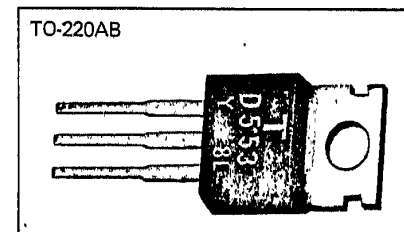


(7) TO-220AB PACKAGE SERIES



*MAX.

Application

	Type No.		IC (A)	V _{CEO} V _{CBO} (V)	P _C T _C =25°C (W)	h _{FE}		V _{CE(sat)} MAX.			f _T TYP.			Cob TYP.		SW Time TYP.			
	NPN	PNP				V _{CE} (V)	I _C (A)	V _{CE(sat)} (V)	I _C (A)	I _B (A)	(MHz)	V _{CE} (V)	I _C (A)	f=1MHz (pF)	V _{CB} (V)	t _{on} (μs)	t _{stg} (μs)	t _f (μs)	
TV Chroma Out	2SC1569		0.15	300	12.5	40~170	10	50m	1	0.1	20m	100	10	30m	5	50	—	—	—
TV Sound Out	2SC2242				25	40~170	10	50m	3	0.1	10m	50	50	20m	5.5	30	—	—	—
TV Vertical Out	2SC2073	2SA940	1.5	150	25	40~140	10	0.5	1.5	0.5	50m	4/6	10	0.5	35/50	10	—	—	—
Audio Drive	2SC2238	2SA968		160	25	70~240	5	0.1	1.5	0.5	50m	100	10	0.1	25/30	10	—	—	—
Audio Drive	2SC2238A	2SA968A		180	25	70~240	5	0.1	1.5	0.5	50m	100	10	0.1	25/30	10	—	—	—
Audio Drive	2SC2238B	2SA968B		200	25	70~240	5	0.1	1.5	0.5	50m	100	10	0.1	25/30	10	—	—	—
General Purpose	2SC1173	2SA473	3	30	10	70~240	2	0.5	0.8	2	0.2	100	2	0.5	35/40	10	—	—	—
General Purpose	2SD235 (G)	2SB435 (G)		40	25	40~240	1	0.5	1.2	3	0.3	3	10	0.5	90/150	10	—	—	—
General Purpose	2SD1052			50	30	250~750	5	0.5	1.0	1	20m	5	5	0.5	70	10	1.5	4.5	3
General Purpose	2SD1052A			50	30	400~1200	5	0.5	1.0	1	20m	5	5	0.5	70	10	2	5	3
General Purpose	2SD234 (G)	2SB434 (G)		50	25	40~240	1	0.5	1.2	3	0.3	3	10	0.5	90/150	10	—	—	—
General Purpose	2SD880	2SB834		60	30	60~300	5	0.5	1.0	3	0.3	3	5	0.5	70/150	10	0.8/0.4	1.5/1.7	0.8/0.5
TV Horizontal Out	2SC2233		4	*200	40	30~150	5	1	1	4	0.4	8	5	0.5	—	—	—	—	—
General Purpose	2SD526	2SB596		80	30	40~240	5	0.5	1.5	3	0.3	8	5	0.5	90/130	10	—	—	—
General Purpose	2SD525	2SB595	5	100	40	40~240	5	1	2.0	4	0.4	12	5	1	100/270	10	—	—	—
TV Horizontal Out	BU407D		7	*330	60	10MIN.	1.5	5	1.5	5	0.5	18	10	0.2	—	—	—	—	*1.0
TV Horizontal Out	2SD1069			*300	40	10MIN.	1.5	5	1.5	5	0.5	18	10	0.2	—	—	—	—	*1.0

