

Bipolar Transistor

60 V, 3 A, Low $V_{CE(sat)}$, NPN Single
TP/TP-FA

2SC6097

用途

- FBET, MBIT プロセス採用
- コレクタ・エミッタ飽和電圧が低い
- 許容損失が大きい
- 電流容量が大きい
- スイッチングタイムが速い

用途

- DC / DC コンバータ, リレードライブ, ランプドライブ, モータドライブ, インバータ

絶対最大定格 ABSOLUTE MAXIMUM RATINGS (at $T_a = 25^\circ\text{C}$)

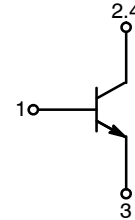
項目	記号	条件	定格値	Unit
コレクタ・ベース電圧	V_{CBO}	–	100	V
コレクタ・エミッタ電圧	V_{CES}	–	100	V
コレクタ・エミッタ電圧	V_{CEO}	–	60	V
エミッタ・ベース電圧	V_{EBO}	–	6.5	V
コレクタ電流	I_C	–	3	A
コレクタ電流 (パルス)	I_{CP}	–	5	A
ベース電流	I_B	–	600	mA
コレクタ損失	P_C	–	0.8	W
		$T_C = 25^\circ\text{C}$	15	W
接合部温度	T_j	–	150	$^\circ\text{C}$
保存周囲温度	T_{stg}	–	– 55 to +150	$^\circ\text{C}$

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.

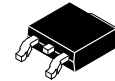
(参考訳)

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。

電気の接続図

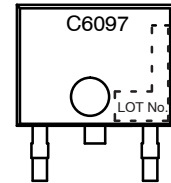
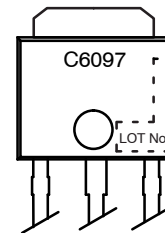


IPAK / TP
CASE 369AJ



DPAK / TP-FA
CASE 369AH

MARKING DIAGRAM



ORDERING INFORMATION

Device	Package	Shipping [†]
2SC6097-E	SC-64, TO-251	500 / Bulk Bag
2SC6097-TL-E	SC-63, TO-252	700 / Tape & Reel

[†]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.

電氣的特性 ELECTRICAL CHARACTERISTICS (at $T_a = 25^\circ\text{C}$)

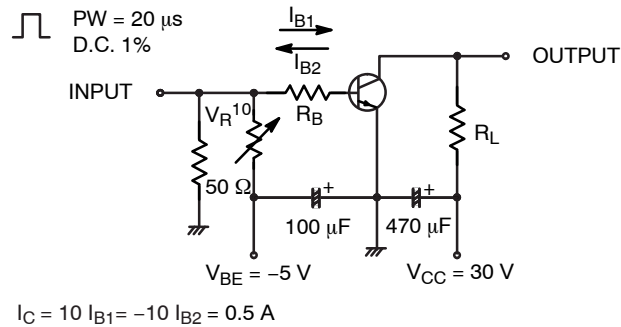
項目	記号	条件	定格値			Unit
			Min	Typ	Max	
コレクタシャ断電流	I_{CBO}	$V_{CB} = 50\text{ V}, I_E = 0\text{ A}$	–	–	1	μA
エミッタシャ断電流	I_{EBO}	$V_{EB} = 4\text{ V}, I_C = 0\text{ A}$	–	–	1	μA
直流電流増幅率	h_{FE}	$V_{CE} = 2\text{ V}, I_C = 100\text{ mA}$	300	–	600	
利得帯域幅積	f_T	$V_{CE} = 10\text{ V}, I_C = 500\text{ mA}$	–	390	–	MHz
出力容量	C_{ob}	$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	–	18	–	pF
コレクタ・エミッタ飽和電圧	$V_{CE(sat)1}$	$I_C = 1\text{ A}, I_B = 50\text{ mA}$	–	100	150	mV
	$V_{CE(sat)2}$	$I_C = 1\text{ A}, I_B = 100\text{ mA}$	–	90	135	mV
ベース・エミッタ飽和電圧	$V_{BE(sat)}$	$I_C = 1\text{ A}, I_B = 100\text{ mA}$	–	0.84	1.2	V
コレクタ・ベース降伏電圧	$V_{(BR)CBO}$	$I_C = 10\text{ }\mu\text{A}, I_E = 0\text{ A}$	100	–	–	V
コレクタ・エミッタ降伏電圧	$V_{(BR)CES}$	$I_C = 100\text{ }\mu\text{A}, R_{BE} = 0\text{ }\Omega$	100	–	–	V
コレクタ・エミッタ降伏電圧	$V_{(BR)CEO}$	$I_C = 1\text{ mA}, R_{BE} = \infty$	60	–	–	V
エミッタ・ベース降伏電圧	$V_{(BR)EBO}$	$I_E = 10\text{ }\mu\text{A}, I_C = 0\text{ A}$	6.5	–	–	V
ターンオン時間	t_{on}	指定回路において	–	35	–	ns
蓄積時間	t_{stg}		–	680	–	ns
下降時間	t_f		–	24	–	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.

