Bipolar Transistor

20 V, 5 A, Low $V_{CE(sat)}$, NPN Single TP/TP−FA

2SD1805

DPAK / TP−FA
CASE 369AH

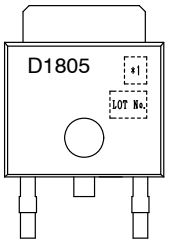
特長

- 飽和電圧が低い
- 電流容量が大きい
- スイッチングタイムが速い
- 小型薄型であるため、セットの小型化が容易である
- This is a Pb−Free Device

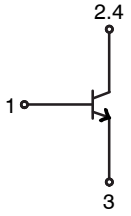
用途

- ストロボ
- 電源
- リレードライブ
- ランプドライブ

製品と外形に伴う情報



電気的接続図



絶対最大定格 ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

記号	項目		定格値	Unit
V_{CBO}	コレクタ・ベース電圧		60	V
V_{CEO}	コレクタ・エミッタ電圧		20	V
V_{EBO}	エミッタ・ベース電圧		6	V
I_C	コレクタ電流		5	A
I_{CP}	コレクタ電流（ パルス）		8	A
P_C	コレクタ損失		1	W
	コレクタ損失	T_C = 25°C	15	W
Tj	接合部温度		150	°C
Tstg	保存周囲温度		−55 to +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、信頼性に影響を及ぼす危険性があります。

ORDERING INFORMATION

See detailed ordering and shipping information on page 5 of this data sheet.

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電気的特性 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

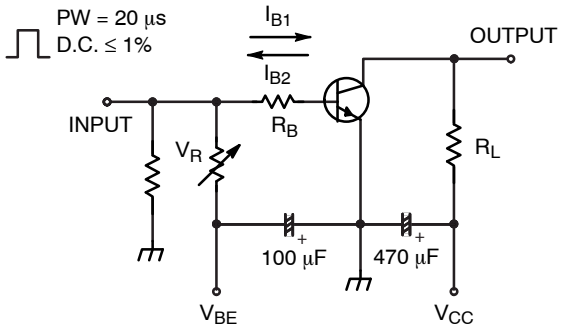
項目	記号	条件	Min	Typ	Max	Unit
コレクタしゃ断電流	I_{CBO}	V_{CB} = 50 V, I_E = 0 A	–	–	100	nA
エミッタしゃ断電流	I_{EBO}	V_{EB} = 5 V, I_C = 0 A	–	–	100	nA
直流電流増幅率	$h_{FE}1$	V_{CE} = 2 V, I_C = 500 mA	120*	–	560*	
	$h_{FE}2$	V_{CE} = 2 V, I_C = 3 A	95	–	–	
利得帯域幅積	f_T	V_{CE} = 10 V, I_C = 50 mA	–	120	–	MHz
出力容量	Cob	V_{CB} = 10 V, f = 1 MHz	–	45	–	pF
コレクタ・エミッタ飽和電圧	V_{CE}(sat)	I_C = 3 A, I_B = 60 mA	–	220	500	mV
ベース・エミッタ飽和電圧	V_{BE}(sat)	I_C = 3 A, I_B = 60 mA	–	–	1.5	V
コレクタ・ベース降伏電圧	$V_{(BR)CBO}$	I_C = 10 μA, I_E = 0 A	60	–	–	V
コレクタ・エミッタ降伏電圧	$V_{(BR)CEO}$	I_C = 1 mA, R_{BE} = ∞	20	–	–	V
エミッタ・ベース降伏電圧	$V_{(BR)EBO}$	I_E = 10 μA, I_C = 0 A	6	–	–	V
ターンオン時間	t_{on}	指定回路において		30	–	ns
蓄積時間	t_{stg}			300	–	ns
下降時間	t_f			40	–	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。

