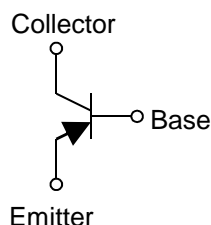


Parameter	Value
$V_{CEO}$	-60V
$I_C$	-3.0A

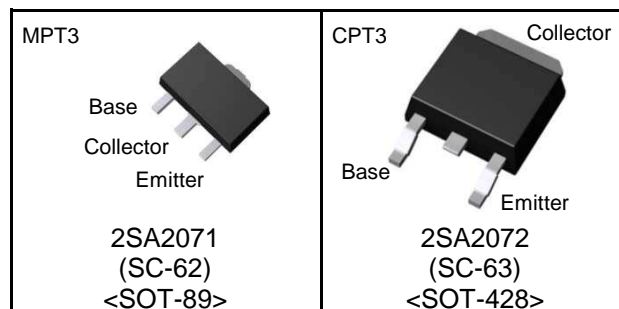
#### ●Features

- 1) Suitable for Middle Power Driver
- 2) Complementary NPN Types : 2SC5824 / 2SC5825
- 3) Low  $V_{CE(sat)}$   
 $V_{CE(sat)} = -500\text{mV Max. } (I_C/I_B = -2A / -0.2A)$
- 4) Lead Free/RoHS Compliant.

#### ●Inner circuit



#### ●Outline



#### ●Applications

Motor driver , LED driver  
Power supply

#### ●Packaging specifications

Part No.	Package	Package size (mm)	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit (pcs)	Marking
2SA2071	MPT3	4540	T100	180	12	1,000	UN
2SA2072	CPT3	6595	TL	330	16	2,500	A2072

#### ●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Values	Unit	
Collector-base voltage	$V_{CBO}$	-60	V	
Collector-emitter voltage	$V_{CEO}$	-60	V	
Emitter-base voltage	$V_{EBO}$	-6	V	
Collector current	DC	$I_C$	-3.0	A
	Pulsed	$I_{CP}^{*1}$	-6.0	A
Power dissipation	$P_D$	2SA2071	$0.5^{*2}$	W
			$2^{*3}$	W
		2SA2072	$1^{*4}$	W
			$10^{*5}$	W
Junction temperature	$T_j$	150	°C	
Range of storage temperature	$T_{stg}$	-55 to +150	°C	

\*1  $P_w=100\text{ms}$  , single pulse \*2 Each terminal mounted on a reference land

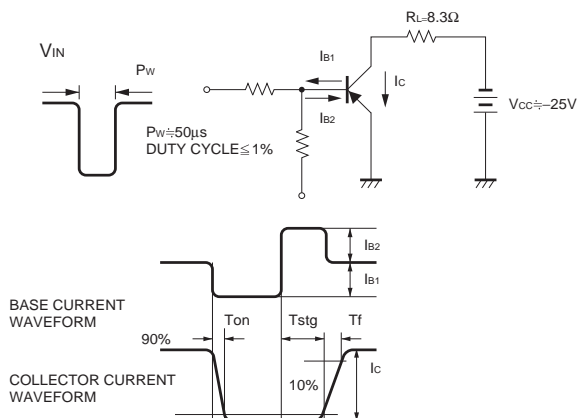
\*3 Mounted on a ceramic board (40×40×0.7mm) \*4 Mounted on a substrate \*5  $T_C=25^\circ\text{C}$

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C = -1mA$	-60	-	-	V
Collector-base breakdown voltage	$BV_{CBO}$	$I_C = -100\mu A$	-60	-	-	V
Emitter-base breakdown voltage	$BV_{EBO}$	$I_E = -100\mu A$	-6	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -40V$	-	-	-1.0	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -4V$	-	-	-1.0	$\mu A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2A, I_B = -0.2A$	-	-0.20	-0.50	V
DC current gain	$h_{FE}$	$V_{CE} = -2V, I_C = -100mA$	120	-	270	-
Transition frequency	$f_T$	$V_{CE} = -10V, I_E = 10mA$ $f = 10MHz$	-	180	-	MHz
Output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0A$ $f = 1MHz$	-	50	-	pF
Turn-on time	$t_{on}^{*1}$	$I_C = -3A$ $I_{B1} = -300mA$ $I_{B2} = 300mA$ $V_{CC} \approx -25V$	-	20	-	ns
Storage time	$t_{stg}^{*1}$		-	150	-	ns
Fall time	$t_f^{*1}$		-	20	-	ns

