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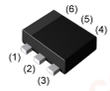
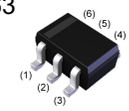
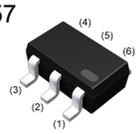
EMX1 / UMX1N / IMX1

General purpose transistor (dual transistors)

Datasheet

Parameter	Tr1 and Tr2
V_{CEO}	50V
I_C	150mA

●Outline

SOT-563  EMX1 (EMT6)	SOT-363  UMX1N (UMT6)
SOT-457  IMX1 (SMT6)	

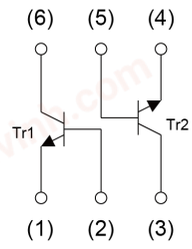
●Features

1) Two 2SC2412K chips in a EMT, UMT or SMT package.
2) Mounting possible with EMT3, UMT3 or SMT3 automatic mounting machines.
3) Transistor elements are independent, eliminating interference.
4) Mounting cost and area can be cut in half.

●Inner circuit

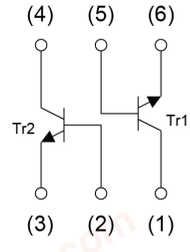
EMX1 / UMX1N

(1) Tr1 Emitter
(2) Tr1 Base
(3) Tr2 Collector
(4) Tr2 Emitter
(5) Tr2 Base
(6) Tr1 Collector



IMX1

(1) Tr1 Collector
(2) Tr2 Base
(3) Tr2 Emitter
(4) Tr2 Collector
(5) Tr1 Base
(6) Tr1 Emitter



●Application

GENERAL PURPOSE SMALL SIGNAL AMPLIFIER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
EMX1	SOT-563 (EMT6)	1616	T2R	180	8	8000	X1
UMX1N	SOT-363 (UMT6)	2021	TN	180	8	3000	X1
IMX1	SOT-457 (SMT6)	2928	T110	180	8	3000	X1

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●Absolute maximum ratings (T_a = 25°C)

<For Tr1 and Tr2 in common>

Parameter		Symbol	Values	Unit
Collector-base voltage		V_{CBO}	60	V
Collector-emitter voltage		V_{CEO}	50	V
Emitter-base voltage		V_{EBO}	7	V
Collector current		I_C	150	mA
Power dissipation	EMX1/ UMX1N	P_D*1 *2	150	mW/Total
	IMX1	P_D*1 *3	300	mW/Total
Junction temperature		T_j	150	℃
Range of storage temperature		T_{stg}	-55 to +150	℃

●Electrical characteristics (T_a = 25°C)

<For Tr1 and Tr2 in common>

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	BV_{CBO}	I_C = 50μA	60	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 1mA	50	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 50μA	7	-	-	V
Collector cut-off current	I_{CBO}	V_{CB} = 60V	-	-	100	nA
Emitter cut-off current	I_{EBO}	V_{EB} = 7V	-	-	100	nA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 50mA, I_B = 5mA	-	-	400	mV
DC current gain	h_{FE}	V_{CE} = 6V, I_C = 1mA	120	-	560	-
Transition frequency	f_T	V_{CE} = 12V, I_E = -2mA, f = 100MHz	-	180	-	MHz
Output capacitance	C_{ob}	V_{CB} = 12V, I_E = 0A, f = 1MHz	-	2.0	3.5	pF

*1 Each terminal mounted on a reference land.

*2 120mW per element must not be exceeded.

*3 200mW per element must not be exceeded.

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●Electrical characteristic curves (T_a = 25°C)

