

Parameter	Value
V_{CEO}	12V
I_C	500mA

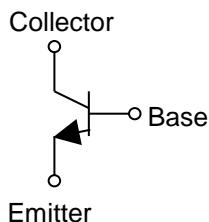
●Outline

VMT3 2SC5663 (SC-105AA)	EMT3 2SC5585 SOT-416 (SC-75A)
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●Features

- 1) A Collector current is large. General Purpose.
- 2) Collector saturation voltage is low.
 $V_{CE(sat)} \leq 250\text{mV}$
At $I_C=200\text{mA}$, $I_B=10\text{mA}$
- 3) Complementary NPN Types :
2SA2030 (VMT3) / 2SA2018 (EMT3) / 2SA2119K (SMT3)
- 4) Lead Free/RoHS Compliant.

●Inner circuit



●Applications

Switching circuit, Muting circuit

●Packaging specifications

Part No.	Package	Package size (mm)	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit (pcs)	Marking
2SC5663	VMT3	1212	T2L	180	8	8,000	BX
2SC5585	EMT3	1616	TL	180	8	3,000	BX

● Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Values	Unit
Collector-base voltage	V _{CBO}	15	V
Collector-emitter voltage	V _{CEO}	12	V
Emitter-base voltage	V _{EBO}	6	V
Collector current	I _C	500	mA
	I _{CP} ^{*1}	1	A
Power dissipation	P _D ^{*2}	150	mW
Junction temperature	T _j	150	°C
Range of storage temperature	T _{stg}	-55 to +150	°C

● Electrical characteristics(Ta = 25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	BV _{CEO}	I _C = 1mA	12	-	-	V
Collector-base breakdown voltage	BV _{CBO}	I _C = 10μA	15	-	-	V
Emitter-base breakdown voltage	BV _{EBO}	I _E = 10μA	6	-	-	V
Collector cut-off current	I _{CBO}	V _{CB} = 15V	-	-	100	nA
Emitter cut-off current	I _{EBO}	V _{EB} = 6V	-	-	100	nA
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 200mA, I _B = 10mA	-	90	250	mV
DC current gain	h _{FE}	V _{CE} = 2V, I _C = 10mA	270	-	680	-
Transition frequency	f _T	V _{CE} = 2V, I _E = -10mA f = 100MHz	-	320	-	MHz
Output capacitance	C _{ob}	V _{CB} = 10V, I _E = 0mA, f = 1MHz	-	7.5	-	pF

*1 P_W=10ms Single pulse.