\*1 See switching time test circuit

●Switching time test circuit



●Electrical characteristic curves(Ta = 25°C)

Fig.1 Ground Emitter Propagation Characteristics

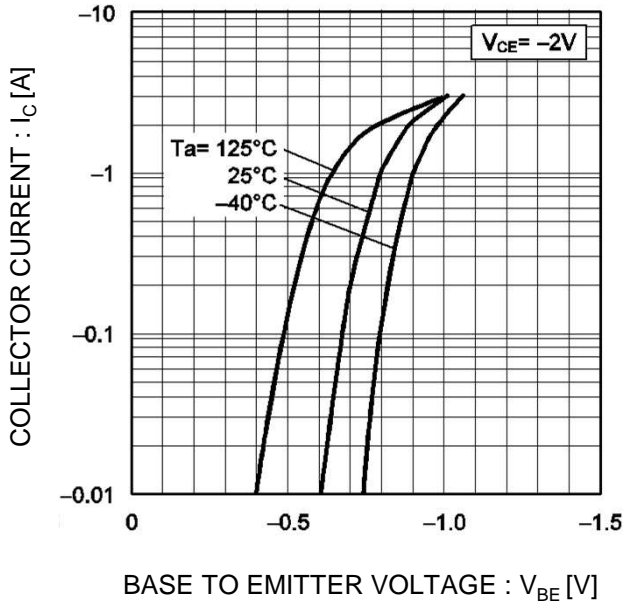


Fig.2 Typical Output Characteristics

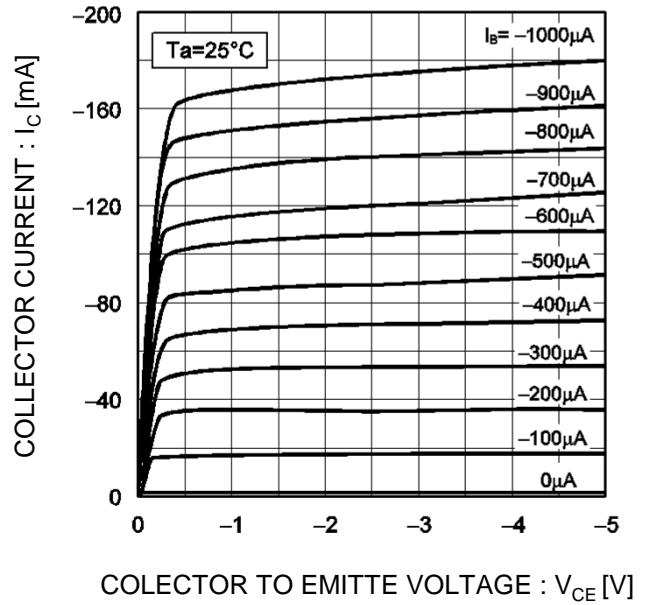


Fig.3 DC Current Gain vs. Collector Current(I)

