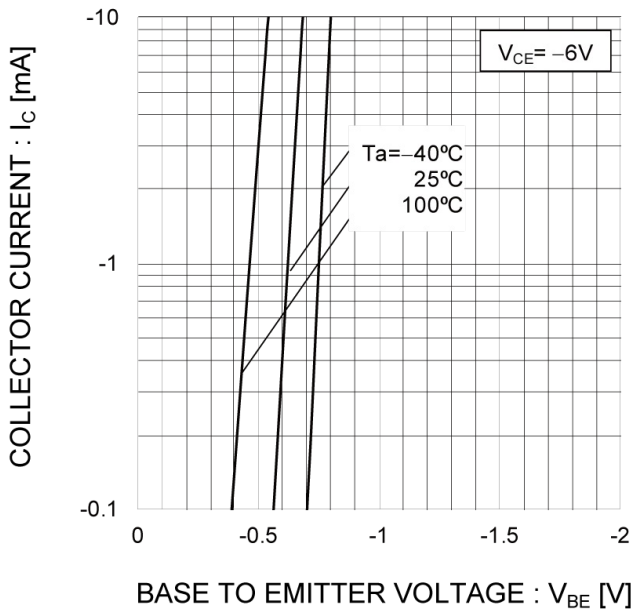


Fig.2 Typical Output Characteristics

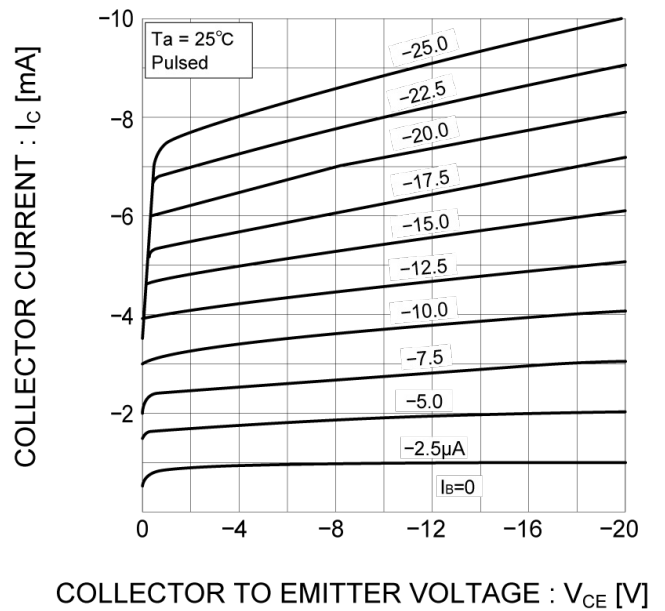


Fig.3 DC Current Gain vs. Collector Current (I)

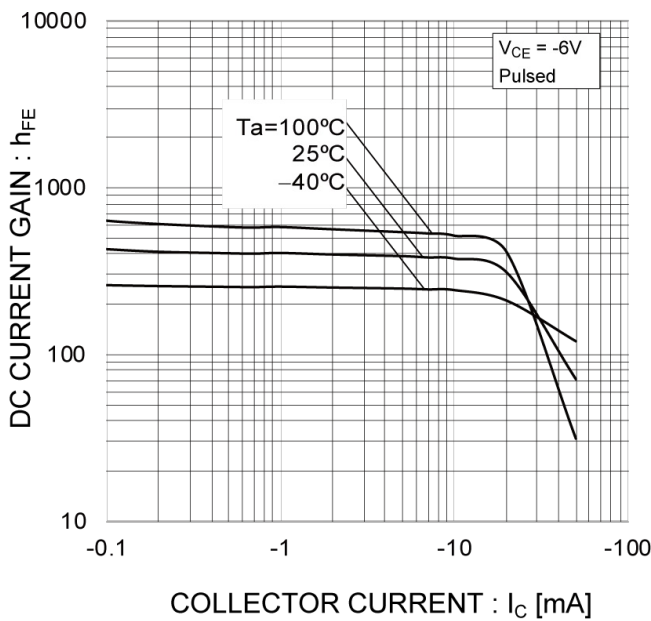
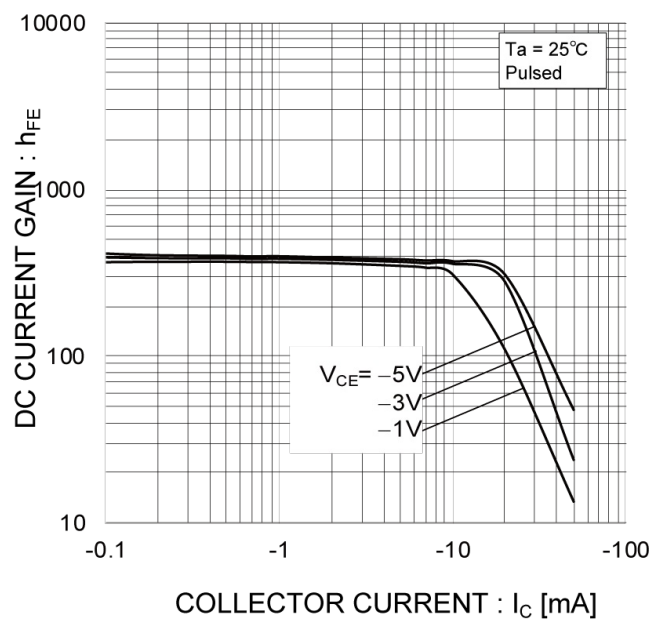