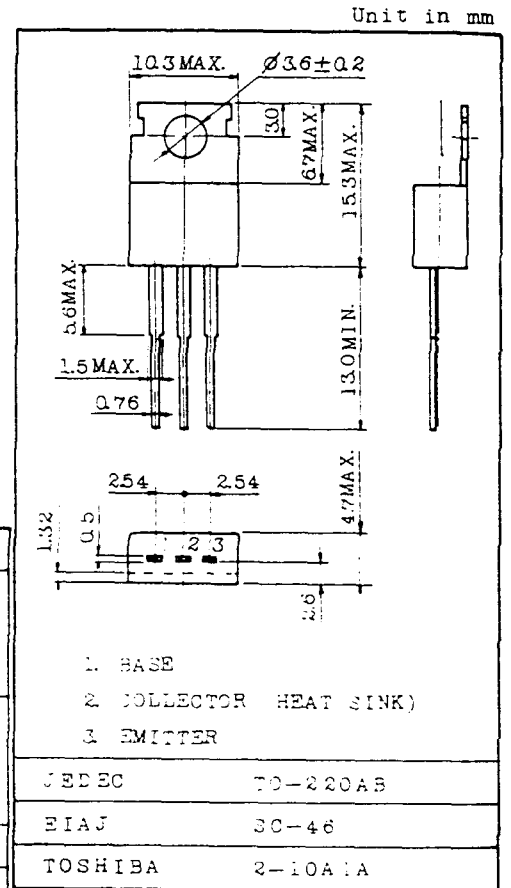
2SC2238・2SC2238A 2SC2238B

シリコンNPNエピタキシャル形トランジスタ(PCT方式)
SILICON NPN EPITAXIAL TRANSISTOR (PCT PROCESS)

- 電力増幅用
- 励振段電力増幅用
- Power Amplifier Applications.
- Driver Stage Amplifier Applications.
- ・ トランジション周波数が高い。: $f_T = 100 \text{ MHz}$ (Typ.)
- ・ 2SA968とコンプリメンタリになります。
- ・ Can Type (TO-66) の 2SC2239 もあります。
- ・ Complementary to 2SA968.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
コレクタ・ベース 間電圧	V_{CB0}	2SC2238 160	V
		2SC2238A 180	
		2SC2238B 200	
コレクタ・エミッタ 間電圧	V_{CE0}	2SC2238 160	V
		2SC2238A 180	
		2SC2238B 200	
エミッタ・ベース間電圧	V_{EB0}	5	V
コレクタ電流	I_C	1.5	A
エミッタ電流	I_E	-1.5	A
コレクタ損失 ($T_c = 25^\circ\text{C}$)	P_C	25	W
接合温度	T_j	150	$^\circ\text{C}$
保存温度	T_{stg}	-55 ~ 150	$^\circ\text{C}$