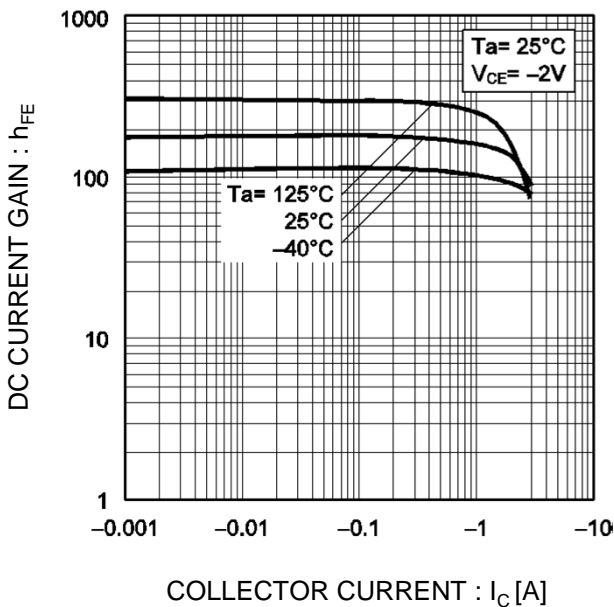
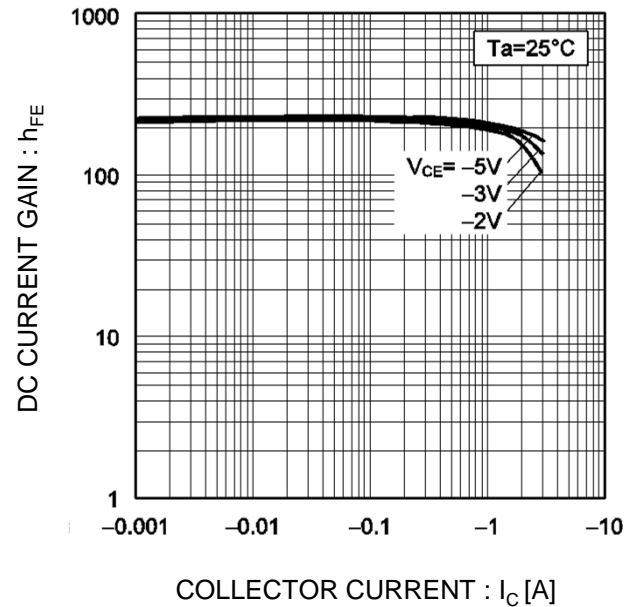


Fig.4 DC current gain vs. output current (II)



●Electrical characteristic curves(Ta = 25°C)