*2 Each terminal mounted on a reference footprint

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

Fig.1 Ground Emitter Propagation Characteristics

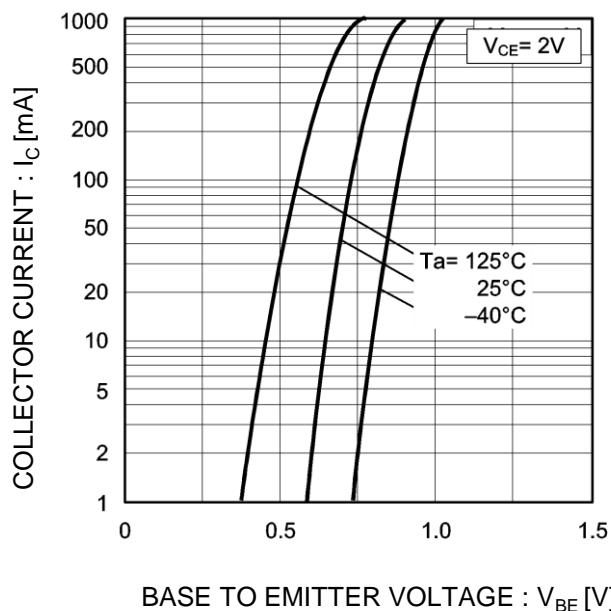
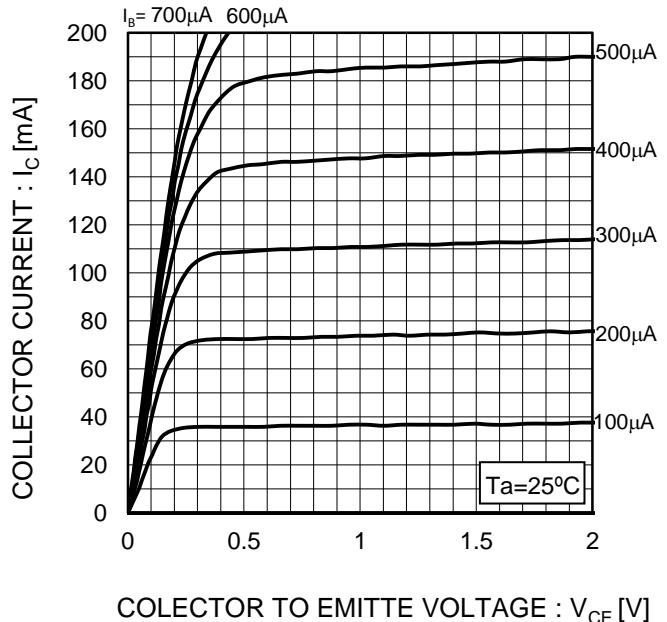
