

Bipolar Transistor

(-)50 V, (-)2 A, Low VCE(sat),
(PNP)NPN Single TP/TP-FA

2SB1201/2SD1801

特長

- FBET, MBIT プロセス採用
- スイッチングタイムが速い
- 電流容量が大きくASO が広い
- 小型薄型であるためセットの小型化が容易である
- コレクタ・エミッタ飽和電圧が低い
- This is a Pb-Free Device

用途

- 電源, リレードライブ, ランプドライブ, 電装用

絶対最大定格 (Ta = 25°C)

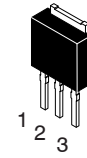
項目	記号	条件	定格値	Unit
コレクタ・ベース電圧	V _{CB0}		(-)60	V
コレクタ・エミッタ電圧	V _{CEO}		(-)50	V
エミッタ・ベース電圧	V _{EBO}		(-)6	V
コレクタ電流	I _C		(-)2	A
コレクタ電流 (パルス)	I _{CP}		(-)4	A
コレクタ損失	P _C		0.8	W
		T _c = 25°C	15	W
接合部温度	T _j		150	°C
保存周囲温度	T _{stg}		-55~+150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

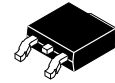
(参考記)

最大定格を超えるストレスは、デバイスにダメージを与える危険性があります。これらの定格値を超えた場合は、デバイスの機能性を損ない、ダメージが生じたり、信頼性に影響を及ぼす危険性があります。

NOTE: ()内は2SB1201 の場合を示す。

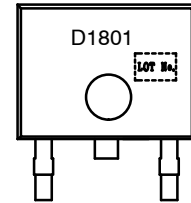
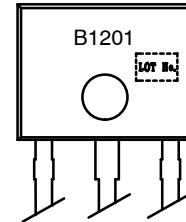


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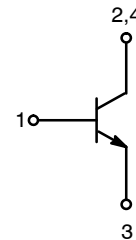
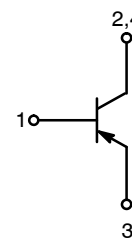


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CASE 369AH

マーキング



電氣的接続図



ORDERING INFORMATION

Device	パッケージ名	最小梱包単位†
2SB1201S-E	IPAK / TP (Pb-Free)	500 pcs / Bag
2SB1201S-TL-E	DPAK / TP-FA (Pb-Free)	700 / Tape & Reel
2SB1201T-TL-E	DPAK / TP-FA (Pb-Free)	700 / Tape & Reel
2SD1801S-TL-E	DPAK / TP-FA (Pb-Free)	700 / Tape & Reel
2SD1801S-E	IPAK / TP (Pb-Free)	500 pcs / Bag

†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.

2SB1201/2SD1801

電氣的特性 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

項目	記号	条件	定格値			Unit
			Min	Typ	Max	
コレクタしや断電流	I_{CBO}	$V_{CB} = (-)50\text{ V}, I_E = 0\text{ A}$	–	–	(–)100	nA
エミッタしや断電流	I_{EBO}	$V_{EB} = (-)4\text{ V}, I_C = 0\text{ A}$	–	–	(–)100	nA
直流電流増幅率	h_{FE1}	$V_{CE} = (-)2\text{ V}, I_C = (-)100\text{ mA}$	100※	–	560※	–
	h_{FE2}	$V_{CE} = (-)2\text{ V}, I_C = (-)1.5\text{ A}$	40	–	–	–
利得帯域幅積	f_T	$V_{CE} = (-)10\text{ V}, I_C = (-)50\text{ mA}$	–	150	–	MHz
出力容量	C_{ob}	$V_{CB} = (-)10\text{ V}, f = 1\text{ MHz}$	–	(22)12	–	pF
コレクタ・エミッタ飽和電圧	$V_{CE(sat)}$	$I_C = (-)1\text{ A}, I_B = (-)50\text{ mA}$	–	(–0.3)0.15	(–0.7)0.4	V
ベース・エミッタ飽和電圧	$V_{BE(sat)}$	$I_C = (-)1\text{ A}, I_B = (-)50\text{ mA}$	–	(–)0.9	(–)1.2	V
コレクタ・ベース降伏電圧	$V_{(BR)CBO}$	$I_C = (-)10\text{ }\mu\text{A}, I_E = 0\text{ A}$	(–)60	–	–	V
コレクタ・エミッタ降伏電圧	$V_{(BR)CEO}$	$I_C = (-)1\text{ mA}, R_{BE} = \infty$	(–)50	–	–	V
エミッタ・ベース降伏電圧	$V_{(BR)EBO}$	$I_E = (-)10\text{ }\mu\text{A}, I_C = 0\text{ A}$	(–)6	–	–	V
ターンオン時間	t_{on}	指定回路において	–	60	–	ns
蓄積時間	t_{stg}		–	(450)550	–	ns
下降時間	t_f		–	30	–	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