Fig.4 DC Current Gain vs. Collector Current (II)



● Electrical characteristic curves ($T_a = 25^\circ\text{C}$)

Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

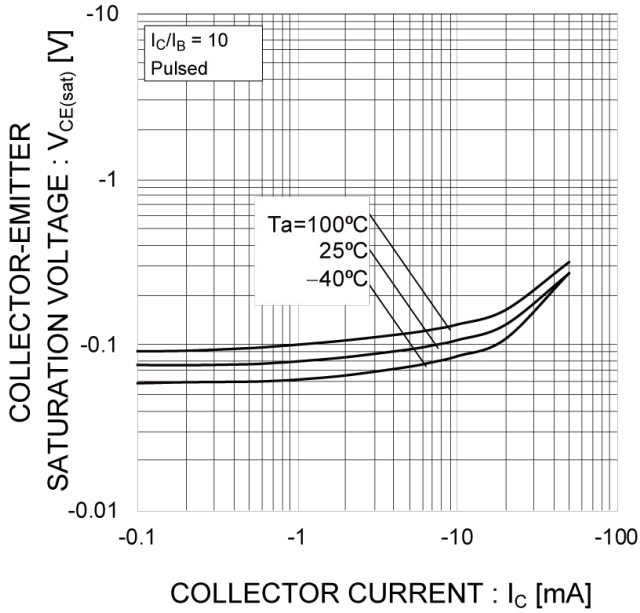


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

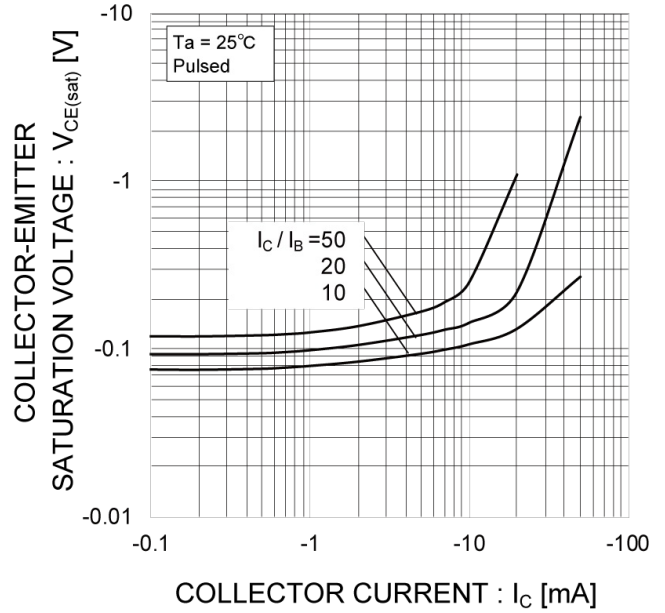


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

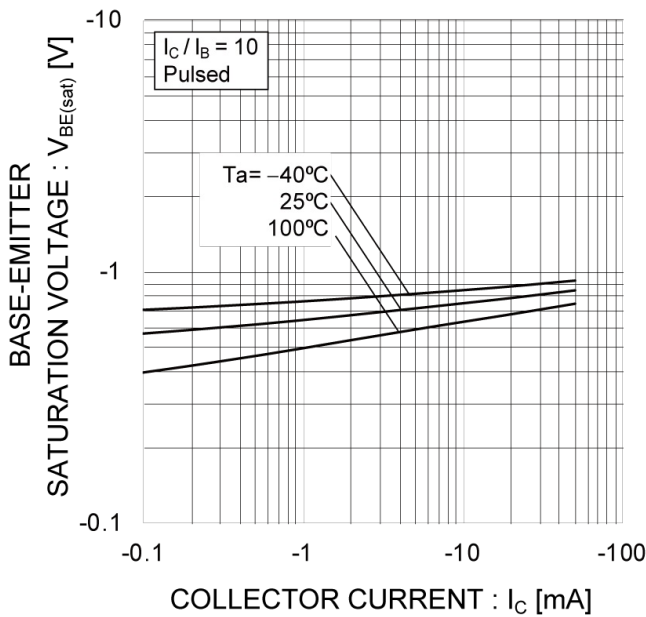
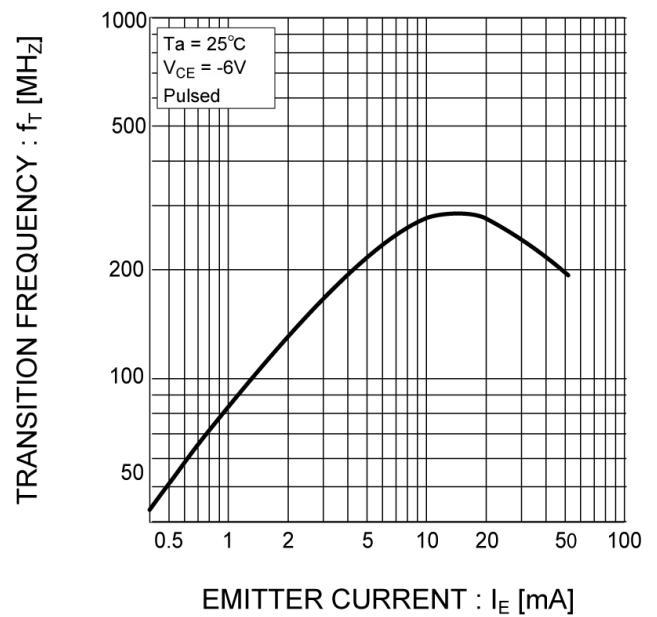


Fig.8 Gain Bandwidth Product vs. Emitter Current



● Electrical characteristic curves ($T_a = 25^\circ\text{C}$)