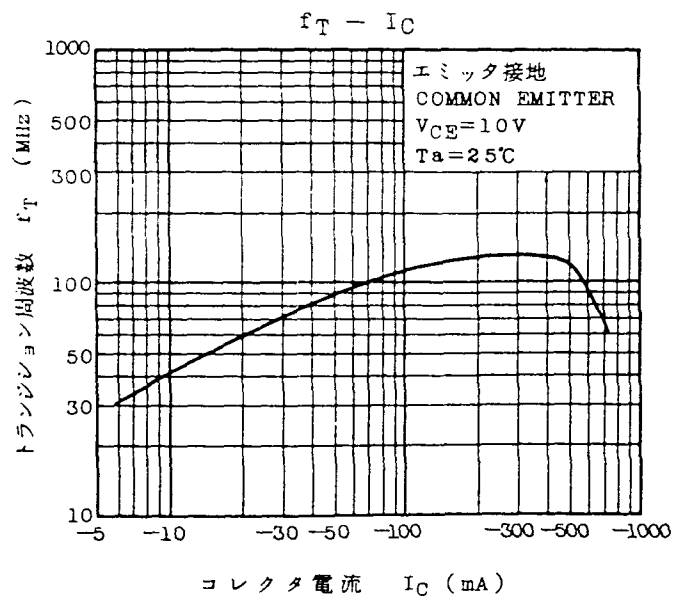
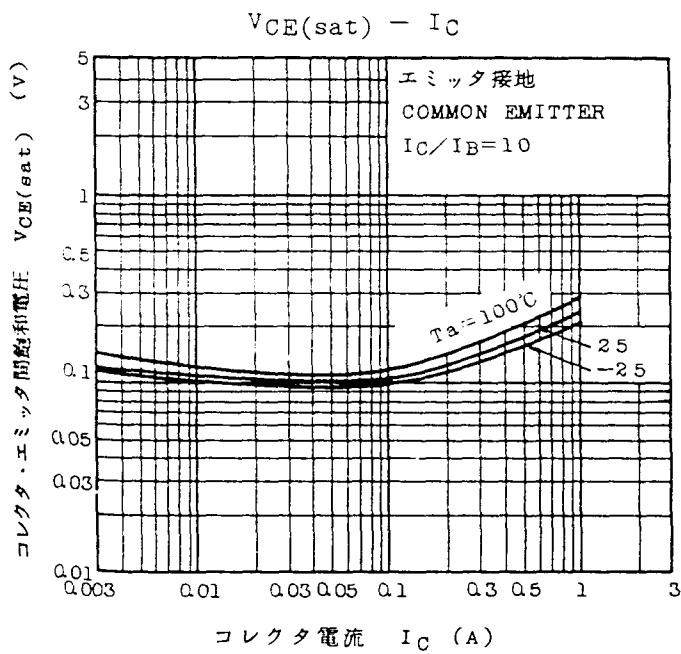
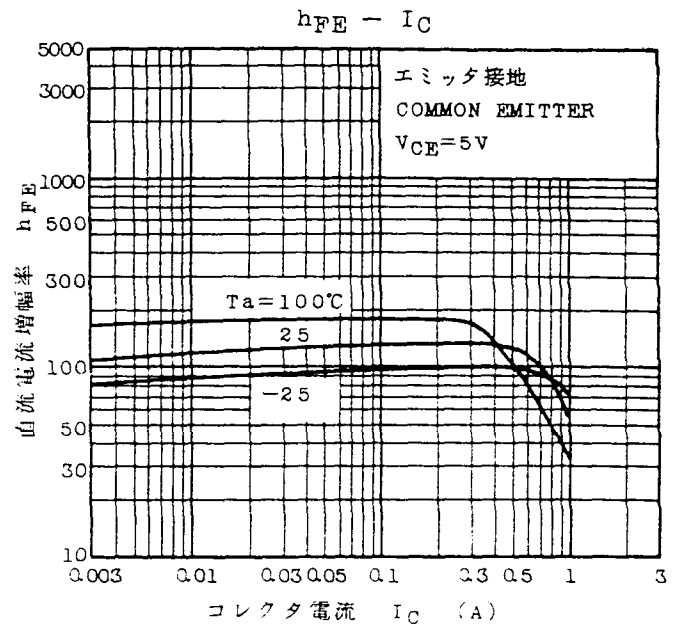
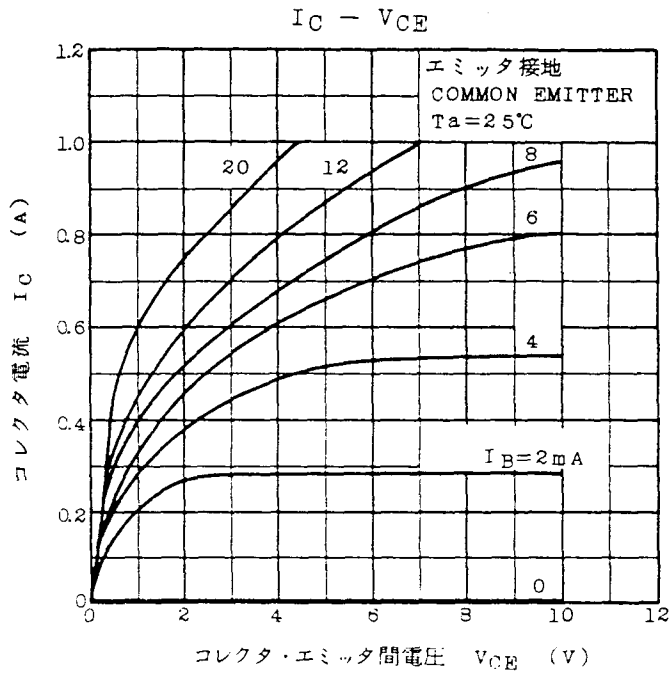