(参考訳)

製品パラメータは、特別な記述が無い限り、記載されたテスト条件に対する電氣的特性で示しています。異なる条件下で製品動作を行った時には、電氣的特性で示している特性を得られない場合があります。

NOTE: ()内は 2SB121 の場合を示す。

※ 2SB1201 / 2SD1801 は 100 mA h_{FE} により次のように分類している。

Table 1.

ランク	R	S	T	U
h_{FE}	100 ~ 200	140 ~ 280	200 ~ 400	280 ~ 560

スイッチングタイム測定回路図

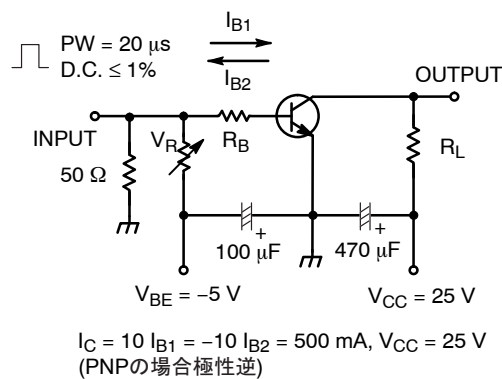


図 1. スwitchingタイム測定回路図

2SB1201/2SD1801

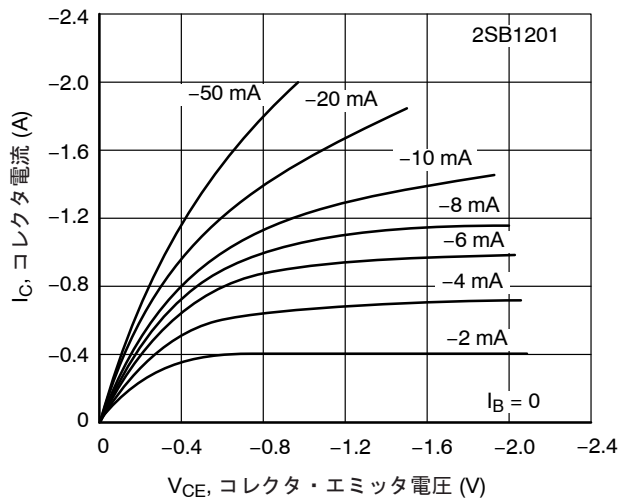


図 2. $I_C - V_{CE}$

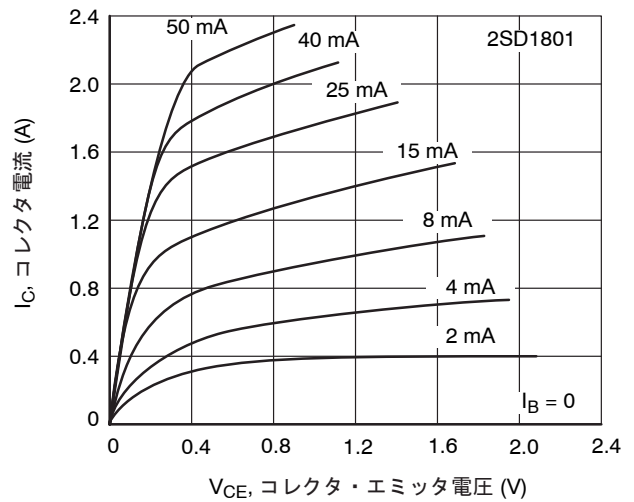


図 3. $I_C - V_{CE}$

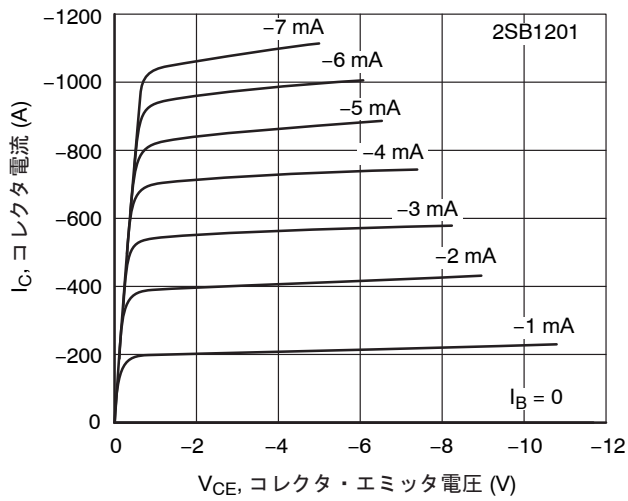


図 4. $I_C - V_{CE}$

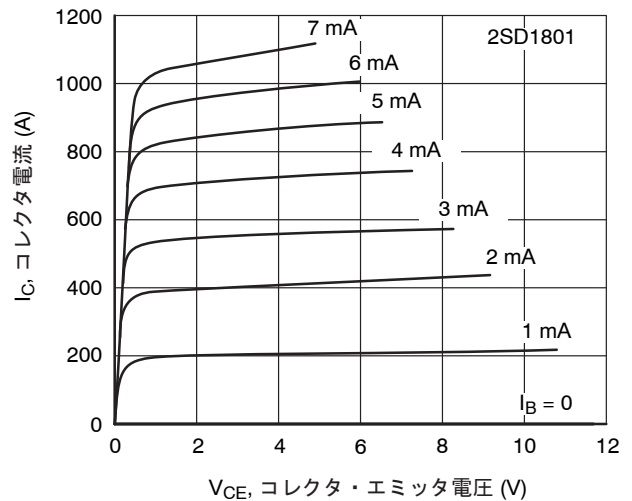