Fig.9 Collector Output Capacitance vs. Collector-Base Voltage

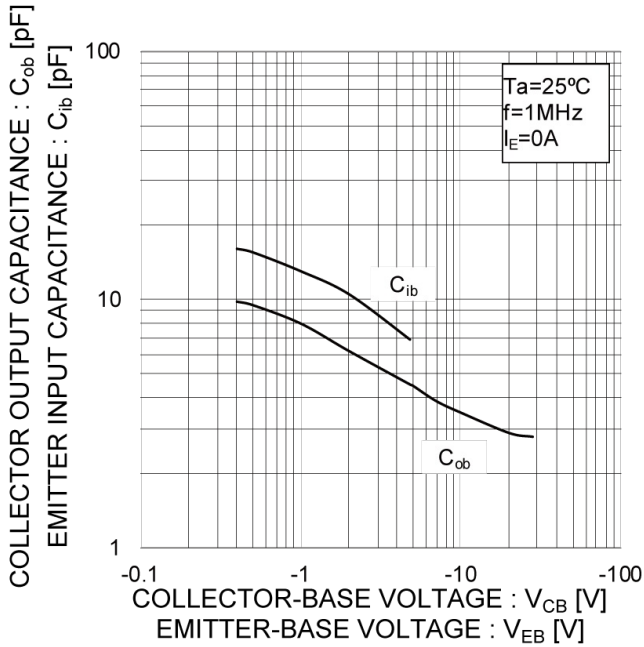


Fig.10 Safe Operating Area