<For Tr1 and Tr2 in common>

Fig.1 Ground Emitter Propagation Characteristics

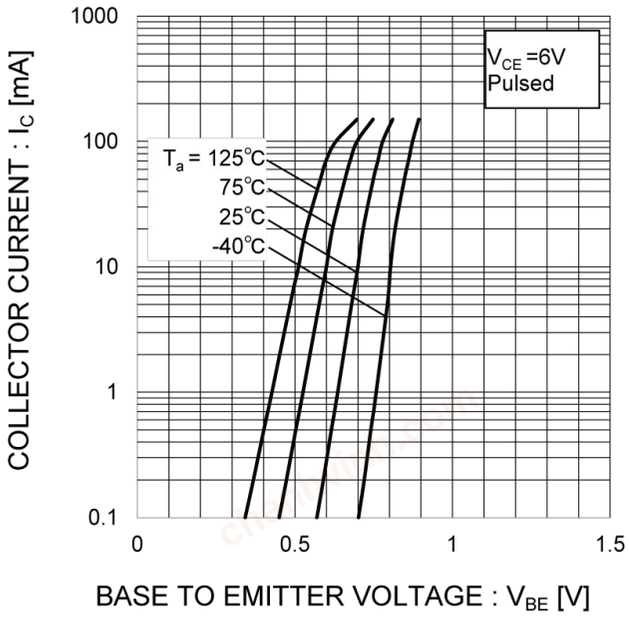


Fig.2 Grounded Emitter Output Characteristics

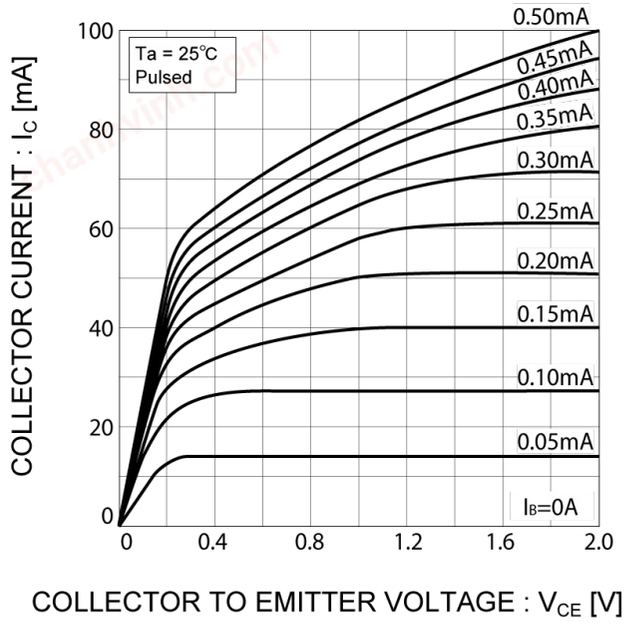


Fig.3 DC Current Gain vs. Collector Current (I)

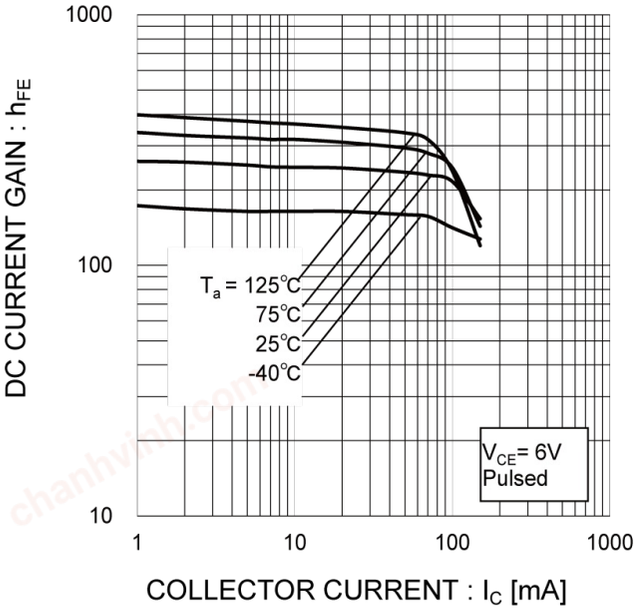
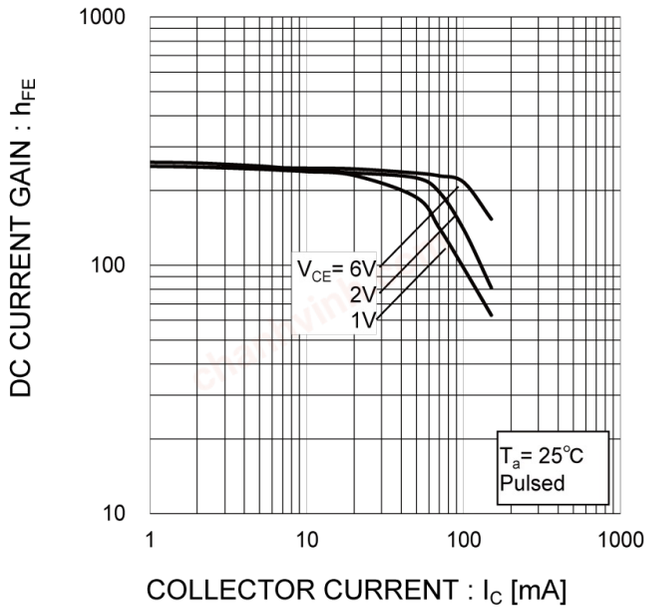