図 5. $I_C - V_{CE}$

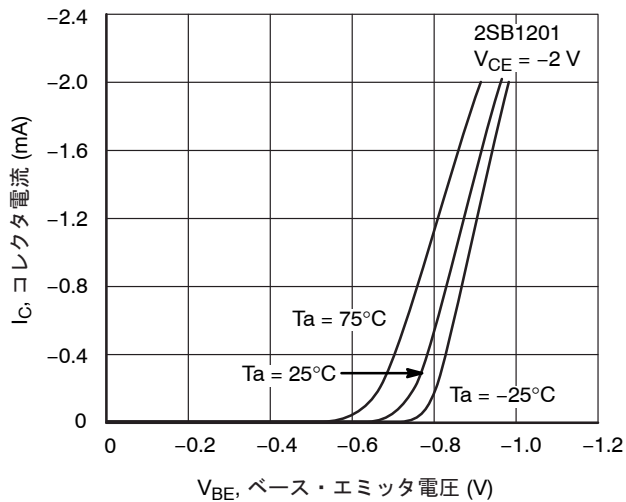


図 6. $I_C - V_{BE}$

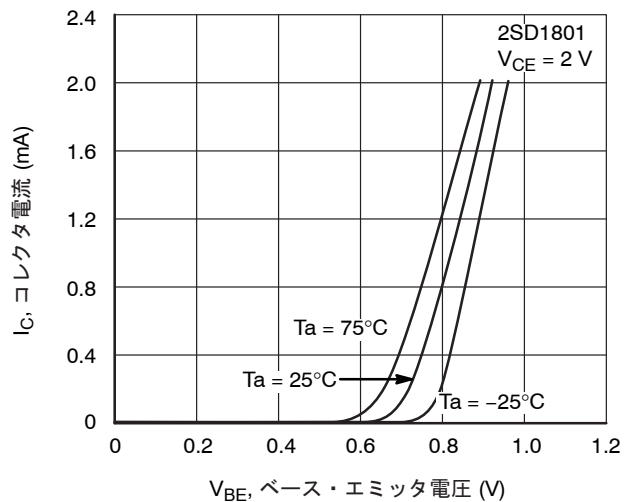


図 7. $I_C - V_{BE}$

2SB1201/2SD1801

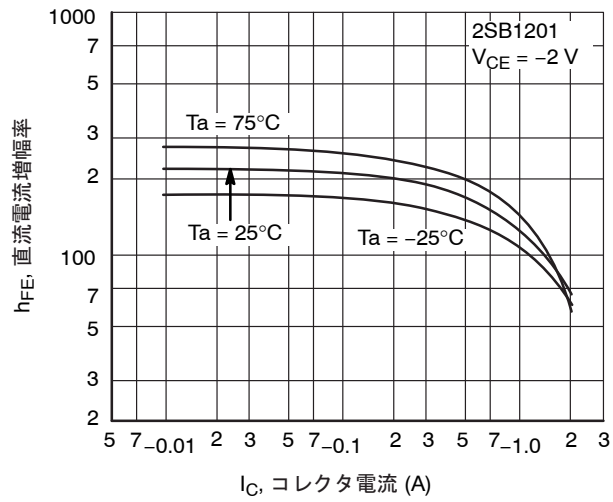


図 8. $h_{FE} - I_C$

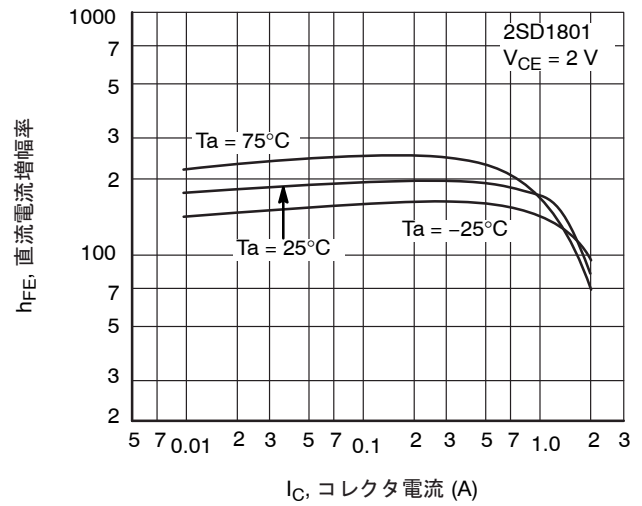


