

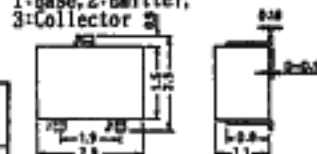
Transistors for TV Display Video Output Use

Features *Excellent HF characteristic. *Small reverse transfer capacitance. *Complementary PNP and NPN types.
*Adoption of NBIT, FBET processes. *Highly resistant to dielectric breakdown.

Case Outline (unit:mm)

SANYO:CP

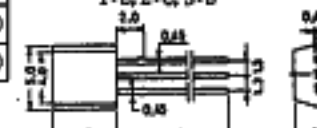
1:Base, 2:Emitter, 3:Collector



General-Purpose Type (※: $T_c=25^\circ\text{C}$) For PNP, (-) sign is omitted.

Type No.	Package	Absolute Maximum Ratings/ $T_c=25^\circ\text{C}$				Electrical Characteristics/ $T_c=25^\circ\text{C}$					
		V_{CB0} (V)	V_{CEO} (V)	I_C (A)	P_C (W)	f_T typ (MHz)	V_{CE} / I_C (V/mA)	C_{ob} typ (PF)	C_{re} (PF)	V_{CB} (V)	h_{FE}
2SC2857	N P	180	180	50m	0.5	min50	30 / 10	4	-	10	40 ~ 320
2SA1689/2SC4449		300	300	50m	0.6	70	30 / 10	2.4/1.5	1.5/1	30	100 ~ 320
2SC5291	FLP	180	160	1.5	1.5	120	10 / 50	14	-	10	100 ~ 400
2SC4075	TO-220ML	300	300	0.2	※10	min50	30 / 10	5.3	-	50	40 ~ 200

SANYO:NP
1:E, 2:C, 3:B



High-Definition CRT Display Use

2SA1580/2SC4104	C P	70	60	50m	0.2	700	10 / 10	1.7/1.3	1.3/1	10	60 ~ 270
2SA1433/2SC3504	M P				0.9	700	10 / 10	1.7	1.3/1	10	60 ~ 320
2SA1370/2SC3467		N P	200	200	0.1	1.0	150	30 / 10	2.6/1.7	1.7/1.2	30
2SA1371/2SC3468	M P		300	300	0.1	1.0	150	30 / 10	3.1/2.6	2.3/1.8	30
2SA1710/2SC4490		NMP	300	300	0.1	1.0	70	30 / 10	3.1/2.6	2.3/1.8	30
2SA1787/2SC4650	M P		200	200	0.1	1.0	150	30 / 10	2.6/1.7	1.7/1.2	30
2SA1828/2SC4732		FLP	200	200	0.1	1.3	150	30 / 10	2.6/1.7	1.7/1.2	30
2SA1829/2SC4733	M P		300	300	0.1	1.3	150	30 / 10	3.1/2.6	2.3/1.8	30
2SC4884		NMP	300	300	0.1	1.5	70	30 / 10	2.6	1.8	30
2SA1352/2SC3416	TO-126		200	200	0.1	1.2	70	30 / 10	2.6/1.7	1.7/1.2	30
2SA1353/2SC3417		300	300	0.1	1.2	70	30 / 10	3.1/2.6	2.3/1.8	30	40 ~ 320
2SA1380/2SC3502		200	200	0.1	1.2	150	30 / 10	2.6/1.7	1.7/1.2	30	40 ~ 320
2SA1381/2SC3503		300	300	0.1	1.2	150	30 / 10	3.1/2.6	2.3/1.8	30	40 ~ 320
2SA1478/2SC3788	TO-126ML	200	200	0.1	1.3	150	30 / 10	2.6/1.7	1.7/1.2	30	40 ~ 320
2SA1479/2SC3789		300	300	0.1	1.5	70	30 / 10	3.1/2.6	2.3/1.8	30	40 ~ 320
2SA1480/2SC3790		300	300	0.1	1.5	150	30 / 10	3.1/2.6	2.3/1.8	30	40 ~ 320
2SC4217	TO-220	300	300	0.2	1.5	70	10 / 10	3.5	-	50	40 ~ 200
2SC4378		300	300	0.2	1.5	100	30 / 10	3.9	3.2	30	60 ~ 320
2SC4188	TO-220	200	200	0.1	※10	150	30 / 10	1.8	1.3	30	40 ~ 320