Fig.4 DC Current Gain vs. Collector Current (II)



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●Electrical characteristic curves (T_a = 25°C)

<For Tr1 and Tr2 in common>

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

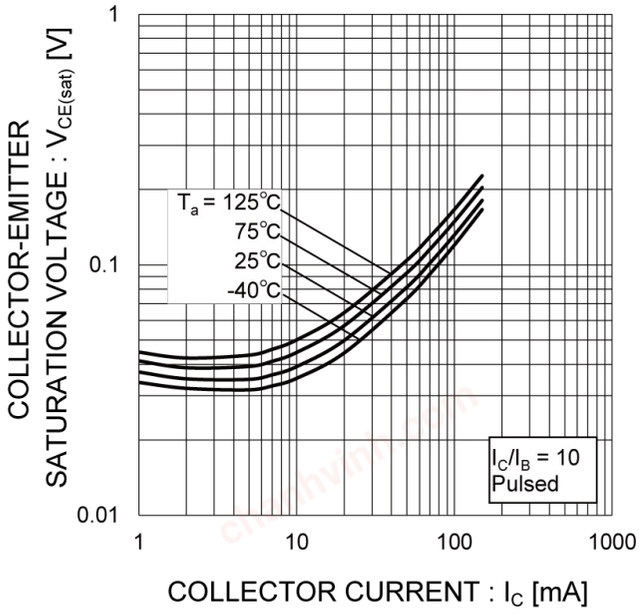


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current(II)

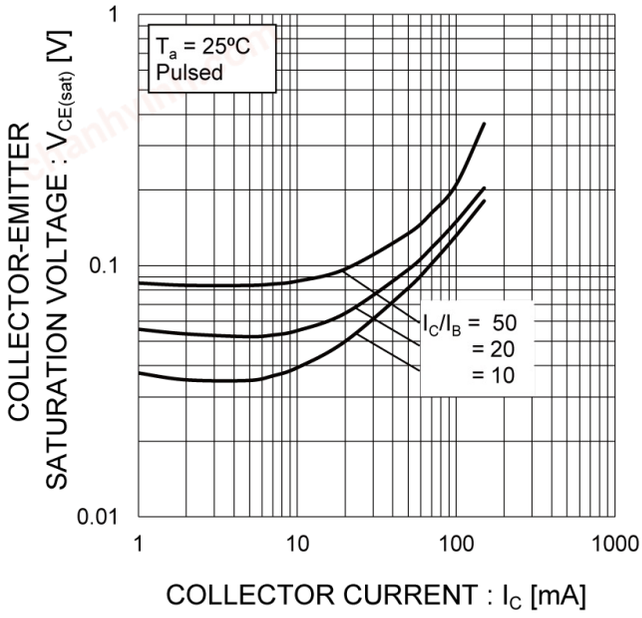


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current (I)