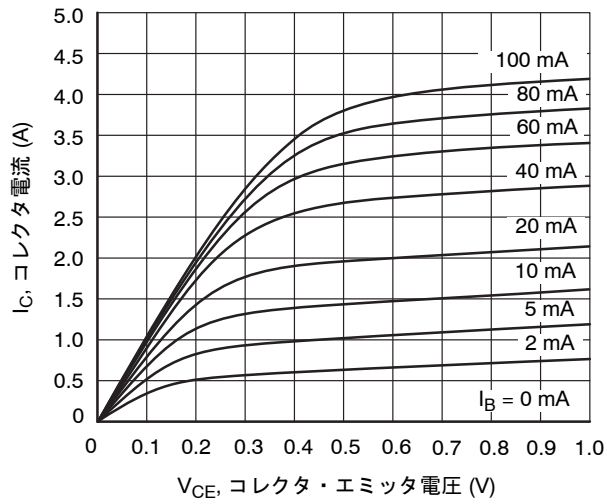
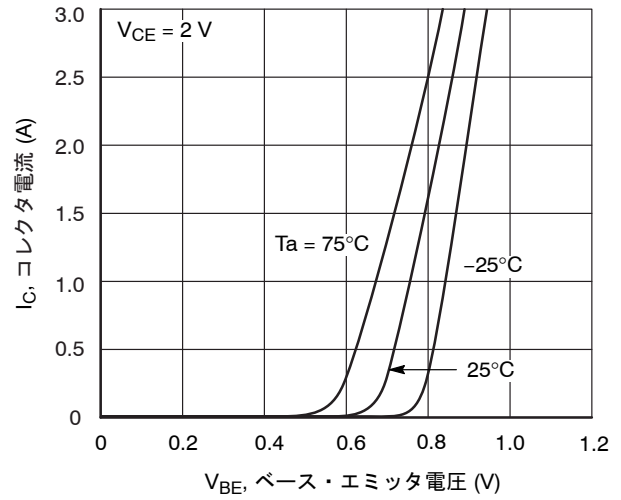
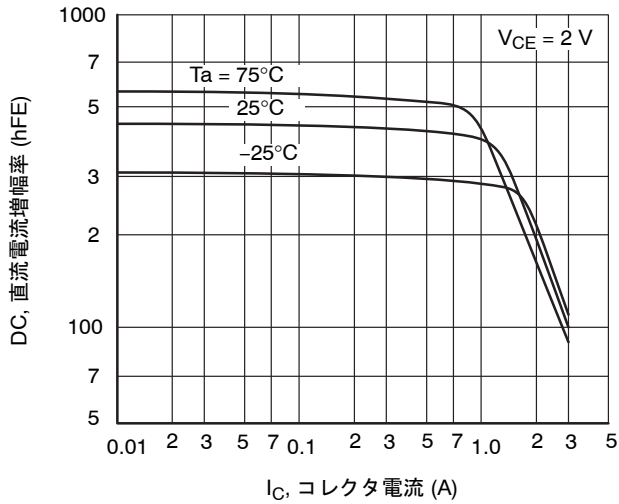
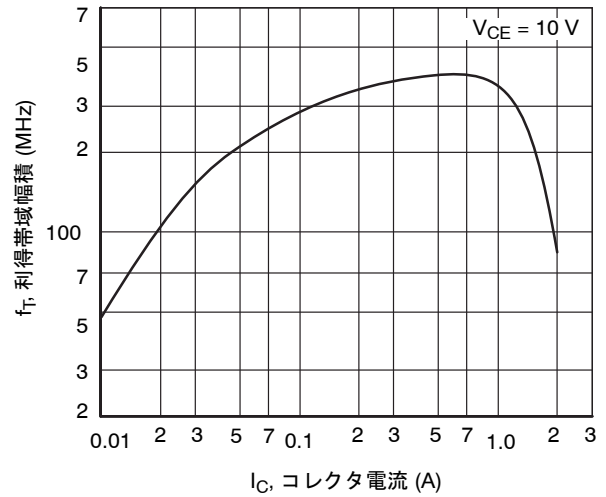
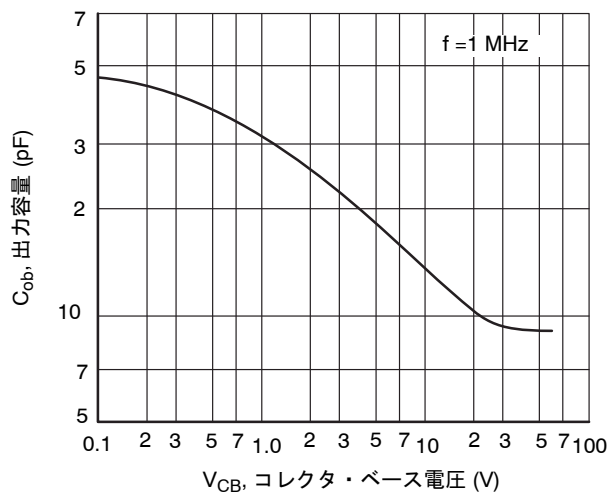
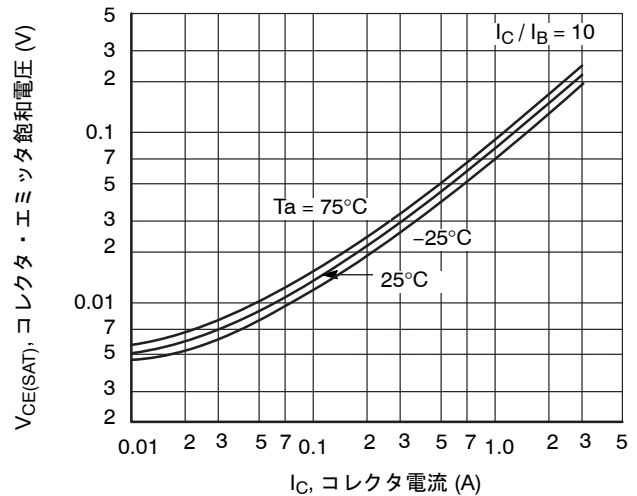
(参考図)