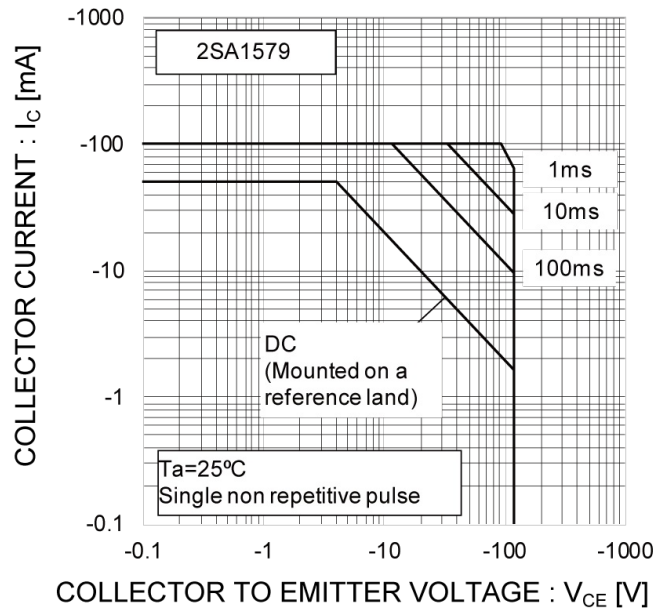
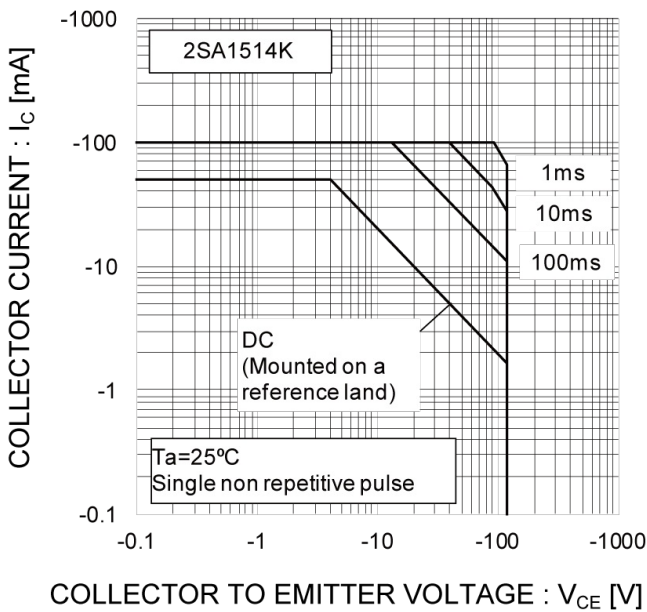
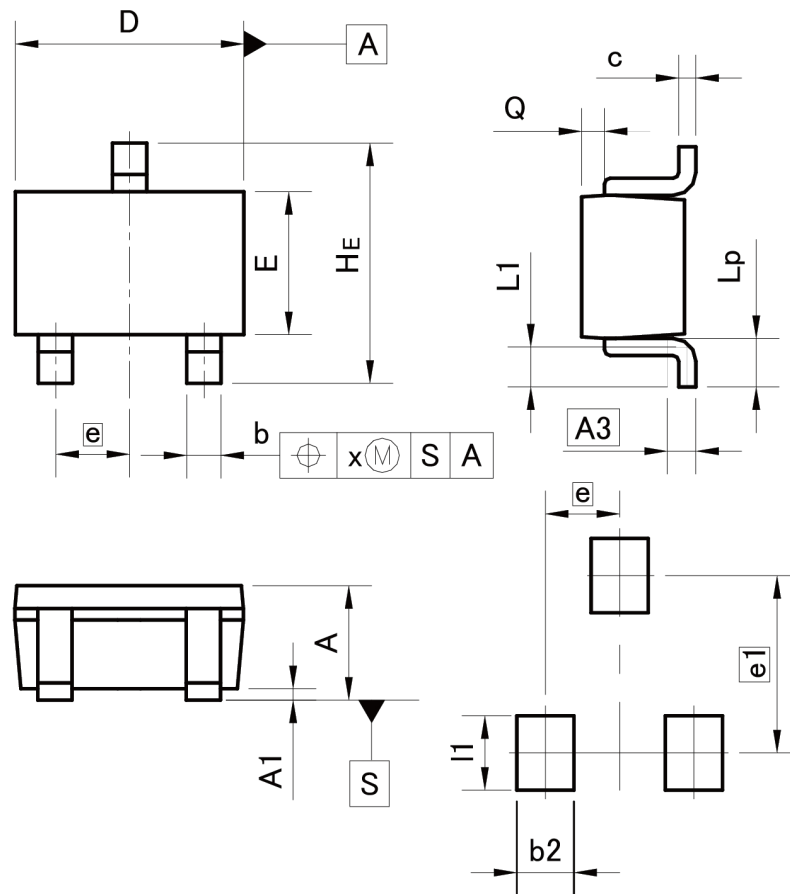