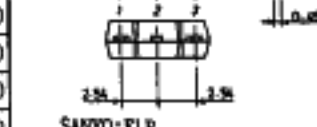
SANYO:MP
1:E, 2:C, 3:B



SANYO:NMP
1:E, 2:C, 3:B



SANYO:FLP
1:E, 2:C, 3:B



Underlined type Nos. are before mass production.

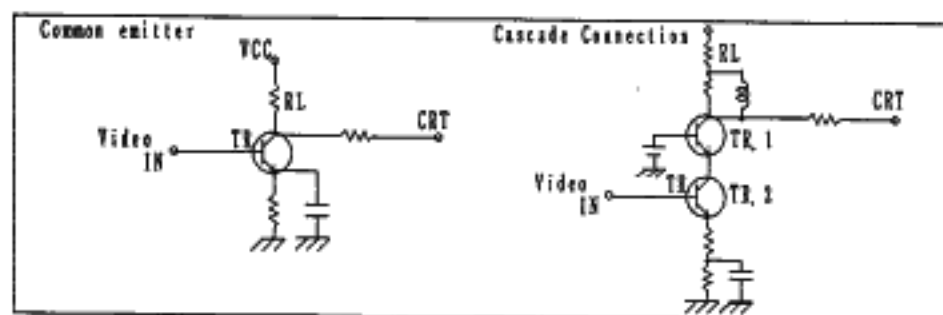
*Classification by h_{FE}

40	C	80	60	D	120	100	E	200	160	F	320
(CP type)		60	3	120	90	4	180	135	5	270	

2SC5291(100~400)

100	R	200	140	S	280	200	T	400
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*Equivalent Circuit for Video Output Use



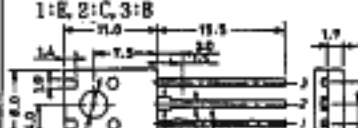
SANYO:TO-126

1:E, 2:C, 3:B



SANYO:TO-126ML

1:E, 2:C, 3:B



SANYO:TO-220ML 1:B, 2:C, 3:E

1:Base, 2:Collector, 3:Emitter

SANYO:TO-220

1:Base, 2:Collector, 3:Emitter

SANYO:TO-220ML 1:B, 2:C, 3:E

1:Base, 2:Collector, 3:Emitter

SANYO:TO-220ML 1:B, 2:C, 3:E

1:Base, 2:Collector, 3:Emitter

These specifications are subject to change without notice.

SANYO Discrete Device Package Outlines (unit:mm)

Small-Signal Transistors

Outlines name SSFP, SMCP, MCP, MCP4/6, CP, CP4/5/6, CP3/5/6, PCP, PCP4/5, XP5/6, TP, TP-FA, MFP6, TSSOP8, SOP8, SPA, NP, MP, NMP, FLP, TO-126, TO-126ML, TO-126LP

Large-Signal Transistors

ZP, SMP, SMP-PD, TO-220, TO-220C1, TO-220ML, TO-220FI (LS), TO-220MF, TO-3PB, TO-3PWL, TO-3PBL, TO-3JWL

SANYO Transistor Package Name List. Surface Mount Types

SSFP	Super Small Flat Package
SMCP	Super Mini Chip Pack.
MCP	Mini Chip Pack.
MCP4/6	Mini Chip Pack. (PH type)
CP	Chip Pack.
CP5/6	Chip Pack. (PC type)
CP3/5/6	Chip Pack high-power
PCP	Power Chip Pack.
PCP4/5	Power Chip Pack. (FP type)
NP	Chip Pack. (FK type)
TSSOP8	Chip Pack. (FSS, FTD type)
SOP8	Chip Pack. (FW, FSS type)
TP-FA	Tiny Package
SMP-PD	For large signal
ZP	For large signal

Lead Types ML:No insulating needed.