* 2SD1805 は500 mA h_{FE} により次のように分類している。

ランク	E	F	G
h_{FE}	120 to 200	160 to 320	280 to 560

スイッチングタイム測定回路図



$I_C = 10I_{B1} = -10I_{B2}$ = 2 A, V_{CC} = 10 V

図 1. スイッチングタイム測定回路図

TYPICAL CHARACTERISTICS

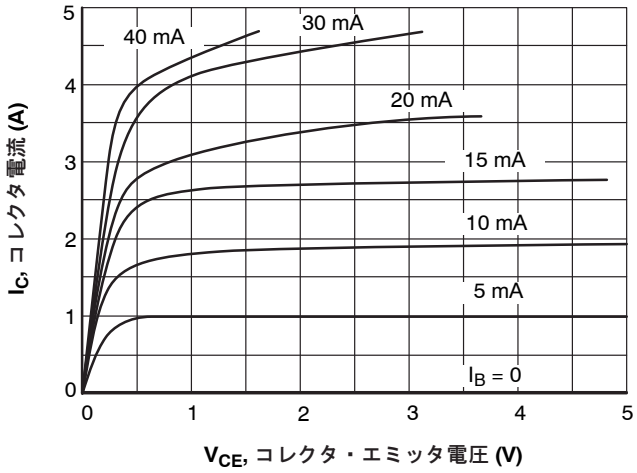


図 2. $I_C - V_{CE}$

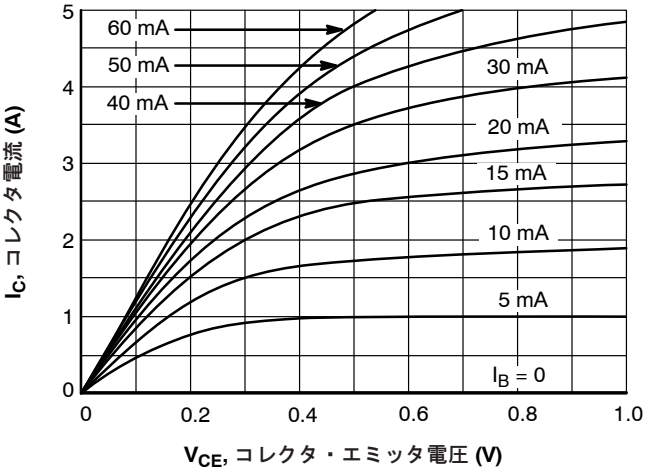


図 3. $I_C - V_{CE}$

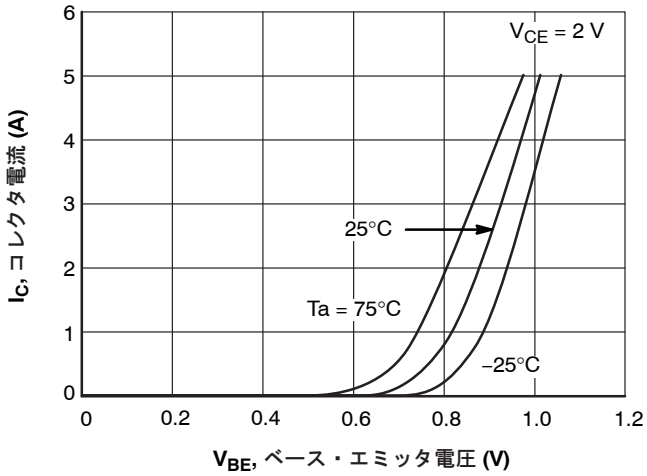


図 4. $I_C - V_{BE}$

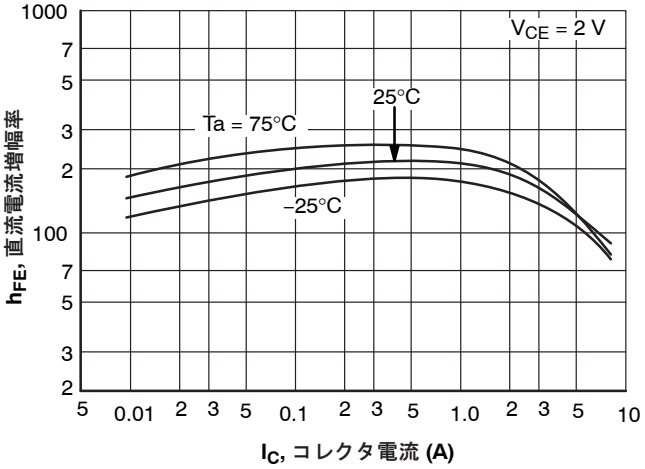


図 5. $h_{FE} - I_C$

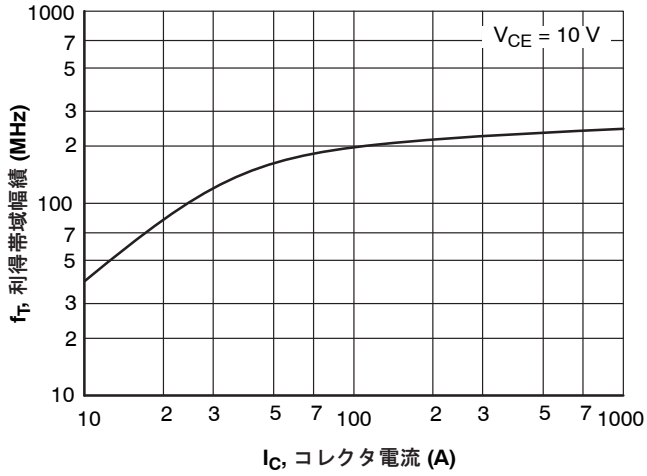


図 6. $f_T - I_C$

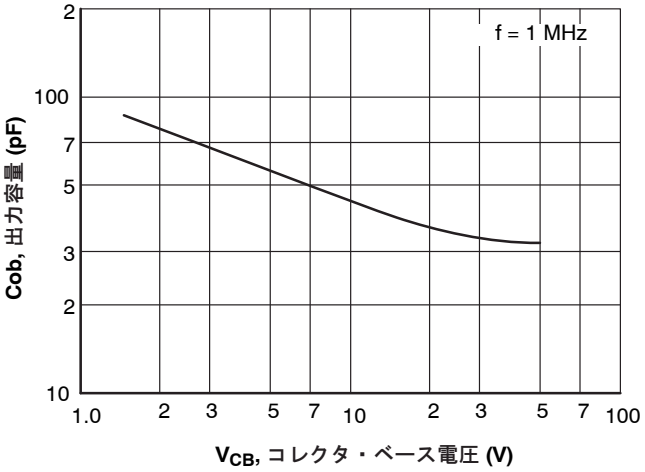


図 7. $Cob - V_{CB}$

TYPICAL CHARACTERISTICS (continued)