図 9. $h_{FE} - I_C$

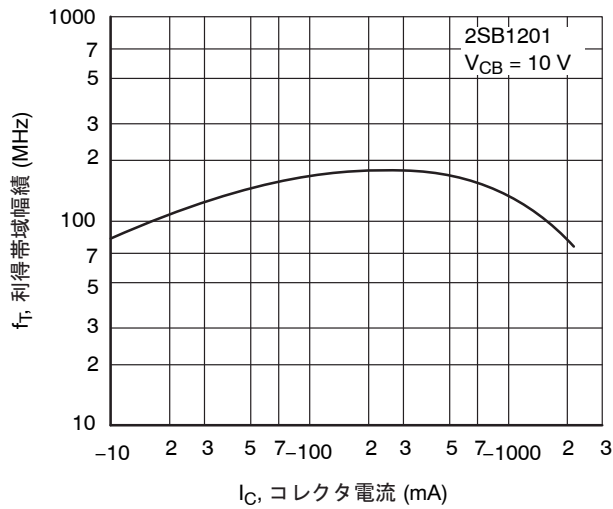


図 10. $f_T - I_C$

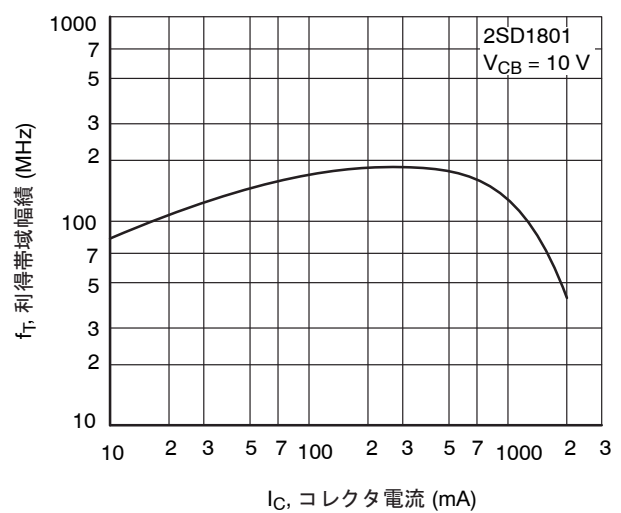


図 11. $f_T - I_C$

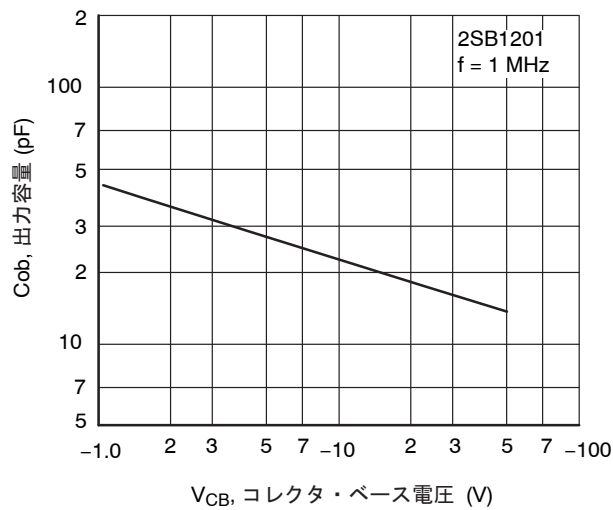


図 12. $C_{ob} - V_{CB}$

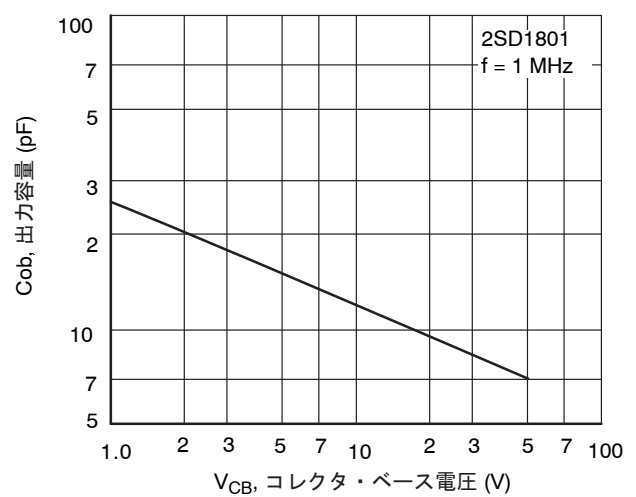


図 13. $C_{ob} - V_{CB}$