NMP	New NP
FLP	Full Mold Large Package
TO-126LP	Large-Power
TO-126ML	Micaless
TO-220, 220ML	ML: Micaless type
TO-220C1	CI: Compact Isolation
TO-220FI (LS)	Full Isolation (leads short type)
TO-220MF	Mini Pin Short pin type.
TO-3PB, 3PWL	Bushless, ML: Micaless
TO-3PWL	Micaless
TO-3PBL	Bushless Large
TO-3JWL	Jumbo Micaless

PB, BL: no insulating needed.

Notes

Nomenclature of house NOs. The first several letters of the type Nos. of the FSS, FTD, FW, FTS, FC, FP, FB, series mean:

- 1st F: Packages for complex type devices. (CP5/6, MCP4/6, PCP4/5, XP5/6, SOP8, TSSOP8)
- 2nd S: SOP8 package
- 2nd W: Double chips
- 2nd T: TSSOP8 package
- 2nd C: CP5/6 package
- 2nd P: PCP4/5 package
- 2nd X: XP5/6 package
- 2nd D: Dual type
- 2nd H: Ultra high freq. type
- 3rd S: Single

Type Nos. of 10X or 100X are p-channel types. Type Nos. of 20X or 200X are N-channel types.

XP package is excluded.

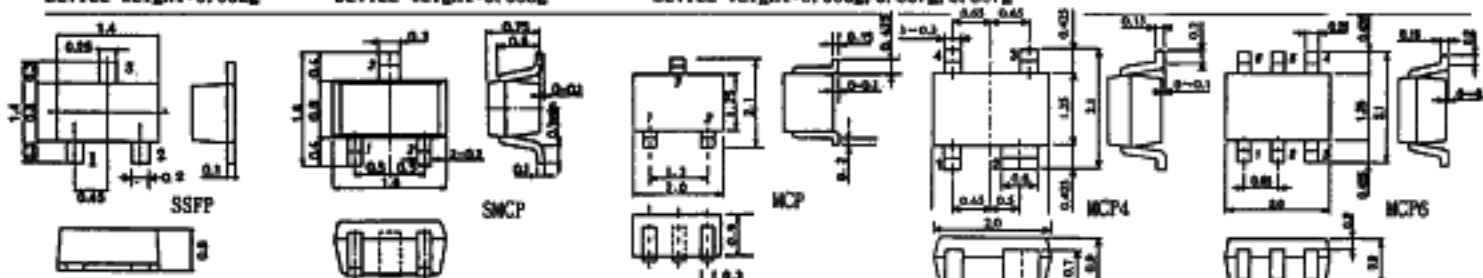
How to name CP3/5/6 devices. Package name followed by 1, 2, 3 or 4 and then tow-digit

consecutive Nos. Figures following the package names mean: 1:P-NP Tr, 2:NPN Tr, 3:P-ch MOSFET, 4:N-ch MOSFET.

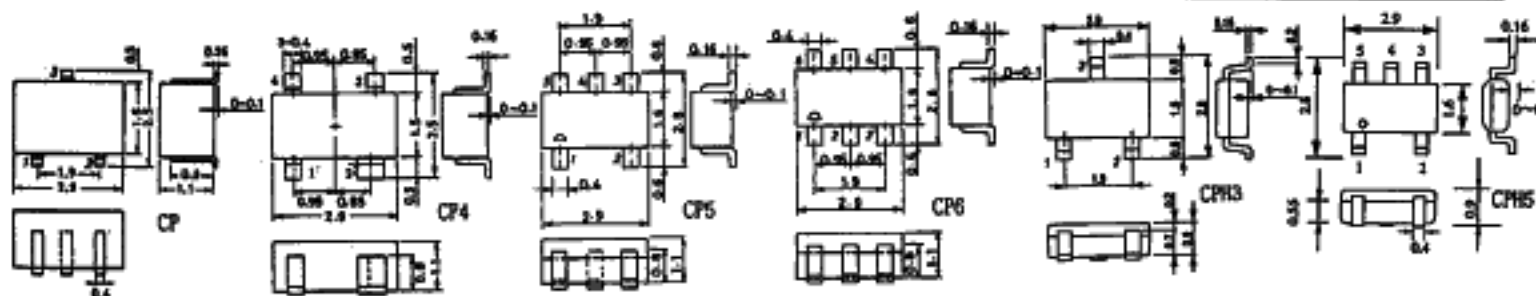
Surface Mount Type Outlines (JEDEC and EIAJ name are in parentheses.)

