

Bipolar Transistor

10 V, 3 A, Low $V_{CE(sat)}$,
NPN Single PCP

2SD1620

特長

- $V_{CE(sat)}$ が小さいため消費電力が少なく発光回数が改善できる
- 電流量が大きく破壊に強い
- h_{FE} リニアリティが低電流から高電流まで優れている
- 超小型でハイブリッド IC 用として高密度化、小型化が容易である
- Pb-Free

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

項目	記号	条件	定格値	Unit
コレクタ・ベース電圧	V_{CBO}		30	V
コレクタ・エミッタ電圧	V_{CEX}		20	V
コレクタ・エミッタ電圧	V_{CEO}		10	V
エミッタ・ベース電圧	V_{EBO}		6	V
コレクタ電流	I_C		3	A
コレクタ電流 (パルス)	I_{CP}		5	A
コレクタ損失	P_C		500	mW
		セラミック基板 (250 mm ² x 0.8 mm) 装着時	1.3	W
接合部温度	T_j		150	°C
保存周囲温度	T_{stg}		-55~+150	°C

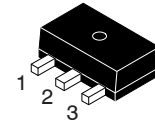
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

(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。

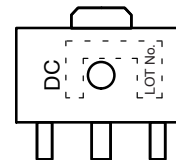
電気的特性 ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

項目	記号	条件	Min	Typ	Max	Unit
コレクタしゃ断電流	I_{CBO}	$V_{CB} = 20\text{ V}, I_E = 0\text{ A}$	—	—	100	nA
エミッタしゃ断電流	I_{EBO}	$V_{EB} = 4\text{ V}, I_C = 0\text{ A}$	—	—	100	nA
直流電流増幅率	h_{FE}	$V_{CE} = 2\text{ V}, I_C = 3\text{ A}$	140	210	—	
利得帯域幅積	f_T	$V_{CE} = 10\text{ V}, I_C = 50\text{ mA}$	—	200	—	MHz
出力容量	C_{ob}	$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$	—	30	—	pF
コレクタ・エミッタ飽和電圧	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 60\text{ mA}$	—	0.3	0.4	V
コレクタ・ベース降伏電圧	$V_{(BR)CBO}$	$I_C = 10\text{ }\mu\text{A}, I_E = 0\text{ A}$	30	—	—	V
コレクタ・エミッタ降伏電圧	$V_{(BR)CEX}$	$I_C = 1\text{ mA}, R_{BE} = 3\text{ V}$	20	—	—	V

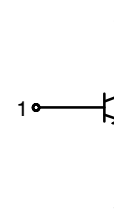


SOT-89 / PCP-1
CASE 419AU

マーキング



電気的接続図



ORDERING INFORMATION

Device	パッケージ名	Shipping [†]
2SD1620-TD-E	PCP (Pb-Free)	1000 / 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](#).