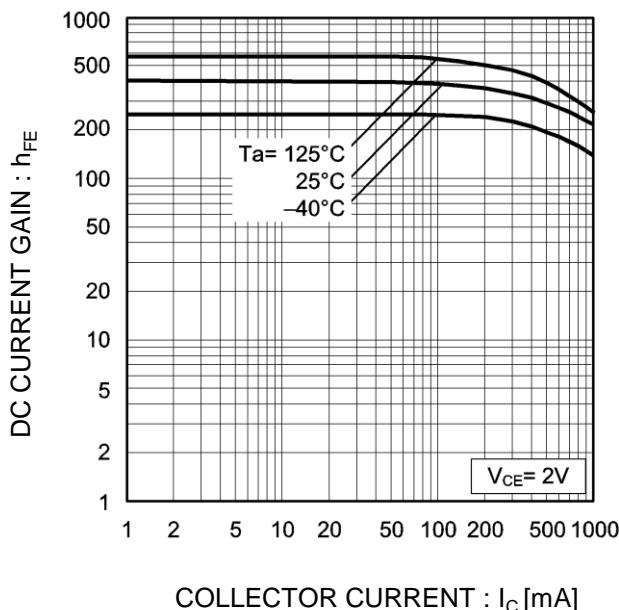
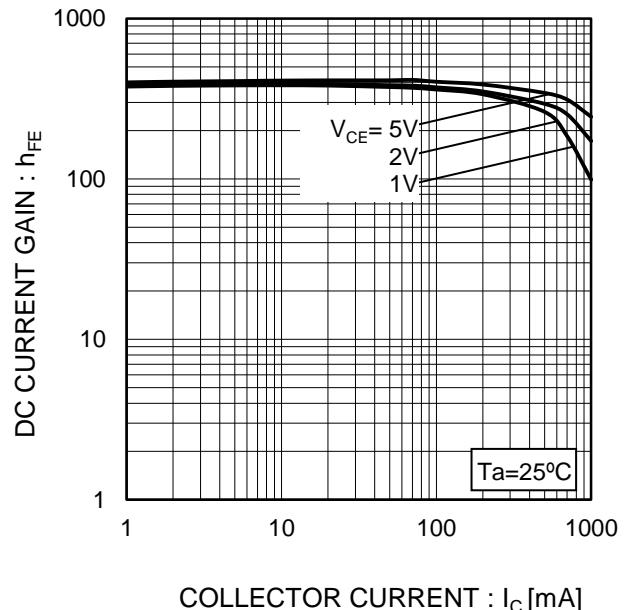
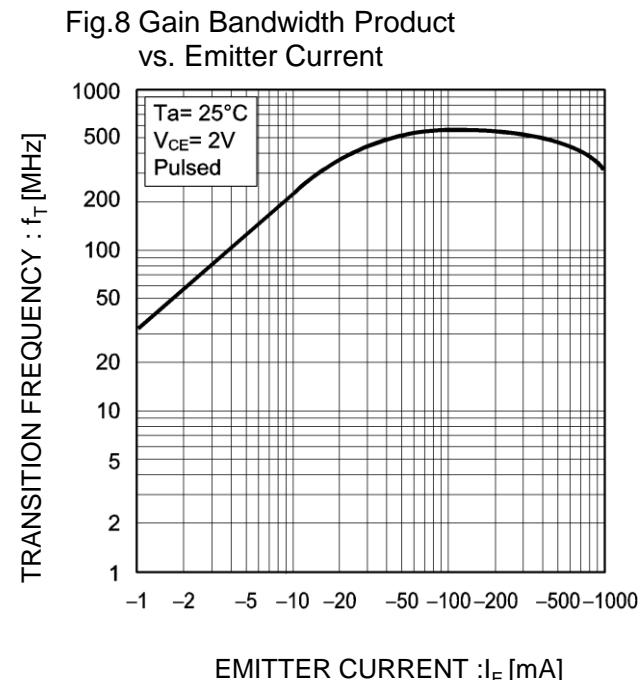
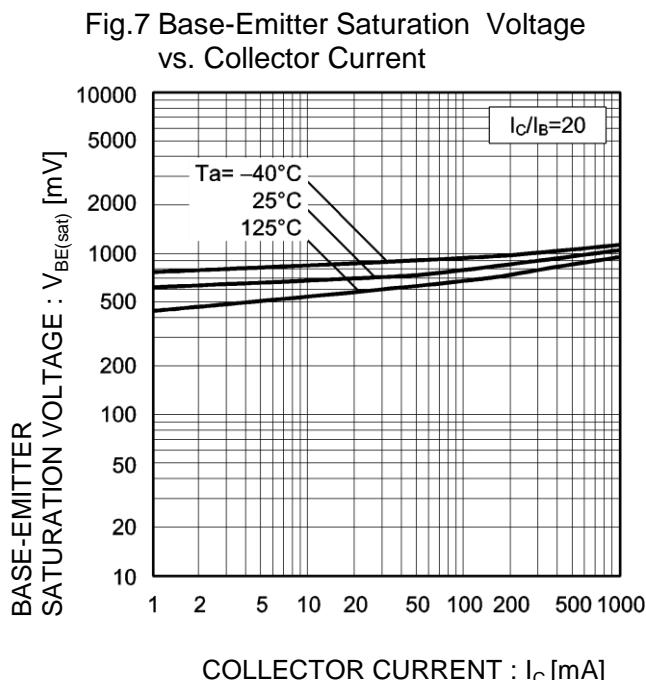
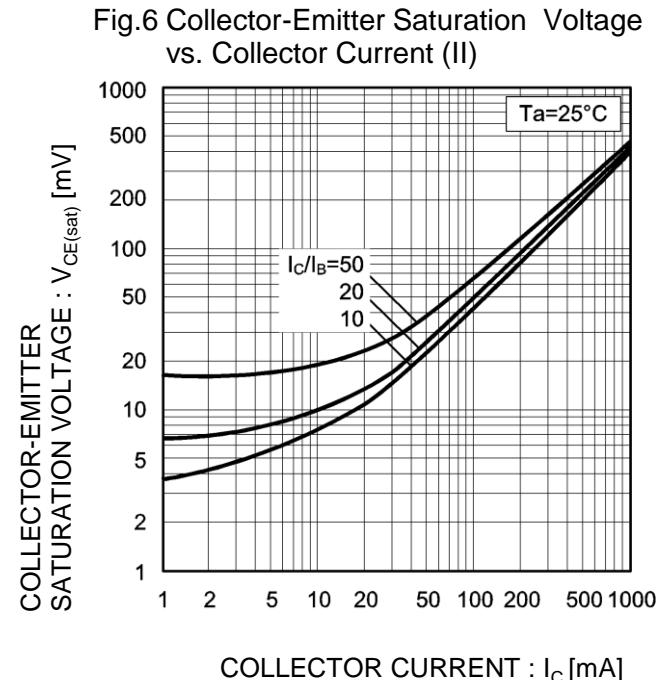
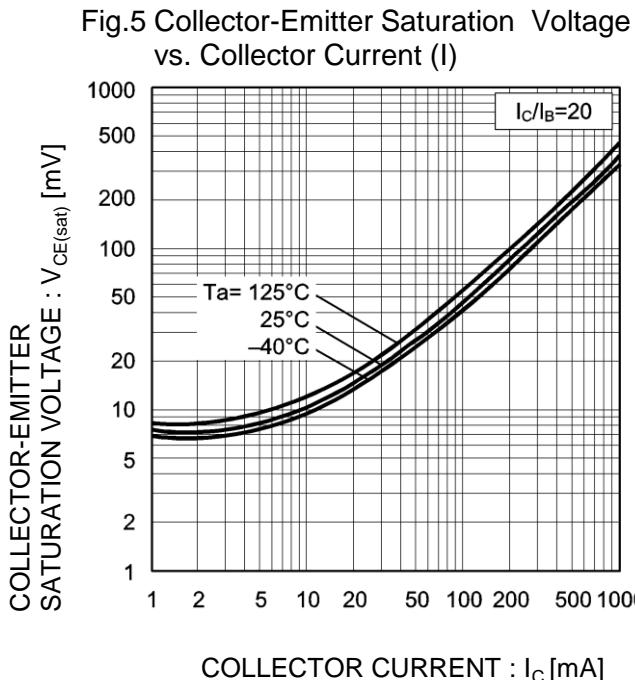