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

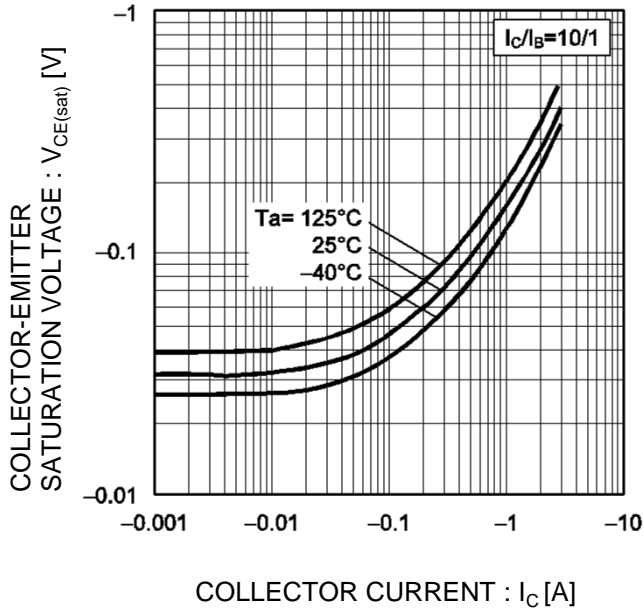


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

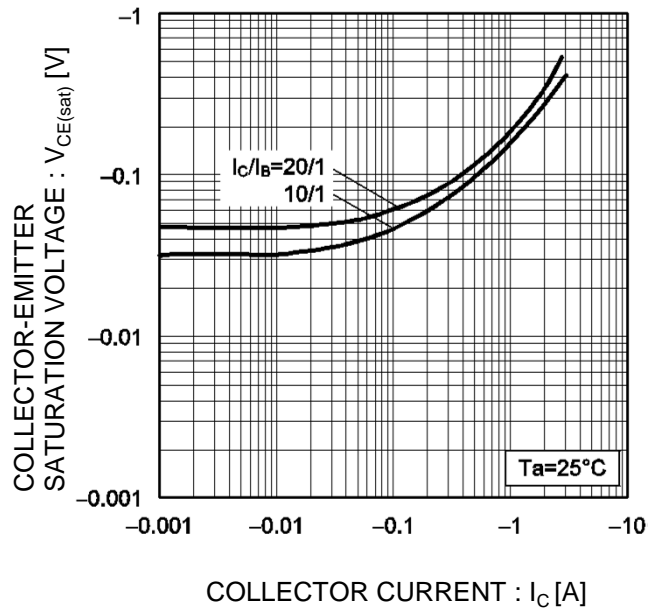


Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