アクセサリは AC75 を適用
MOUNTING KIT No. AC75

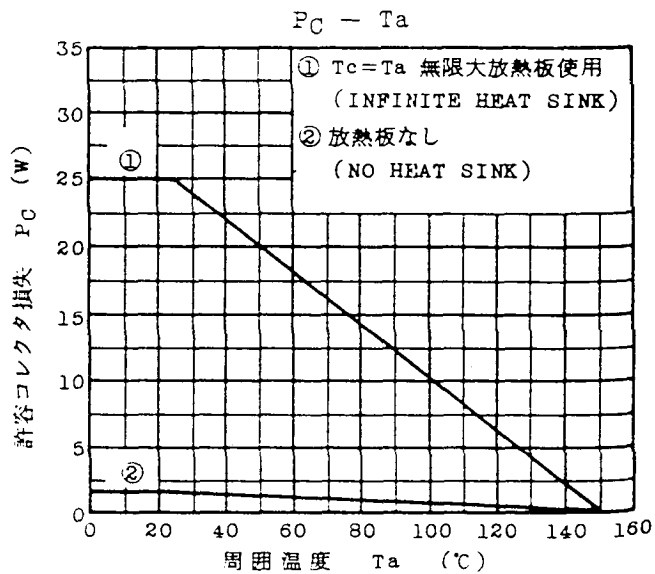
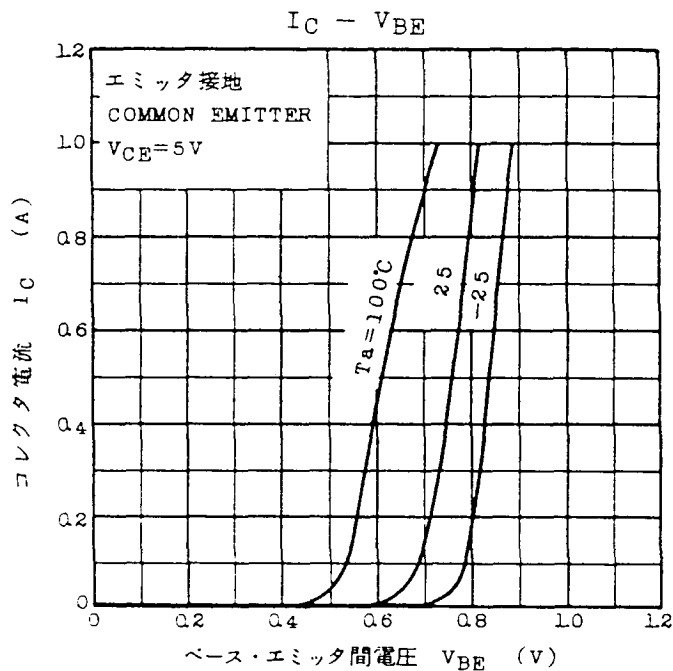
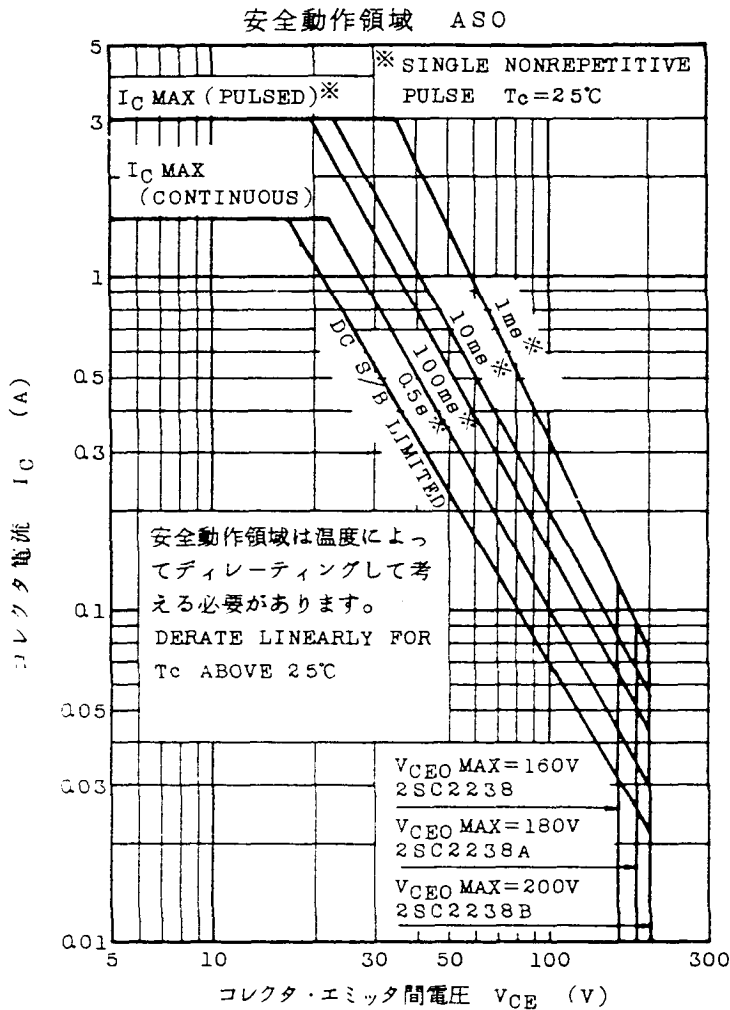
電気的特性 ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
コレクタしゅ断電流	I_{CBO}	$V_{CB} = 160 \text{ V}, I_E = 0$	—	—	1.0	μA
エミッタしゅ断電流	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	—	—	1.0	μA
コレクタ・エミッタ 間降伏電圧	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	160	—	—	V
			180	—	—	
			200	—	—	
エミッタ・ベース間降伏電圧	$V_{(BR)EBO}$	$I_E = 1 \text{ mA}, I_C = 0$	5	—	—	V
直流電流増幅率	h_{FE} (Note)	$V_{CE} = 5 \text{ V}, I_C = 100 \text{ mA}$	70	—	240	—
コレクタ・エミッタ間飽和電圧	$V_{CE(sat)}$	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	—	—	1.5	V
ベース・エミッタ間電圧	V_{BE}	$V_{CE} = 5 \text{ V}, I_C = 500 \text{ mA}$	—	—	1.0	V
トランジション周波数	f_T	$V_{CE} = 10 \text{ V}, I_C = 100 \text{ mA}$	—	100	—	MHz
コレクタ出力容量	C_{ob}	$V_{CB} = 10 \text{ V}, I_C = 0, f = 1 \text{ MHz}$	—	25	—	pF