Fig.2 Typical Output Characteristics

Fig.3 DC Current Gain vs. Collector Current(I)Fig.4 DC Current Gain vs. Collector Current(II)

●Electrical characteristic curves (Ta = 25°C)



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

Fig.9 Emitter input capacitance vs.

Emitter-Base Voltage

Collector output capacitance vs.

Collector-Base Voltage

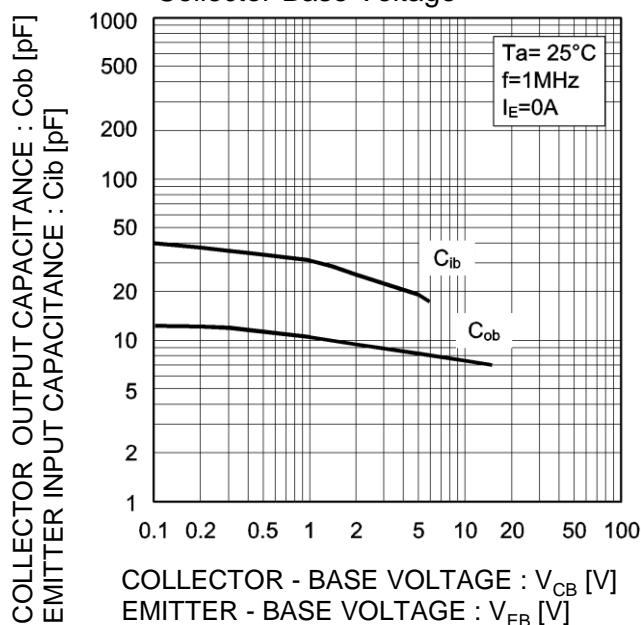


Fig.10 Safe Operating Area

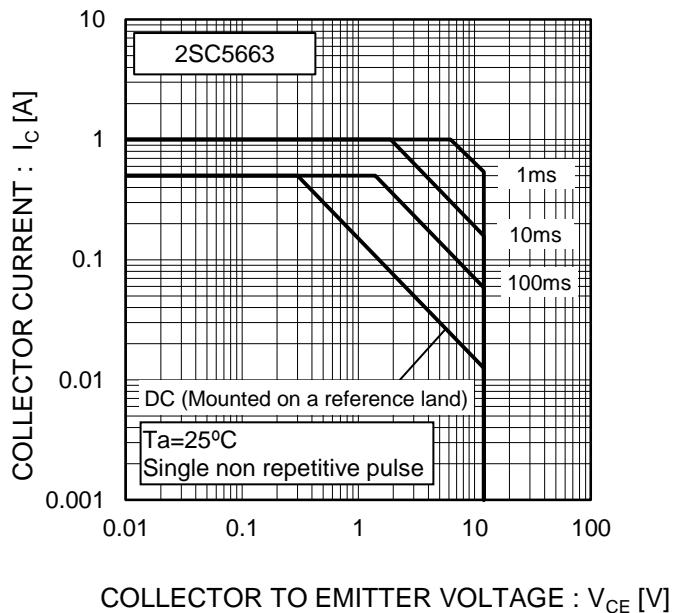
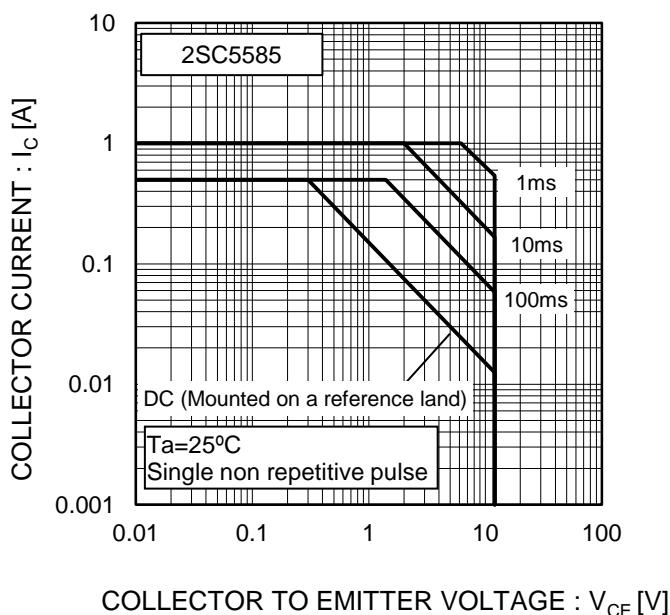
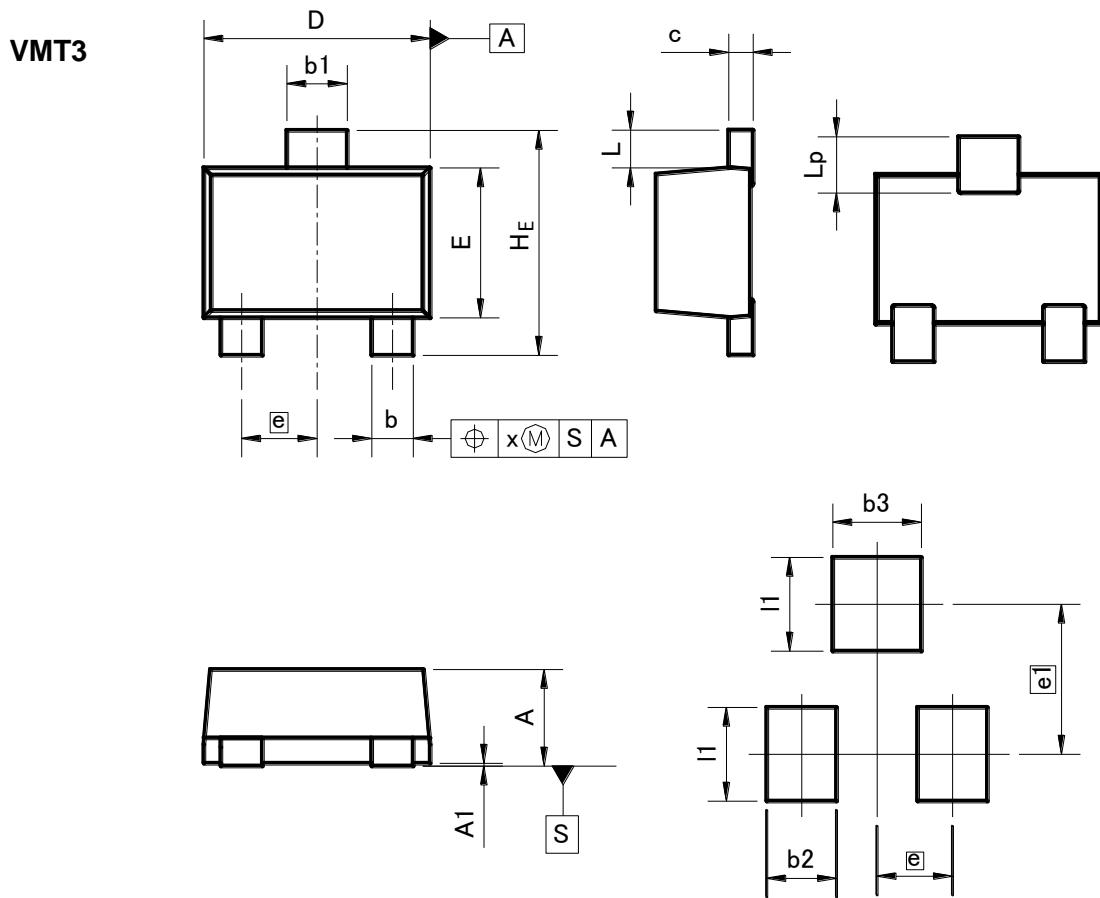


Fig.11 Safe Operating Area



●Dimensions (Unit : mm)