2SB1201/2SD1801

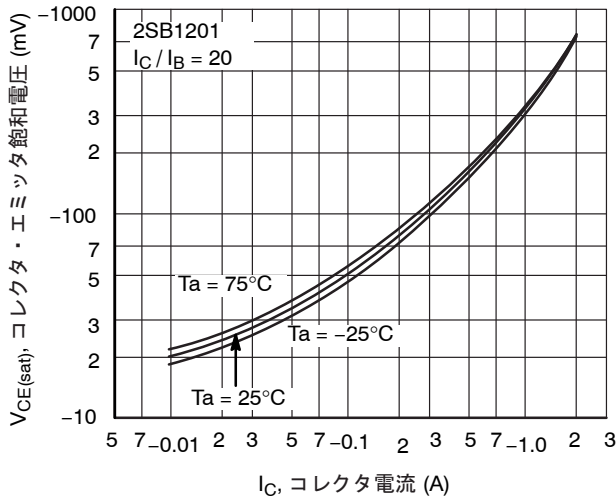


図 14. $V_{CE(sat)} - I_C$

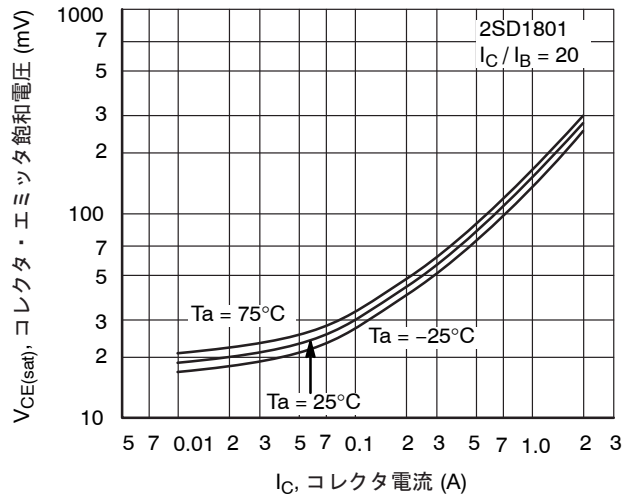


図 15. $V_{CE(sat)} - I_C$

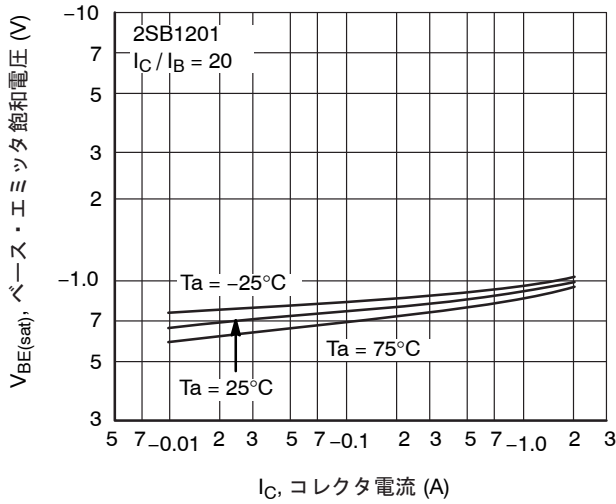


図 16. $V_{BE(sat)} - I_C$

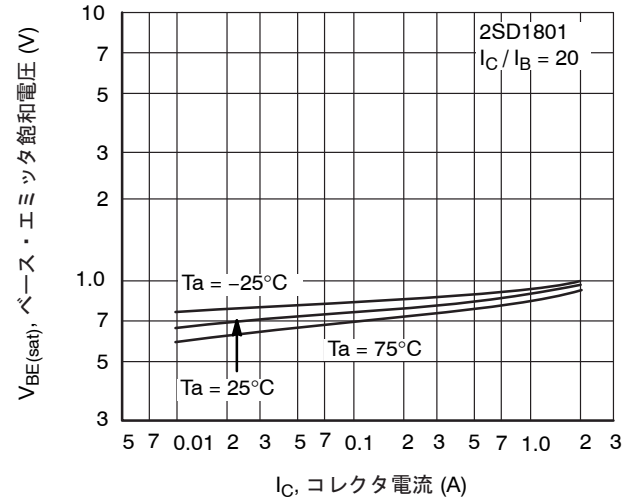