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。

スイッチングタイム測定回路図



TYPICAL CHARACTERISTICS

図 1. $I_C - V_{CE}$ 図 2. $I_C - V_{BE}$ 図 3. $H_{FE} - I_C$ 図 4. $f_T - I_C$ 図 5. $C_{ob} - V_{CB}$ 図 6. $V_{CE(sat)} - I_C$

TYPICAL CHARACTERISTICS (CONTINUED)

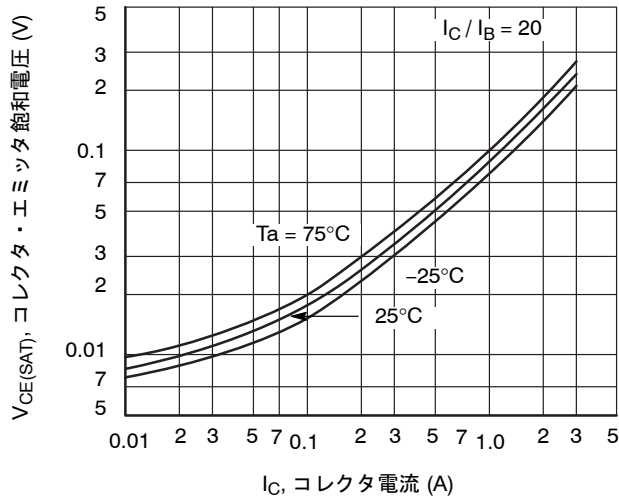
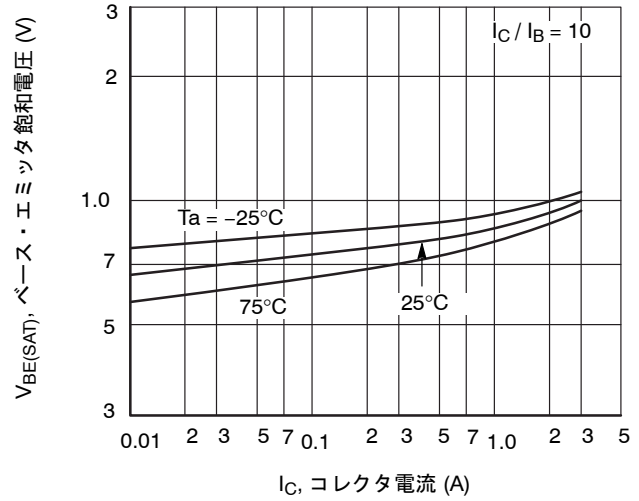
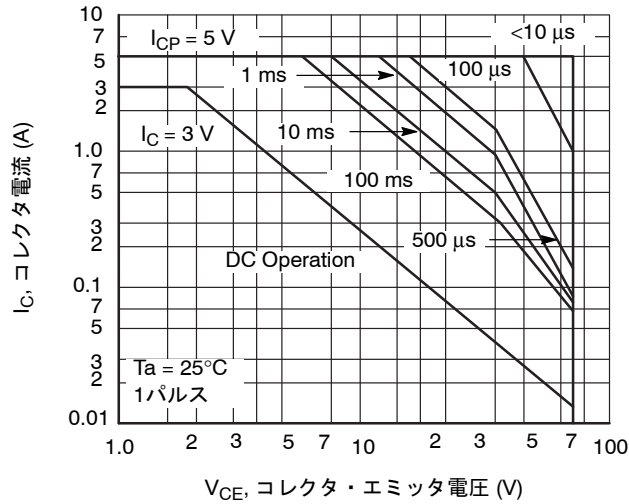
図 7. $V_{CE(sat)} - I_C$ 図 8. $V_{BE(sat)} - I_C$ 