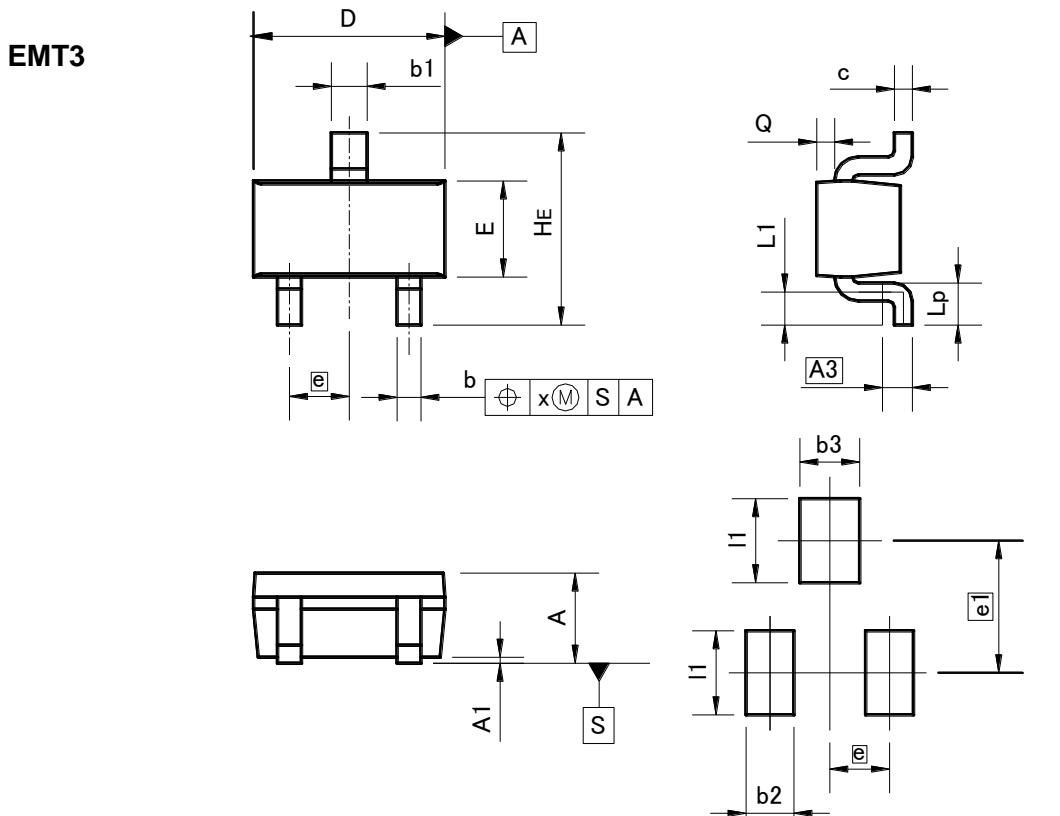


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.45	0.55	0.018	0.022
A1	0.00	0.10	0.000	0.004
b	0.17	0.27	0.007	0.011
b1	0.27	0.37	0.011	0.015
c	0.08	0.18	0.003	0.007
D	1.10	1.30	0.043	0.051
E	0.70	0.90	0.028	0.035
e	0.40		0.02	
H_E	1.10	1.30	0.043	0.051
L	0.10	0.30	0.004	0.012
L_p	0.20	0.40	0.008	0.016
x	—	0.10	—	0.004

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	—	0.37	—	0.015
b3	—	0.47	—	0.019
e1	0.80		0.031	
I1	—	0.50	—	0.020

Dimension in mm / inches

●Dimensions (Unit : mm)



Pattern of terminal position areas

[Not a recommended pattern of soldering pads]

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.60	0.80	0.024	0.031
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.15	0.30	0.006	0.012
b1	0.25	0.40	0.010	0.016
c	0.10	0.20	0.004	0.008
D	1.50	1.70	0.059	0.067
E	0.70	0.90	0.028	0.035
e	0.50		0.020	
HE	1.40	1.80	0.055	0.071
L1	0.10	—	0.004	—
Lp	0.15	—	0.006	—
Q	0.05	0.25	0.002	0.010
x	—	0.10	—	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	—	0.40	—	0.016
b3	—	0.50	—	0.020
e1	1.10		0.043	
I1	—	0.70	—	0.028

Dimension in mm / inches

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