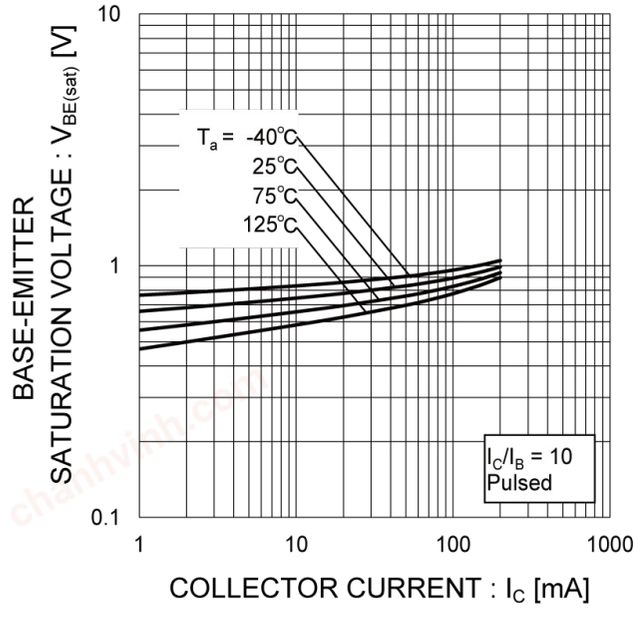
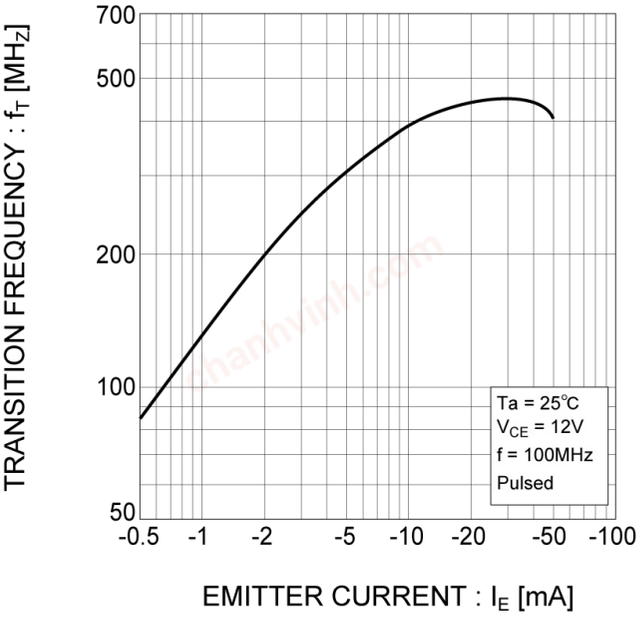


Fig.8 Gain Bandwith Product vs. Emitter Current



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●Electrical characteristic curves (T_a =25°C)