2SC2238・2SC2238A 2SC2238B



2SC2238・2SC2238A 2SC2238B



Silicon NPN Power Transistors

2SC2238 2SC2238A 2SC2238B

DESCRIPTION

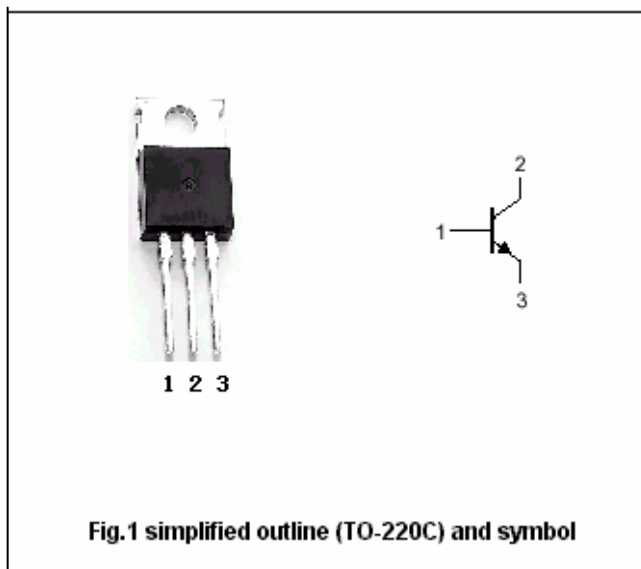
- With TO-220 package
- Complement to type 2SA968
- High breakdown votage