Fig.11 Safe Operating Area



●Dimensions

UMT3



Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

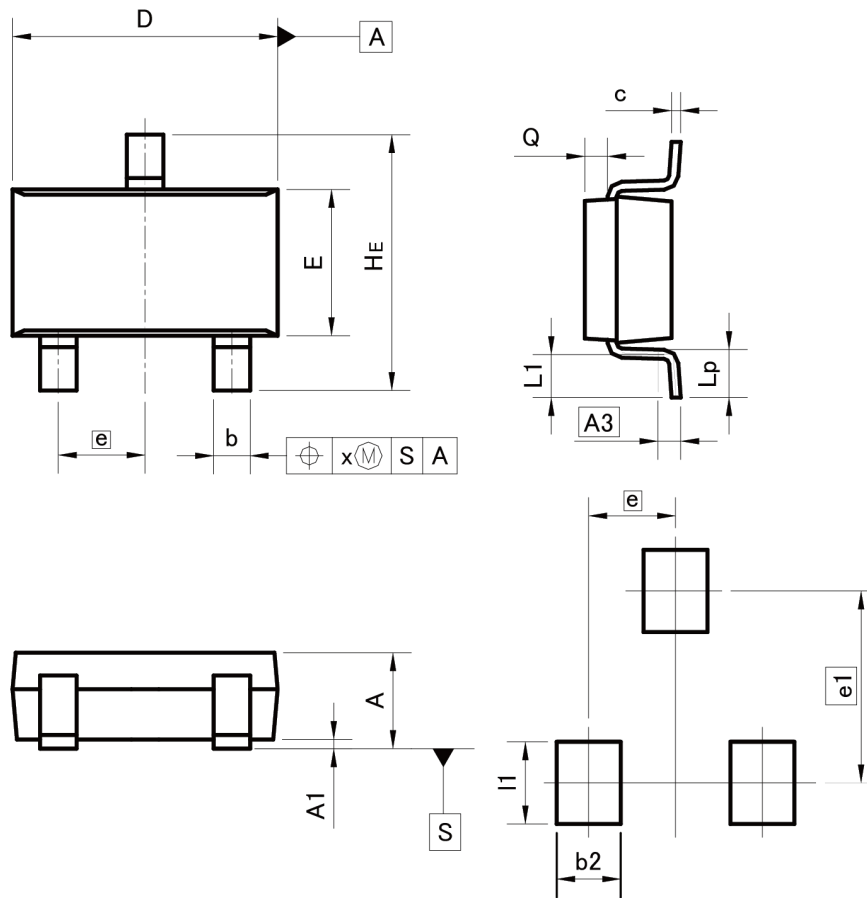
DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	1.00	0.031	0.039
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.15	0.30	0.006	0.012
c	0.10	0.20	0.004	0.008
D	1.90	2.10	0.075	0.083
E	1.15	1.35	0.045	0.053
e	0.65		0.026	
HE	2.00	2.20	0.079	0.087
L1	0.20	0.50	0.008	0.020
Lp	0.25	0.55	0.010	0.022
Q	0.10	0.30	0.004	0.012
x	-	0.10	-	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	-	0.50	-	0.020
e1	1.55		0.061	
l1	-	0.65	-	0.026

Dimension in mm/inches

●Dimensions

SMT3



Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.00	1.30	0.039	0.051
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.35	0.50	0.014	0.020
c	0.09	0.25	0.004	0.010
D	2.80	3.00	0.110	0.118
E	1.50	1.80	0.059	0.071
e	0.95		0.037	
HE	2.60	3.00	0.102	0.118
L1	0.30	0.60	0.012	0.024
Lp	0.40	0.70	0.016	0.028
Q	0.20	0.30	0.008	0.012
x	-	0.10	-	0.004
y	-	0.10	-	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	-	0.60	-	0.024
e1	2.10		0.083	
l1	-	0.90	-	0.035

Dimension in mm/inches

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