図 9. ASO

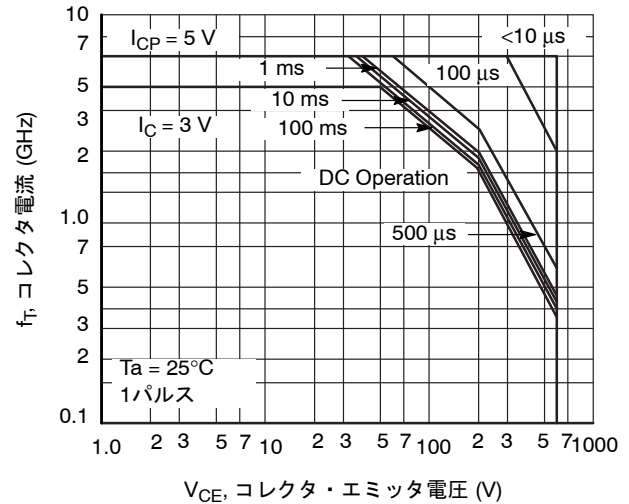
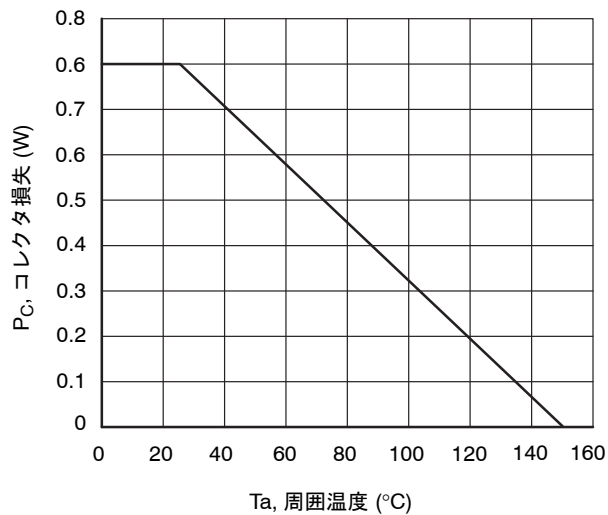
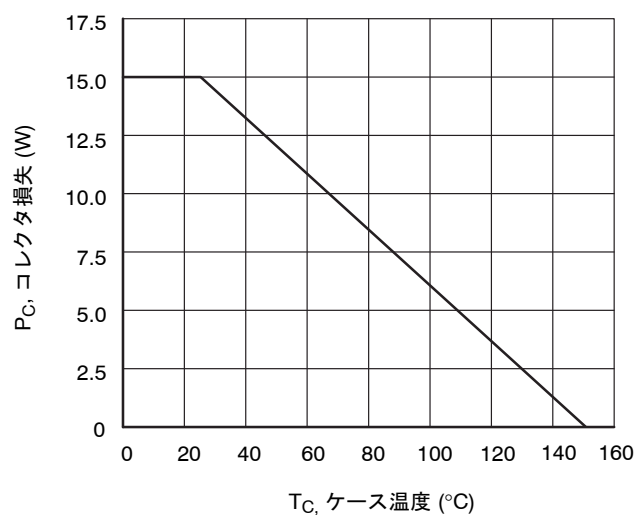
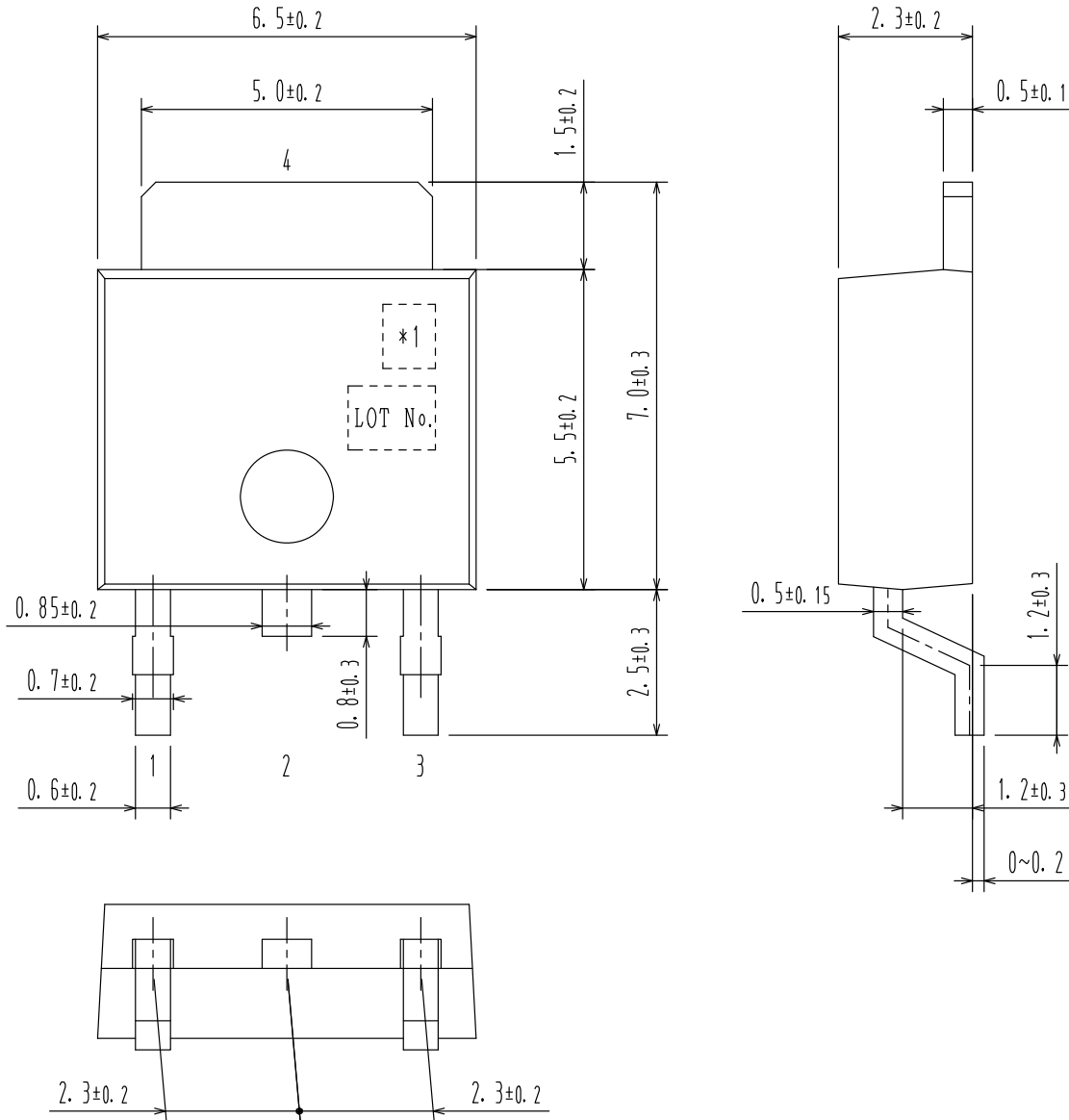


図 10. ASO

図 11. $P_C - T_a$ 図 12. $P_C - T_C$

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ISSUE O

DATE 30 JAN 2012



Pin 2 is idle pin with electrical
designation only carried.