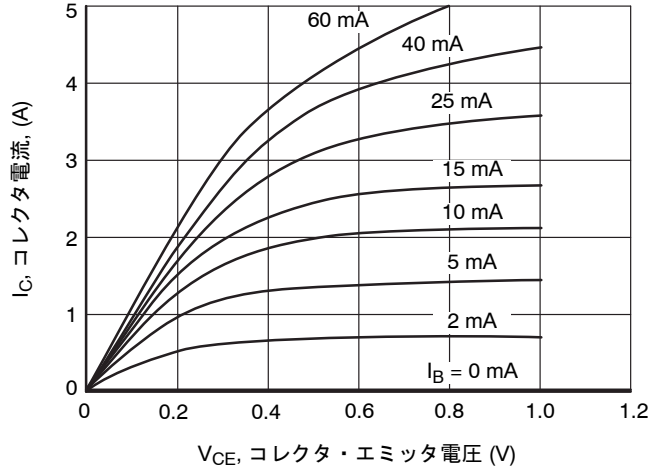
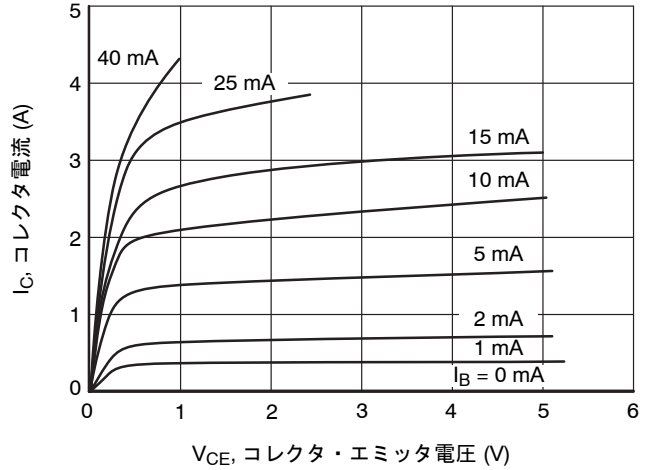
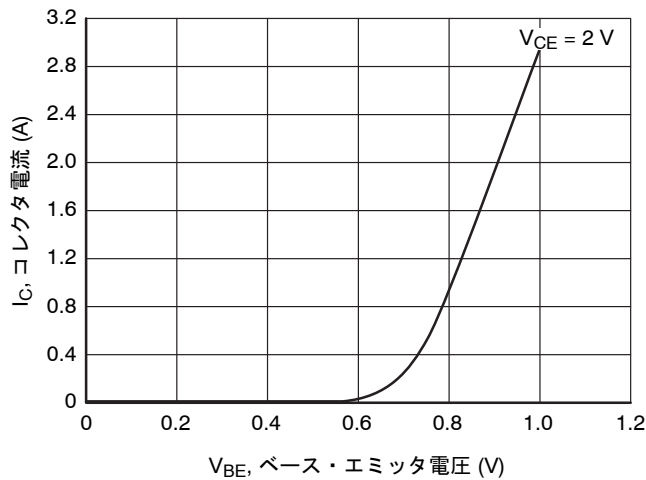
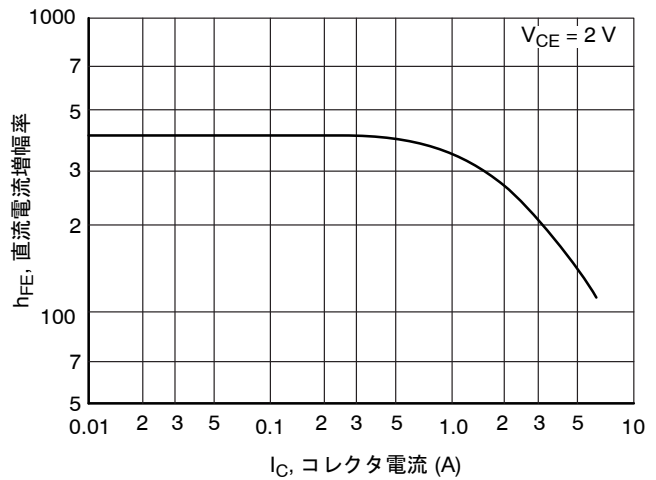
電気的特性 ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

項目	記号	条件	Min	Typ	Max	Unit
コレクタ・エミッタ降伏電圧	$V_{(BR)CEO}$	$I_C = 1\text{ mA}$, $R_{BE} = \infty$	10	—	—	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

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.

(参考記)

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気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、電気的特性で示している特性を得られない場合があります。