APPLICATIONS

- Power amplifier applications
- Driver stage amplifier applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

Absolute maximum ratings($T_a=25^{\circ}\text{C}$)

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	2SC2238	Open emitter	160	V
		2SC2238A		180	
		2SC2238B		200	
V_{CEO}	Collector-emitter voltage	2SC2238	Open base	160	V
		2SC2238A		180	
		2SC2238B		200	
V_{EBO}	Emitter-base voltage		Open collector	5	V
I_C	Collector current			1.5	A
I_E	Emitter current			-1.5	A
P_T	Total power dissipation		$T_C=25^{\circ}\text{C}$	25	W
T_j	Junction temperature			150	$^{\circ}\text{C}$
T_{stg}	Storage temperature			-55~150	$^{\circ}\text{C}$

Silicon NPN Power Transistors**2SC2238 2SC2238A 2SC2238B****CHARACTERISTICS**T_j=25°C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	2SC2238	I _C =10mA; I _B =0	160			V
		2SC2238A		180			
		2SC2238B		200			
V _{(BR)EBO}	Emitter-base breakdown voltage		I _E =1mA; I _C =0	5			V
V _{CEsat}	Collector-emitter saturation voltage		I _C =500mA; I _B =50mA			1.5	V
V _{BE}	Base-emitter on voltage		I _C =500mA ; V _{CE} =5V			1.0	V
I _{CBO}	Collector cut-off current		V _{CB} =160V ; I _E =0			1.0	μA
I _{EBO}	Emitter cut-off current		V _{EB} =5V; I _C =0			1.0	μA
h _{FE}	DC current gain		I _C =100mA ; V _{CE} =5V	70		240	
C _{ob}	Output capacitance		I _E =0 ; V _{CB} =10V, f=1MHz		25		pF
f _T	Transition frequency		I _C =100mA ; V _{CE} =10V		100		MHz

◆ **h_{FE} Classifications**

O	Y
70-140	120-240

Silicon NPN Power Transistors

2SC2238 2SC2238A 2SC2238B

PACKAGE OUTLINE

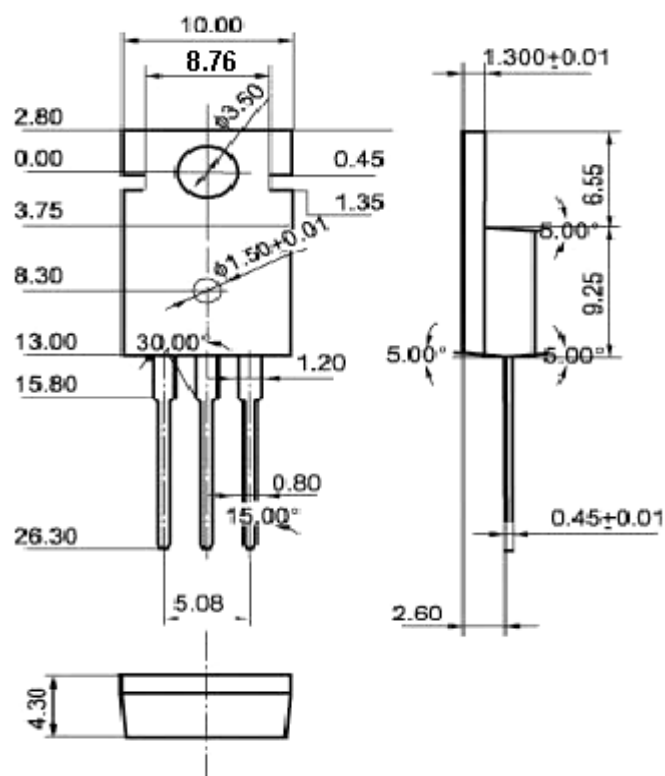


Fig.2 Outline dimensions(unindicated tolerance:±0.10 mm)