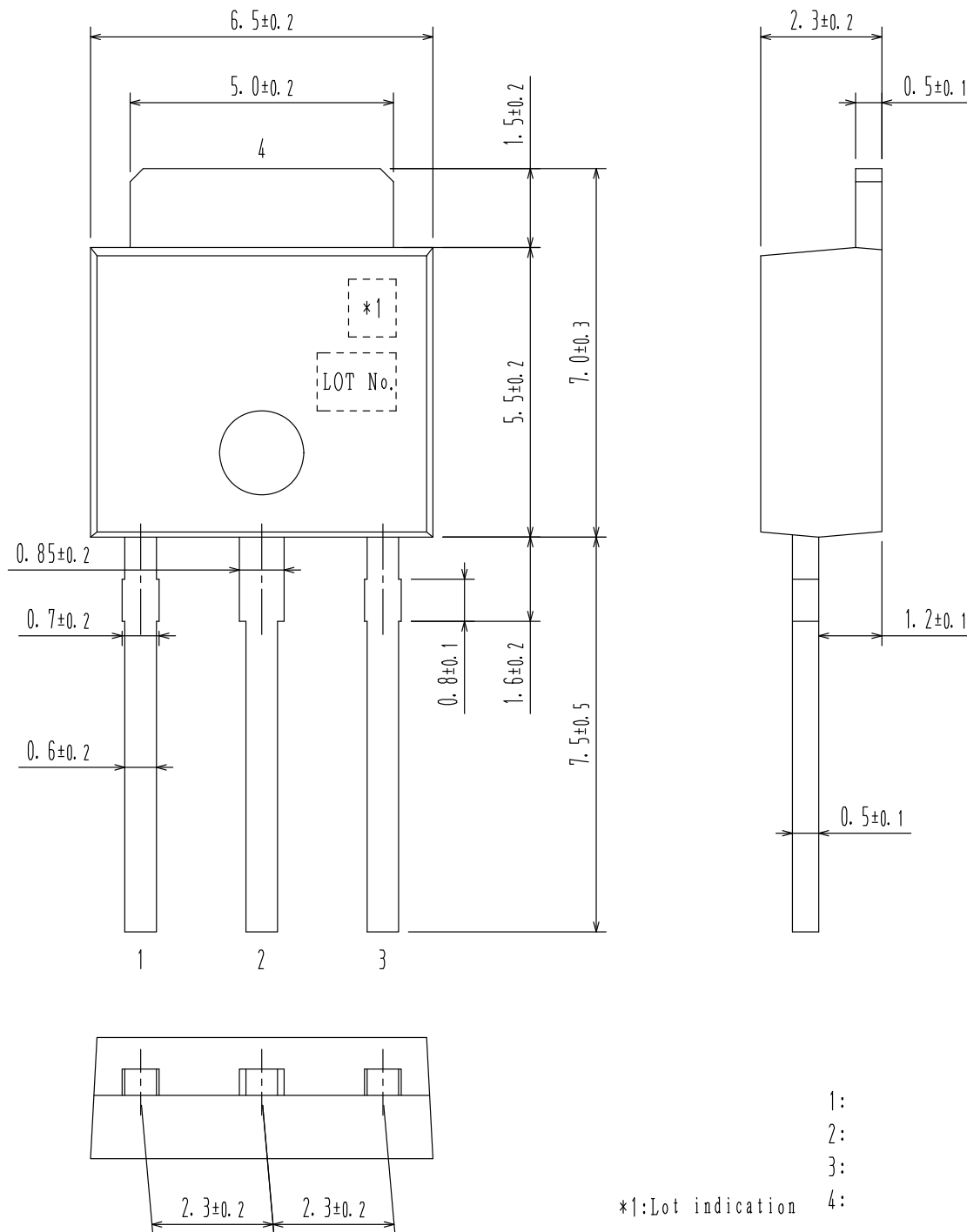
1:
2:
3:
*1: Lot indication 4:

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1:
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*1: Lot indication

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