Top View Pin Nos. of top view are CAD register Nos. Bottom side: Heat sink side.

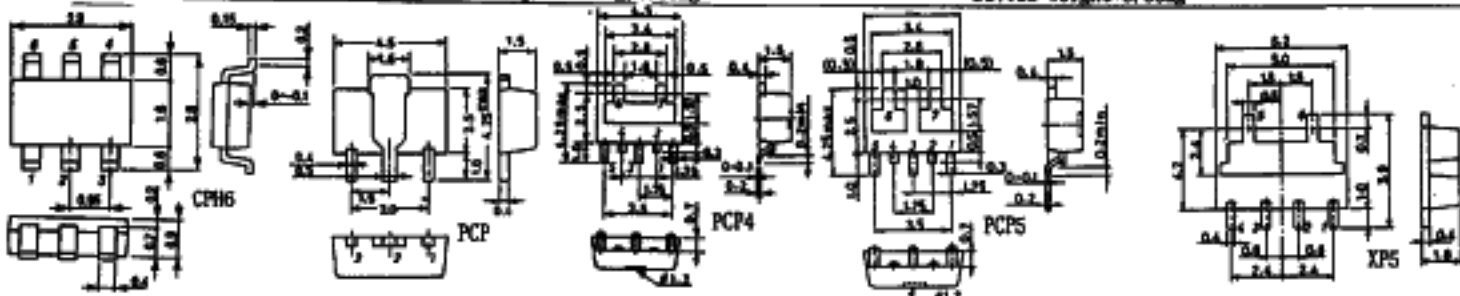
SANYO:SSFP Device weight:0.002g SANYO:SMCP(SC-75A) Device weight:0.003g SANYO:MCP(SC-70), MCP4(SC-82, A), MCP6 Device weight:0.006g, 0.007g, 0.007g



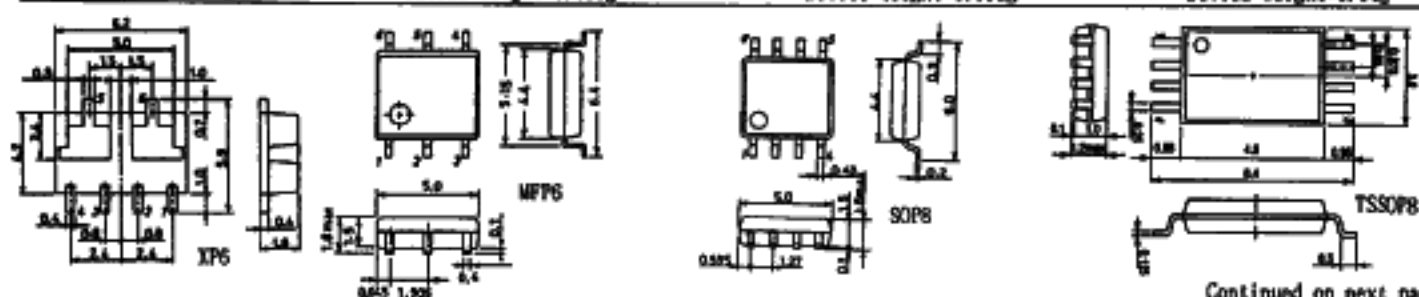
SANYO:CP(SC-69, TO-236) Device weight:0.013g SANYO:CP4, CP5, CP6(SC-61, SC-74A, SC-74, SOT143) Device weight:0.013g, 0.014g, 0.015g SANYO:CP3, CP5 Device weight:0.013g, 0.015g



SANYO:CP3 Device weight:0.015g SANYO:PCP, PCP4/5(SC-62, SOT89) Bottom View Device weight:0.058g, 0.052g SANYO:XP5 Bottom View Device weight:0.062g