図 17. $V_{BE(sat)} - I_C$

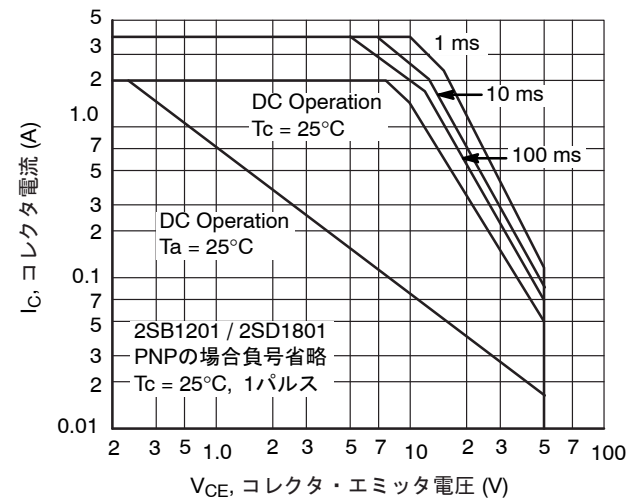


図 18. ASO

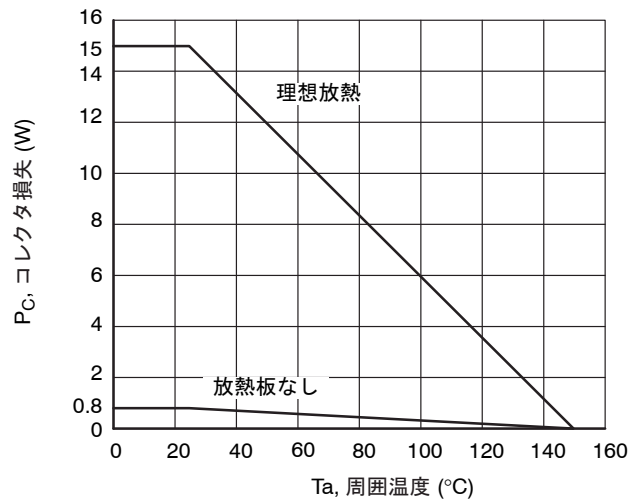
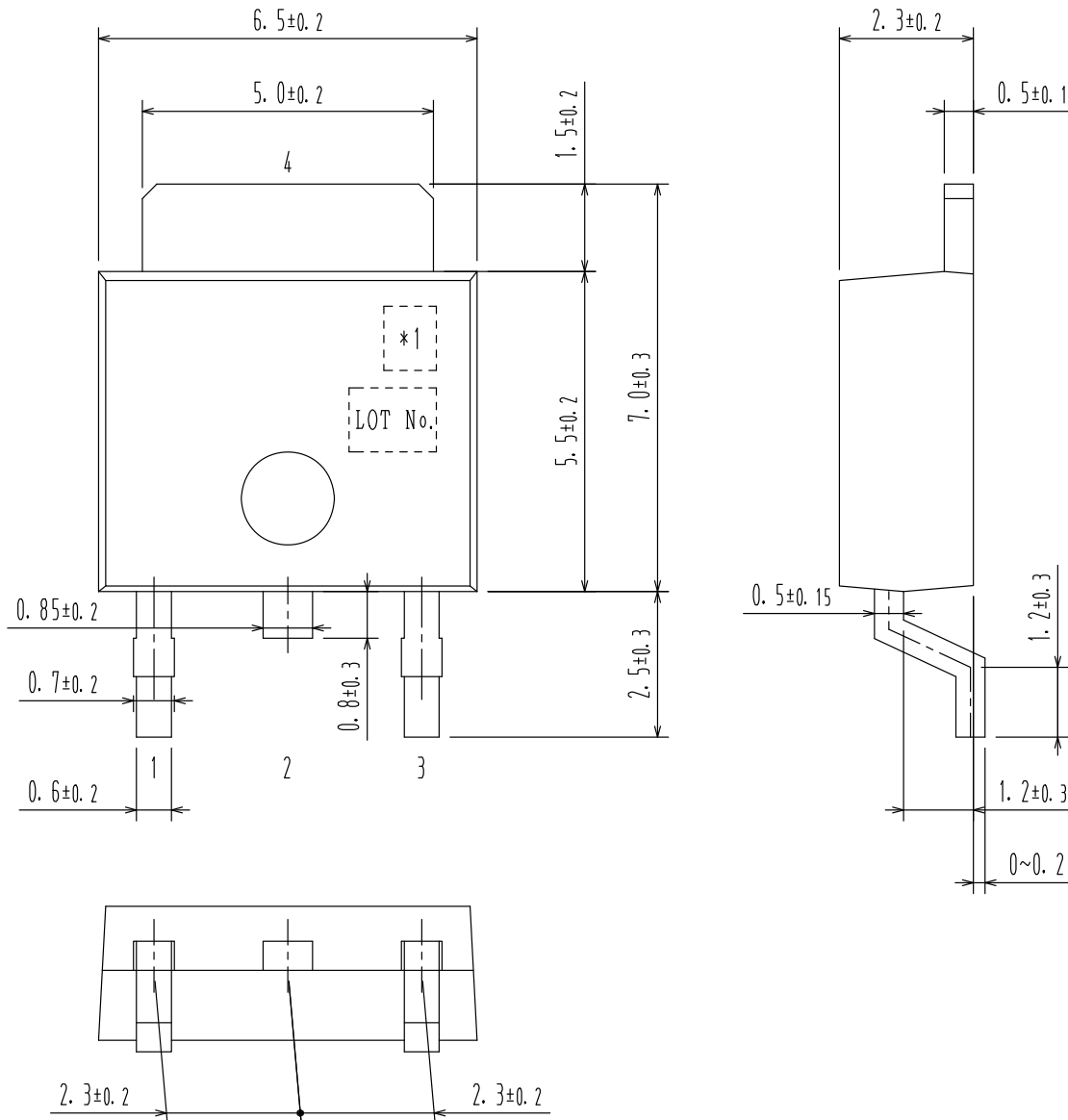


図 19. $P_C - T_a$

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Pin 2 is idle pin with electrical designation only carried.