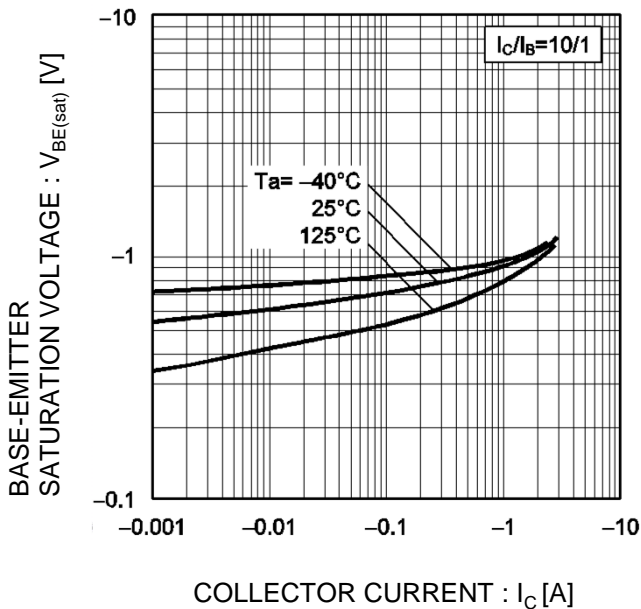
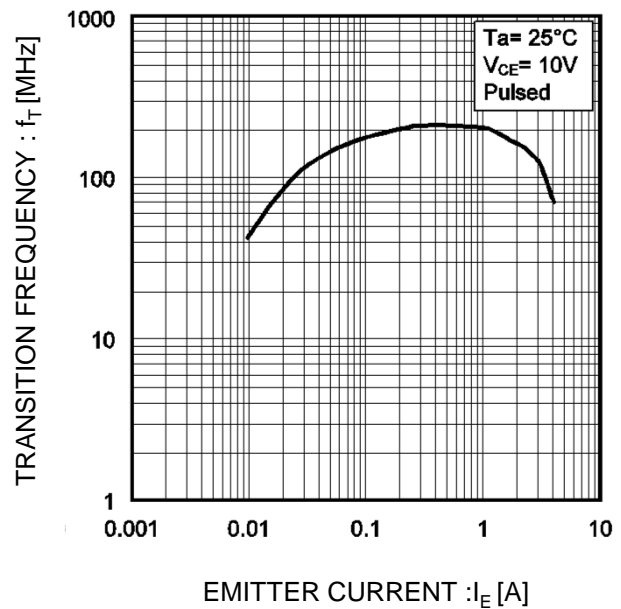
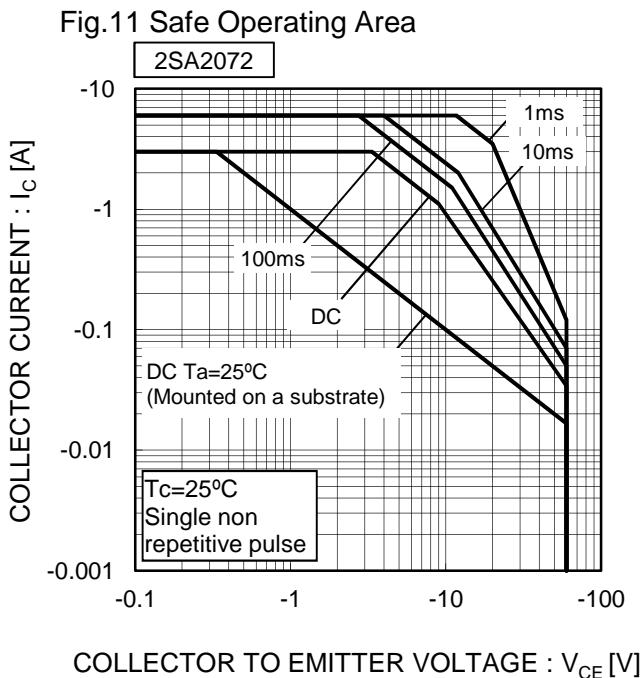
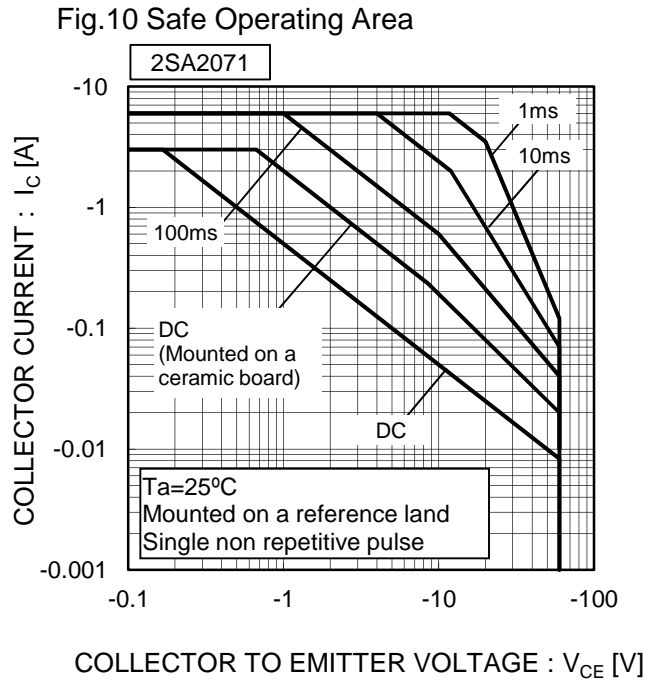
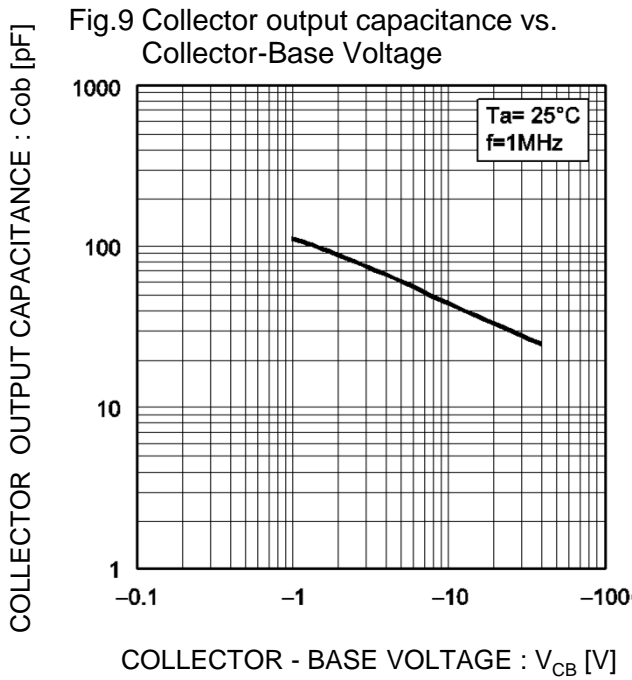