SANYO:XP6 Bottom View Device weight:0.062g SANYO:MFP6 Device weight:0.089g SANYO:SOP8 Device weight:0.093g SANYO:TSSOP8 Device weight:0.04g



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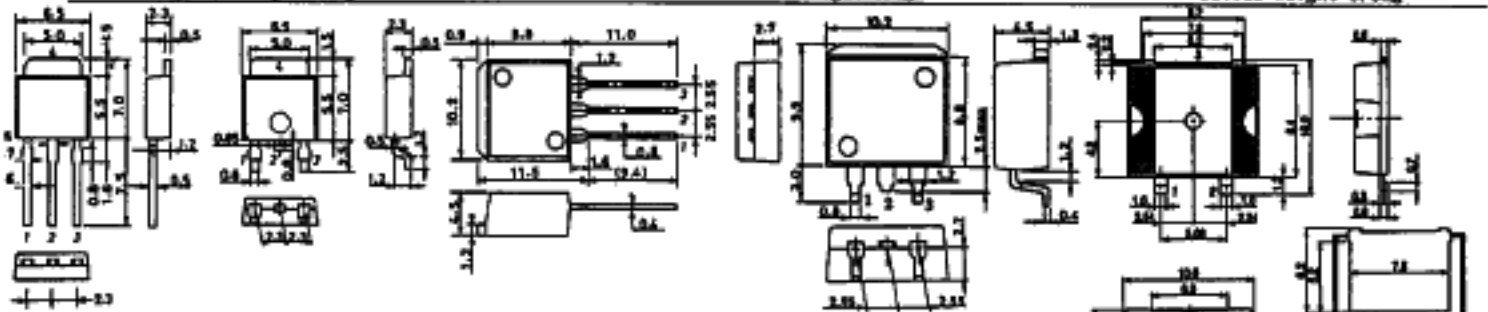
SANYO Discrete Device Package Outlines (unit:mm)

o/c Surface Mount Type Outlines (JEDEC and EIAJ name are in parentheses.)
 Top View Pin Nos. of top view are CAD register Nos. Bottom side: Heat sink side.

SANYO:TP, TP-FA(SC-64, SC-63, TO-251)
 Device weight:0.315g, 0.282g

SANYO:SNP, SNP-PD(forming type)(SC-83)
 Device weight:1.4g

SANYO:2P
 Device weight:0.62g



o/c Lead Type Outlines (JEDEC and EIAJ name are in parentheses.)
 Top View (Pin No.: CAD register Nos.)

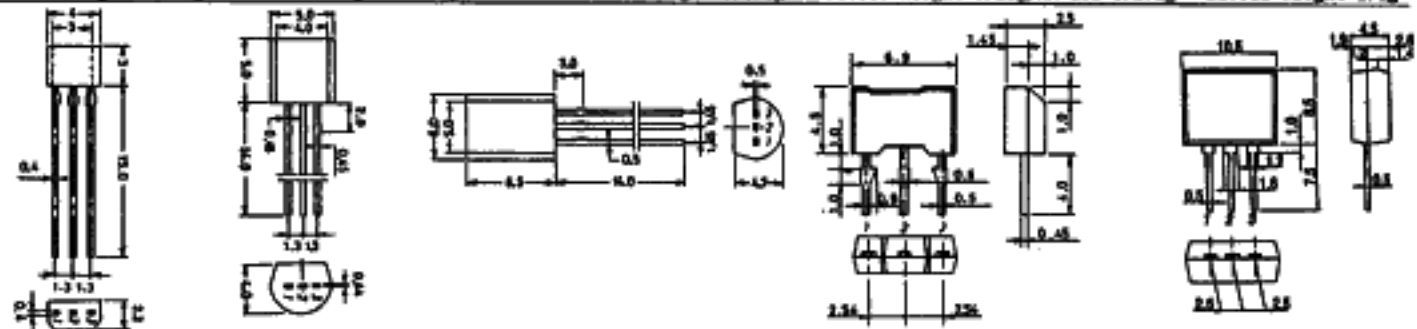
SANYO:SPA(TO-18, TO-39)
 Device weight:0.098g