<For Tr1 and Tr2 in common>

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

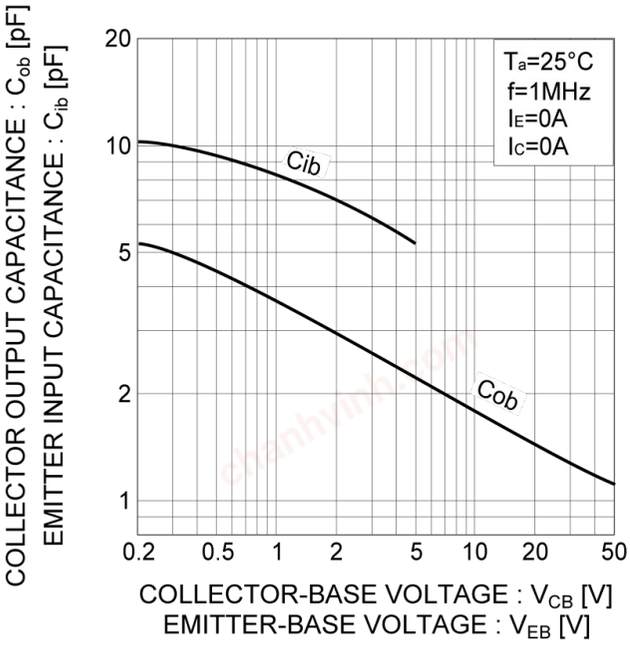


Fig.10 Safe Operating Area

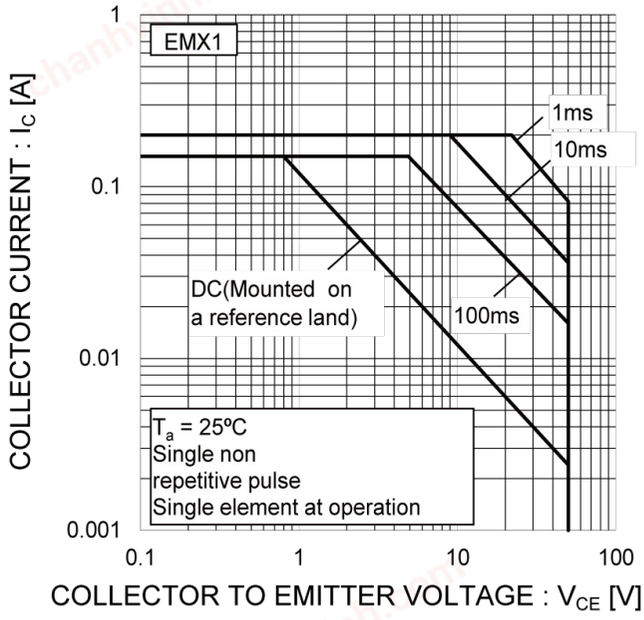


Fig.11 Safe Operating Area

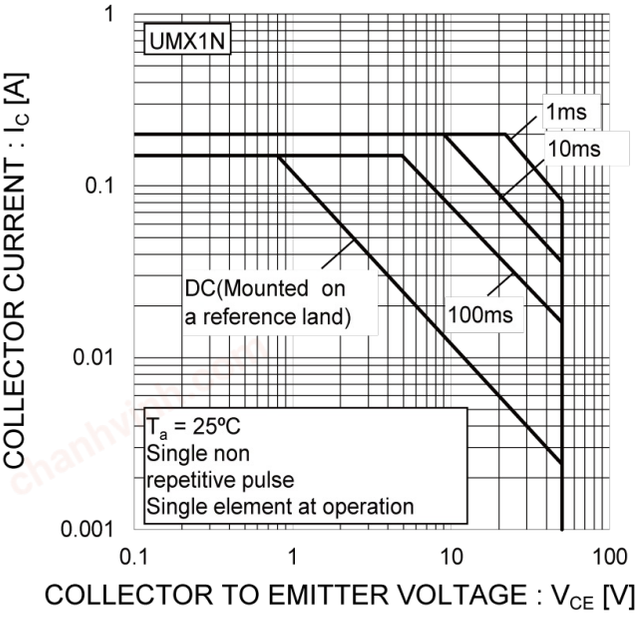
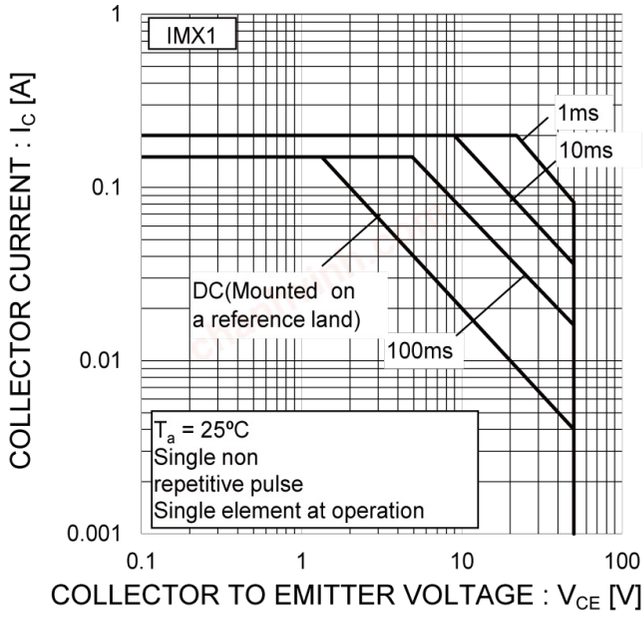