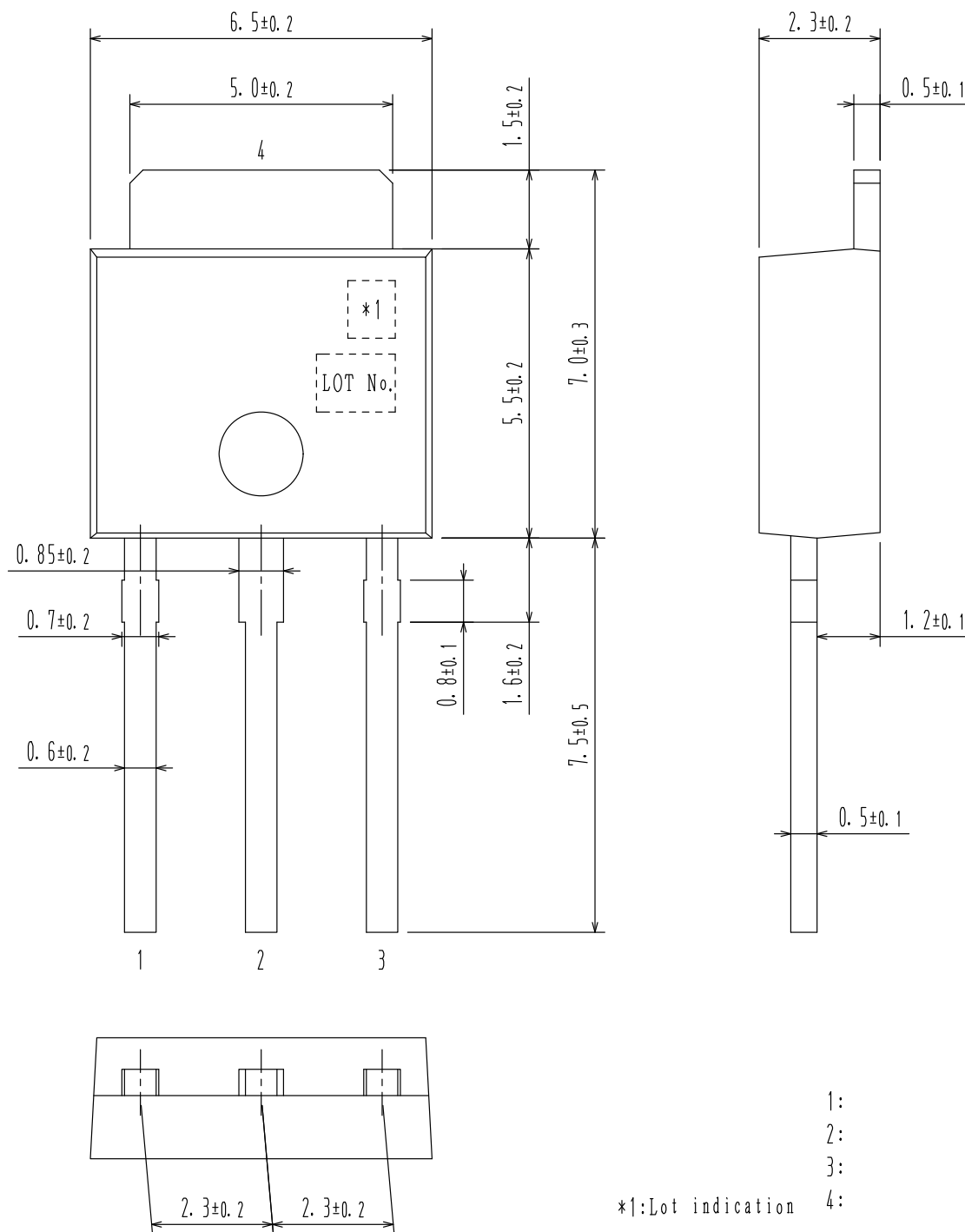
	1:
	2:
	3:
*1:Lot indication	4:

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