図 1. $I_C - V_{CE}$ 図 2. $I_C - V_{CE}$ 図 3. $I_C - V_{BE}$ 図 4. $h_{FE} - I_C$

2SD1620

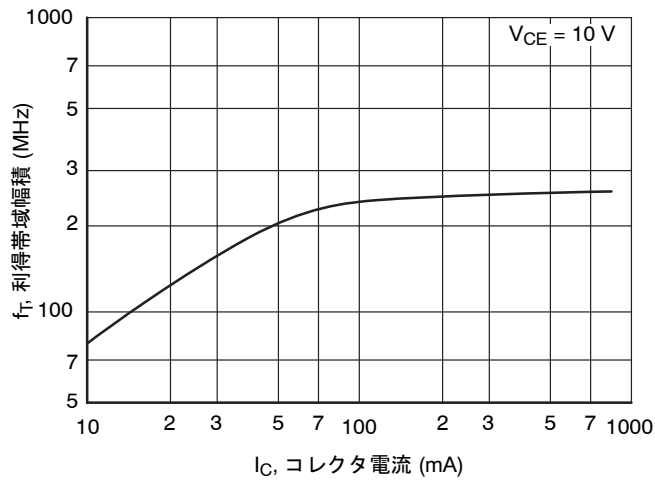


図 5. $f_T - I_C$

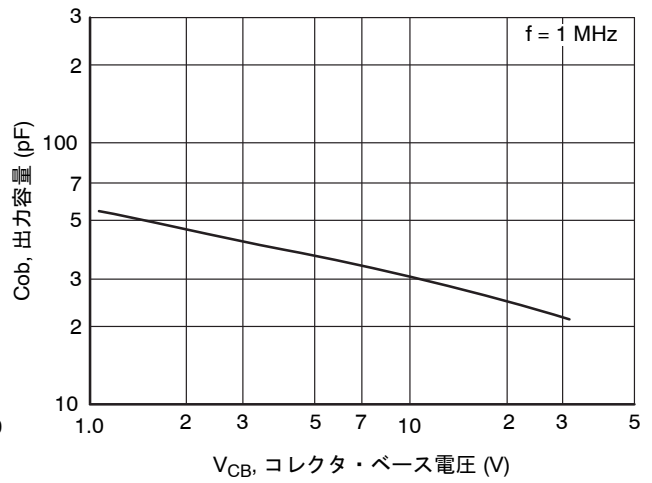


図 6. $C_{ob} - V_{CB}$

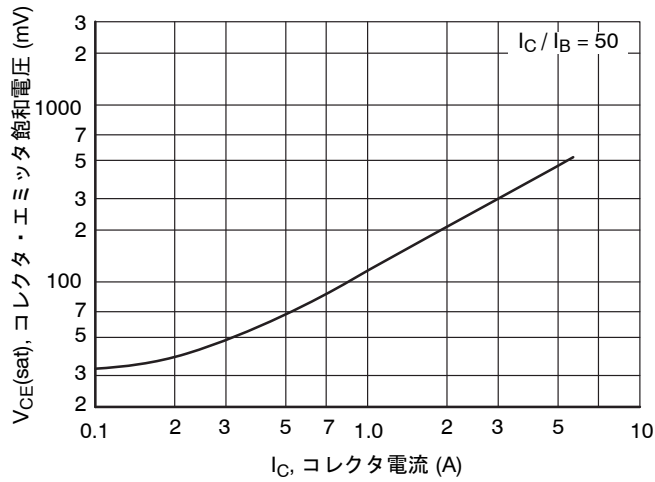


図 7. $V_{CE(sat)} - I_C$

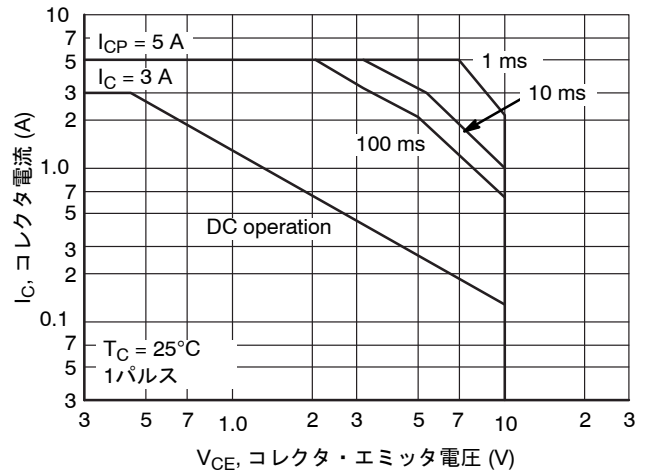


図 8. ASO

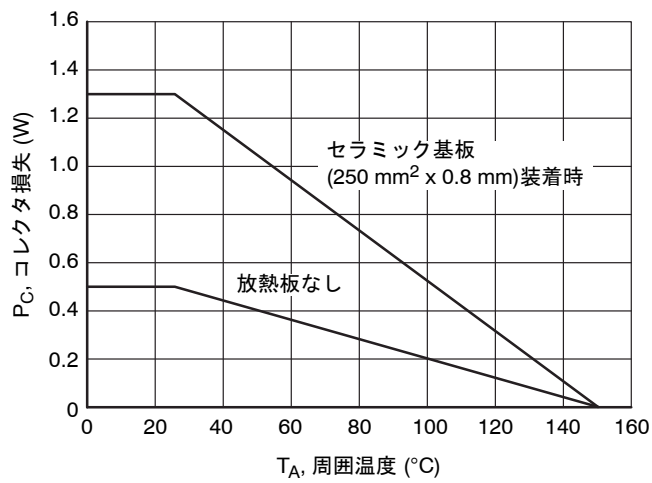
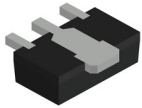
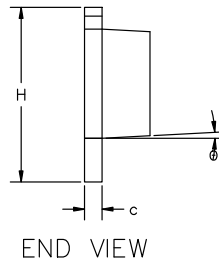
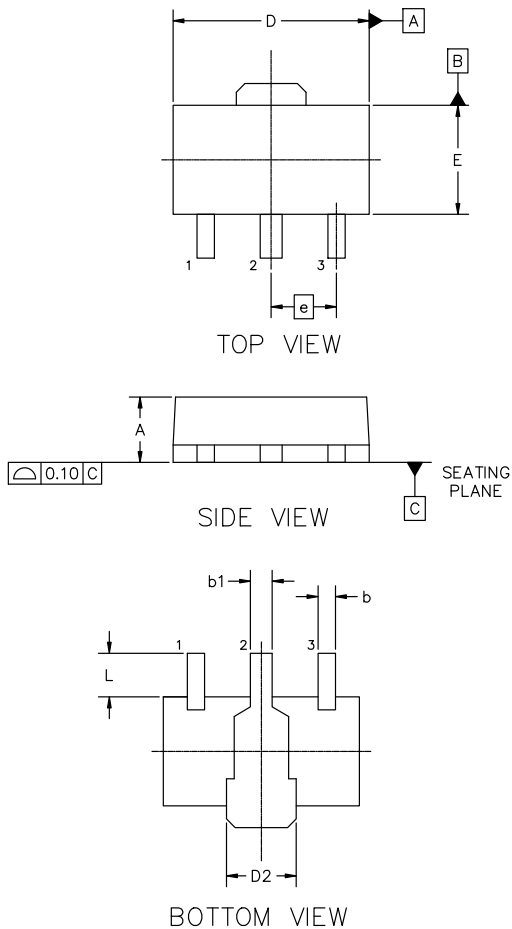


図 9. $P_C - T_A$



SOT-89 4.50x2.50x1.50 1.50P
CASE 419AU
ISSUE A

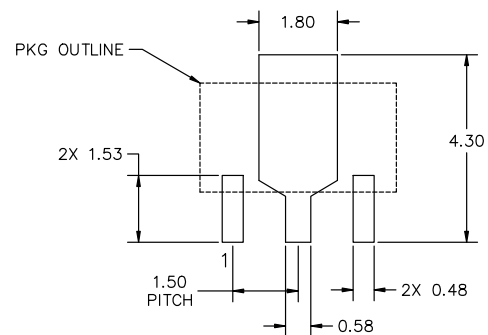
DATE 21 MAY 2025



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS INCLUDES LEAD FINISH.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

MILLIMETERS			
DIM	MIN	NOM	MAX
A	1.40	1.50	1.60
b	0.35	0.40	0.48
b1	0.40	0.50	0.55
c	0.37	0.40	0.43
D	4.40	4.50	4.60
D2	1.40	1.60	1.80
E	2.40	2.50	2.60
e	1.50 BSC		
H	3.80	4.00	4.20
L	0.80	1.00	1.20
θ	0°	---	3°



RECOMMENDED MOUNTING FOOTPRINT

*For additional information on our Pb-Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERM/D.

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DESCRIPTION:	SOT-89 4.50x2.50x1.50 1.50P	PAGE 1 OF 1

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