Fig.12 Safe Operating Area

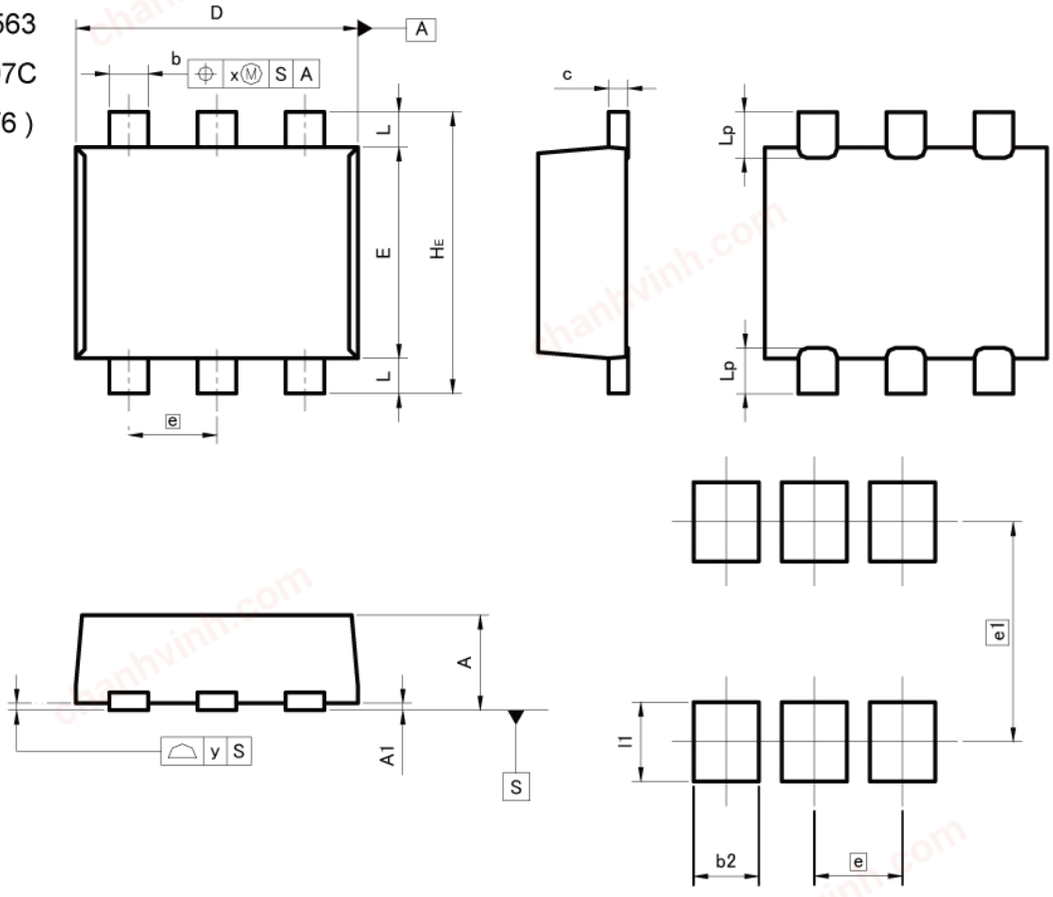


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●Dimensions

SOT-563
SC-107C
(EMT6)



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

DIM	MILIMETERS		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
c	0.08	0.18	0.003	0.007
D	1.50	1.70	0.059	0.067
E	1.10	1.30	0.043	0.051
e	0.50		0.020	
HE	1.50	1.70	0.059	0.067
L	0.10	0.30	0.004	0.012
Lp	–	0.35	–	0.014
x	–	0.10	–	0.004
y	–	0.10	–	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	–	0.37	–	0.015
e1	1.25		0.049	
l1	–	0.45	–	0.018