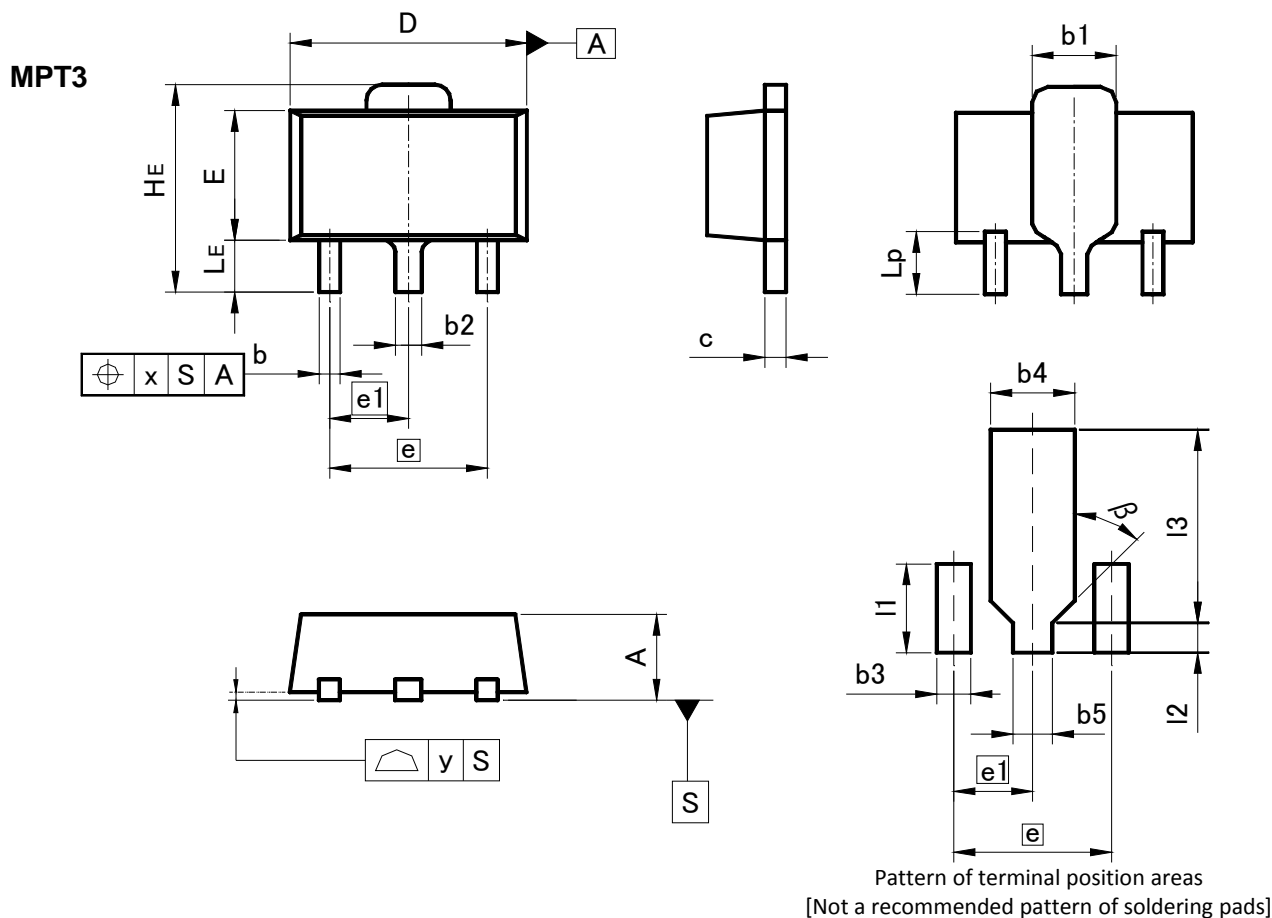
Fig.8 Gain Bandwidth Product vs. Emitter Current



●Electrical characteristic curves(Ta = 25°C)



●Dimensions (Unit : mm)