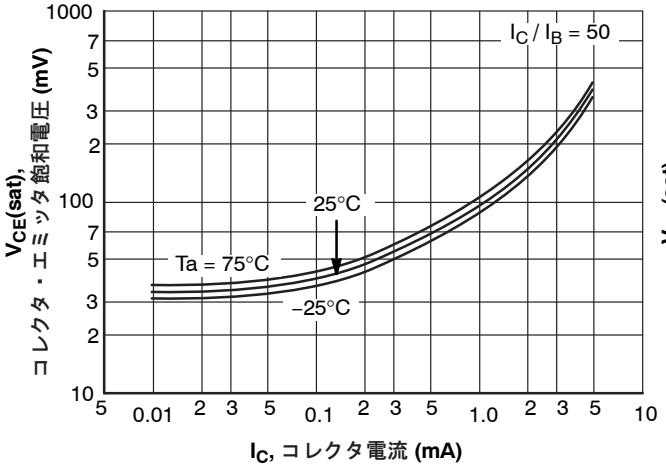


図 8. $V_{CE}(sat) - I_C$

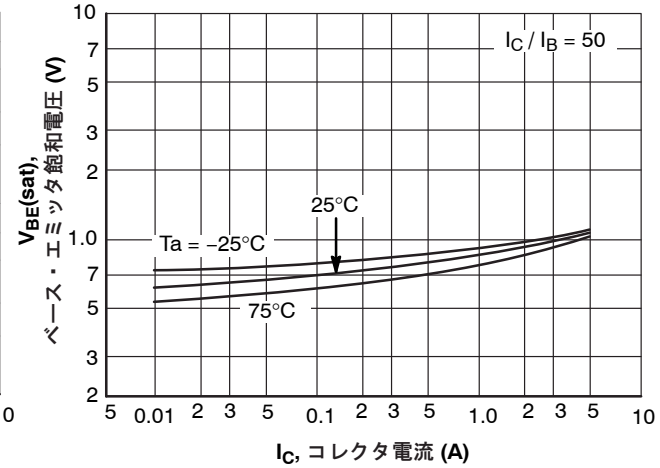


図 9. $V_{BE}(sat) - I_C$

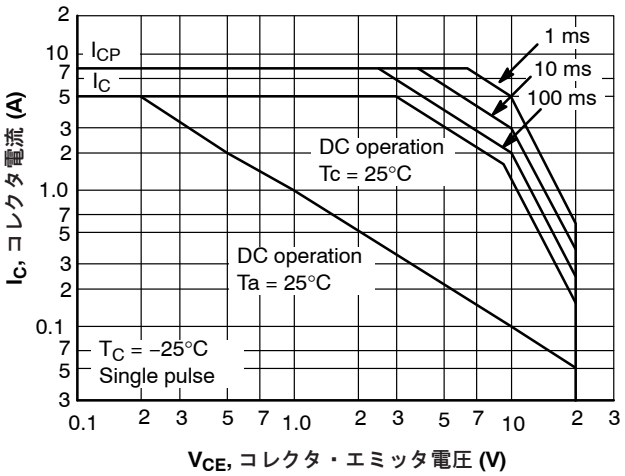


図 10. ASO

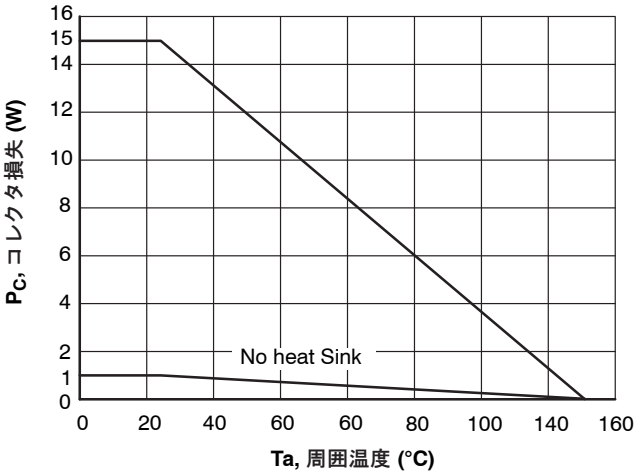


図 11. $P_C - Ta$

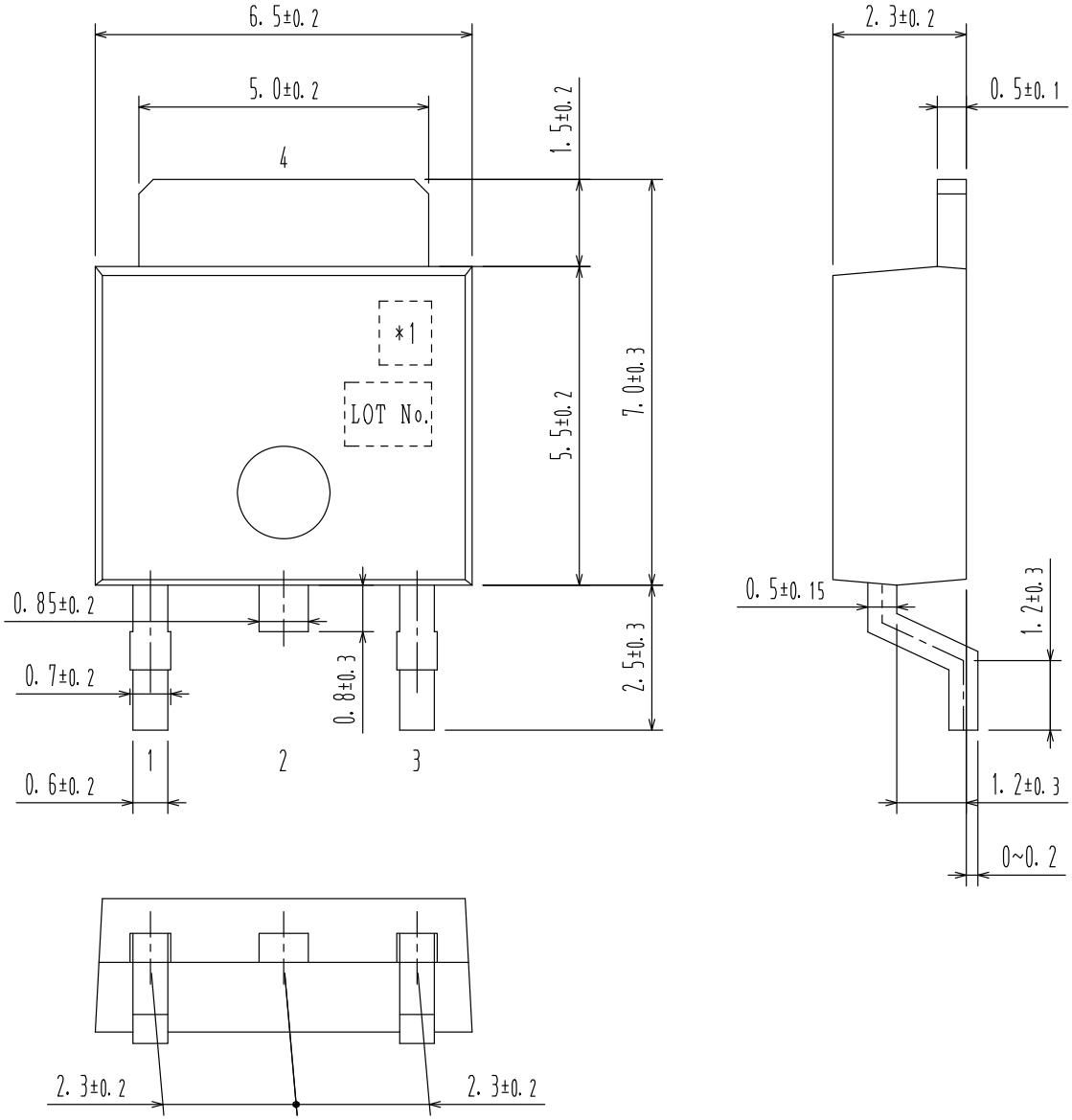
ORDERING INFORMATION

Device Order Number	パッケージ名	Shipping†
2SD1805F−TL−E	DPAK / TP−FA (Pb−Free)	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.

DPAK / TP−FA
CASE 369AH
ISSUE O

DATE 30 JAN 2012



Pin 2 is idle pin with electrical designation only carried.

*1:Lot indication

1:
2:
3:
4:

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DESCRIPTION:	**DPAK / TP−FA**		**PAGE 1 OF 1**

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