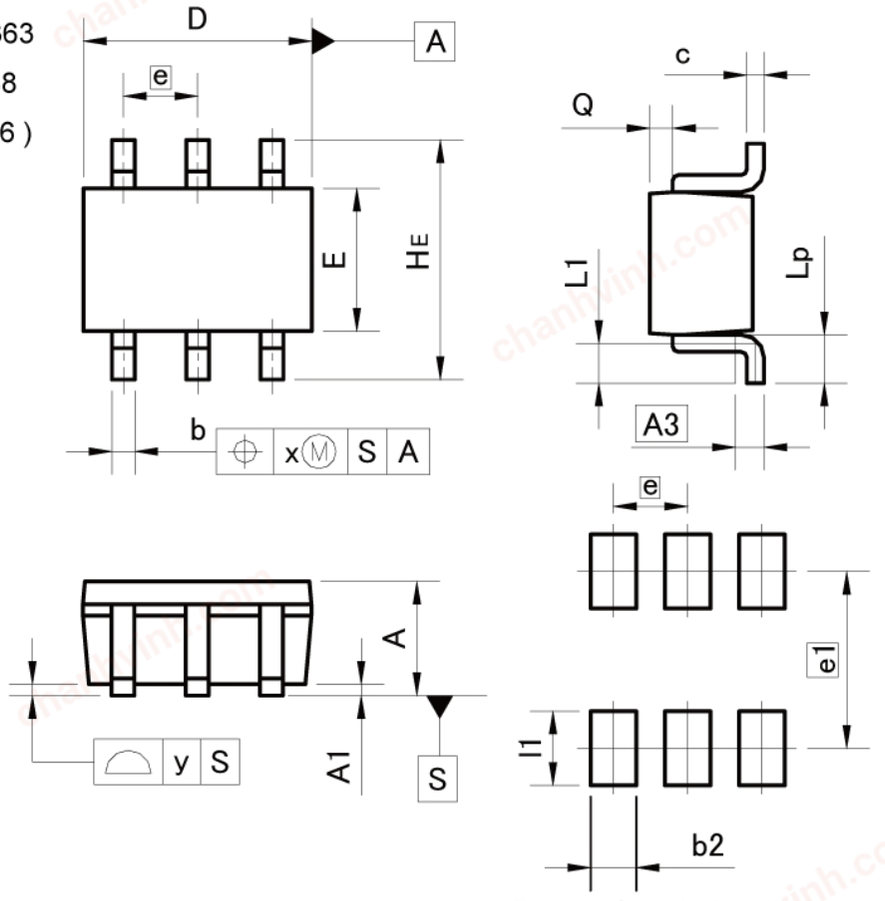
Dimension in mm/inches

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●Dimensions

SOT-363
SC-88
(UMT6)



Pattern of terminal position areas
[Not a 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
y	–	0.10	–	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	–	0.40	–	0.016
e1	1.55		0.061	
l1	–	0.65	–	0.026

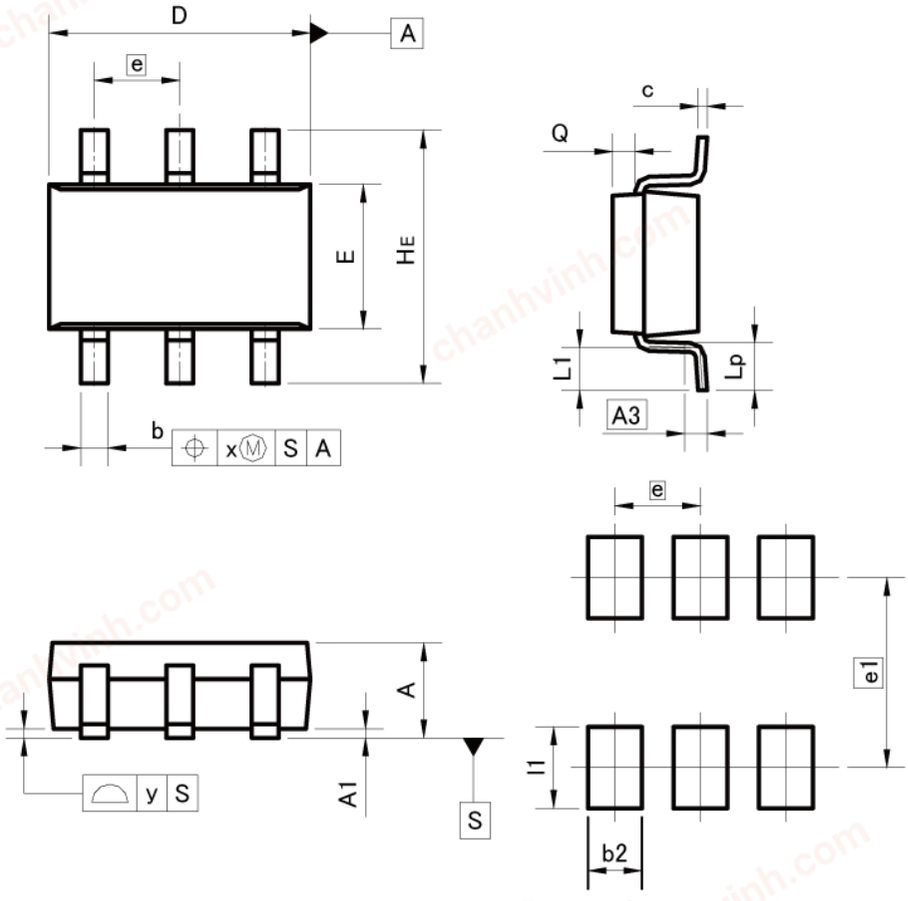
Dimension in mm/inches

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●Dimensions

SOT-457
SC-74
(SMT6)



Pattern of terminal position areas
[Not a 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	0.25	0.40	0.010	0.016
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	−	0.20	−	0.008
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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Datasheet

EMX1 - Web Page

Distribution Inventory

Part Number	EMX1
Package	EMT6
Unit Quantity	8000
Minimum Package Quantity	8000
Packing Type	Taping
Constitution Materials List	inquiry
RoHS	Yes