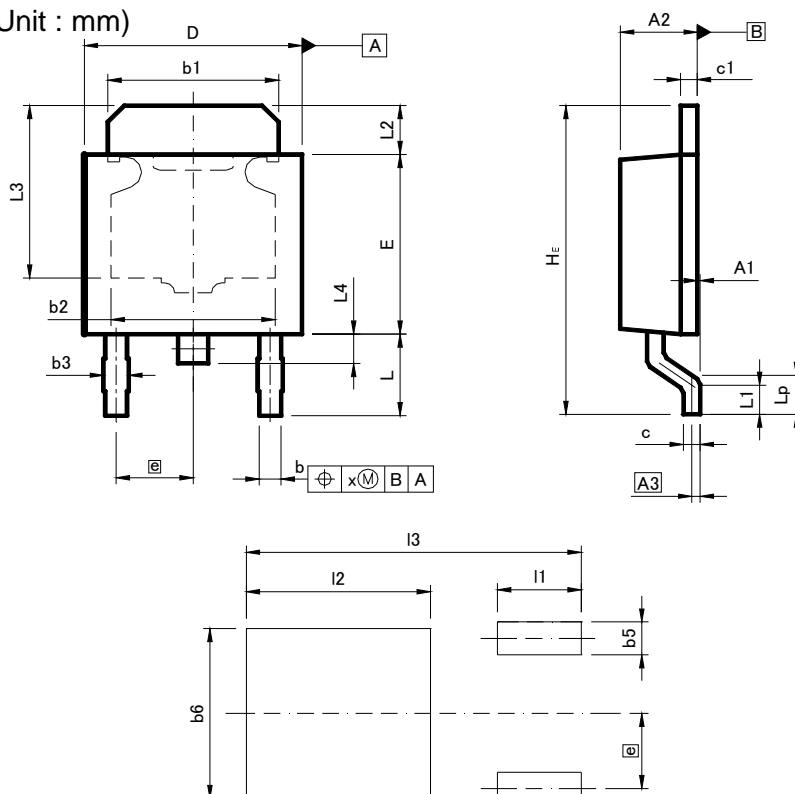
DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.40	1.50	0.055	0.059
b	0.30	0.50	0.012	0.020
b1	1.50	1.70	0.059	0.067
b2	0.40	0.60	0.016	0.024
c	0.35	0.50	0.014	0.020
D	4.40	4.70	0.173	0.185
E	2.40	2.70	0.094	0.106
e	3.00		0.118	
e1	1.50		0.059	
HE	3.70	4.30	0.146	0.169
LE	0.80	1.20	0.031	0.047
Lp	1.01	1.41	0.040	0.056
x	-	0.15	-	0.006
y	-	0.10	-	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b3	-	0.65	-	0.026
b4	-	1.70	-	0.067
b5	-	0.75	-	0.030
l1	-	1.71	-	0.067
l2	-	0.58	-	0.023
l3	-	3.72	-	0.146
β	45°		45°	

Dimension in mm / inches

●Dimensions (Unit : mm)

CPT3



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

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A1	0.00	0.15	0.000	0.006
A2	2.20	2.50	0.087	0.098
A3	0.25		0.010	
b	0.55	0.75	0.022	0.030
b1	5.00	5.30	0.197	0.209
b2	5.00		0.197	
b3	0.75		0.030	
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.30	6.70	0.248	0.264
E	5.40	5.80	0.213	0.228
e	2.30		0.091	
HE	9.00	10.00	0.354	0.394
L	2.20	2.80	0.087	0.110
L1	0.80	1.40	0.031	0.055
L2	1.20	1.80	0.047	0.071
L3	5.30		0.209	
L4	0.90		0.035	
Lp	1.00	1.60	0.039	0.063
x	-	0.25	-	0.010

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b5	-	1.00	-	0.04
b6	-	5.20	-	0.205
l1	-	2.50	-	0.098
l2	-	5.50	-	0.217
l3	-	10.00	-	0.394

Dimension in mm / inches

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