SANYO:NP(SC-43A, TO-92, SOT-54)
 Device weight:0.269g

SANYO:MP(SC-51, TO-226)
 Device weight:0.578g

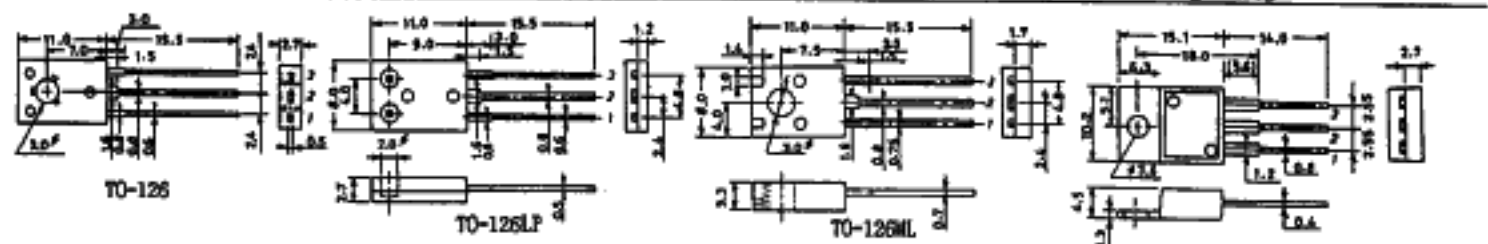
SANYO:NMP(SC-71)
 Device weight:0.21g, AN use:0.275g

SANYO:FLP
 Device weight:1.1g



SANYO:TO-126(TO-126, TO-225, SOT-32), TO-126LP, TO-126ML(SOT-82)
 Device weight:0.675g, 0.7g, 0.97g

SANYO:TO-220MB, AB(SC-45, 46, TO-220AA)
 Device weight:1.9g

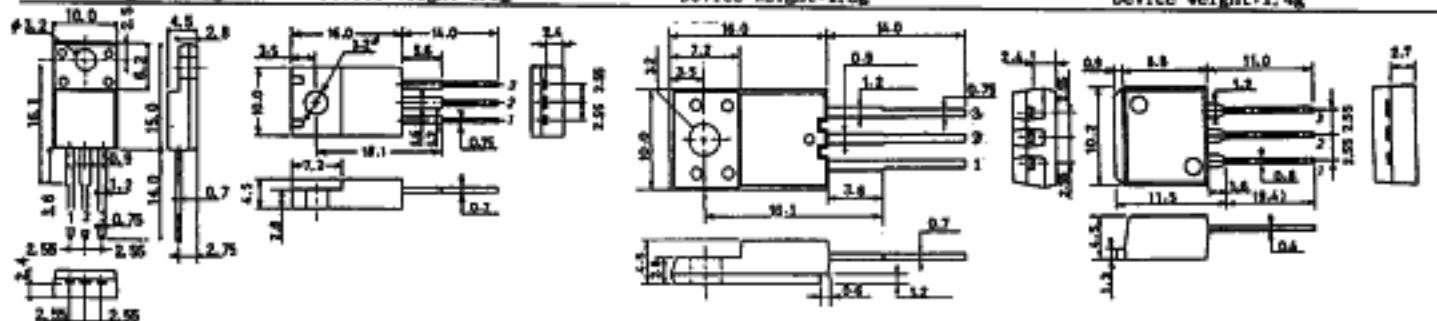


SANYO:TO-220C1
 Device weight:1.75g

SANYO:TO-220ML(SC-67, SOT-186)
 Device weight:1.5g

SANYO:TO-220P(LS)(SC-67, SOT-189)
 Device weight:1.8g

SANYO:TO-220MF
 Device weight:1.4g



SANYO:TO-3PB(SC-65, TO-218)
 Device weight:5.8g

SANYO:TO-3PML(18WATT218)
 Device weight:5.3g

SANYO:TO-3PBL(TO-247)
 Device weight:9.2g

SANYO:TO-3JWL
 Device weight:9.2g

