

Transistors for TV Display Video Output Use

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

Case Outline (unit:mm)

SANYO:CP

1:Base, 2:Emitter, 3:Collector

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

Type No.	Package	Absolute Maximum Ratings/ $T_a=25^\circ\text{C}$				Electrical Characteristics/ $T_a=25^\circ\text{C}$					
		V_{CE0} (V)	V_{CE0} (V)	I_C (A)	P_C (W)	$f_{T\text{typ}}$ (MHz)	V_{CE} / I_C (V/mA)	$C_{ob\text{typ}}$ (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

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

Underlined type Nos. are before mass production.

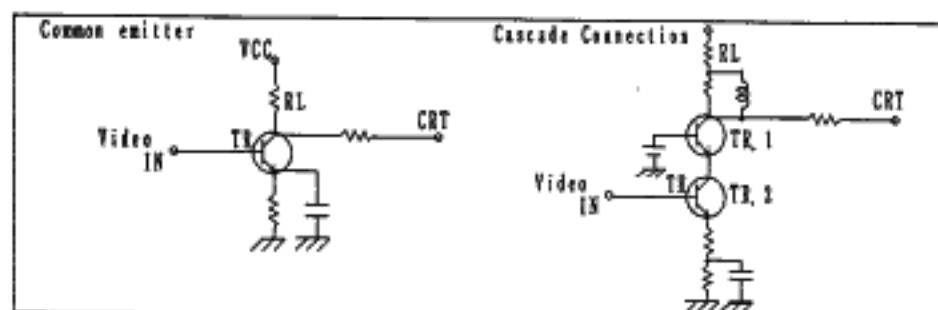
*Classification by h_{FE}

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

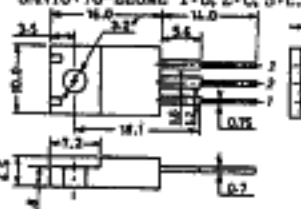
2SC5291(100~400)

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



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



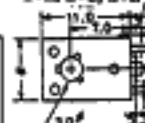
SANYO:TO-220

1:Base, 2:Collector, 3:Emitter



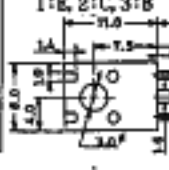
SANYO:TO-126

1:E, 2:C, 3:B



SANYO:TO-126ML

1:E, 2:C, 3:B



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

These specifications are subject to change without notice.

SANYO Discrete Device Package Outlines(unit:mm)

Small-Signal Transistors

Outlines name SSFP, SMCP, MCP, MCP4/5, CP, CP4/5/6, CPB3/5/6, 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

ZF, SMP, SMP-PD, TO-220, TO-220C1, TO-220ML, TO-220FI (LS), TO-220MF, TO-3PB, TO-3PML, TO-3PBL, TO-3JML

SANYO Transistor Package Name List.

Surface Mount Types

SSFP	Super Small Flat Package
SMCP	Super Mini Chip Pack.
MCP	Mini Chip Pack.
MCP4/5	Mini Chip Pack. (PH type)
CP	Chip Pack.
CP5/6	Chip Pack. (PC type)
CPB3/5/6	* Chip Pack high-power
PCP	Power Chip Pack.
PCP4/5	Power Chip Pack. (FP type)
NP	(FX type)
TSSOP8	(FSS, FTD type)
SOP8	(FW, PSS type)
TP-FA	Tiny Package
SMP-PD	For large signal
ZP	For large signal

Lead Types

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 fin type.
TO-3PB, 3PML	Bushless, ML: Micaless
TO-3PML	Micaless
TO-3PBL	Bushless Large
TO-3JML	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, FH, series mean:

- 1'st F : Packages for complex type devices.
(CP5/6, MCP4/5, PCP4/5, XP5/6, SOP8, TSSOP8)
2'nd S : SOP8 package
2'nd W : Double chips
2'nd T : TSSOP8 package
2'nd C : CP5/6 package
2'nd P : PCP4/5 package
2'nd X : XP5/6 package
2'nd D : Dual type
2'nd H : Ultra high freq. type
3'rd S : Single

Type Nos. of 1XX or 1XXX are p-channel types.

Type Nos. of 2XX or 2XXX are n-channel types.

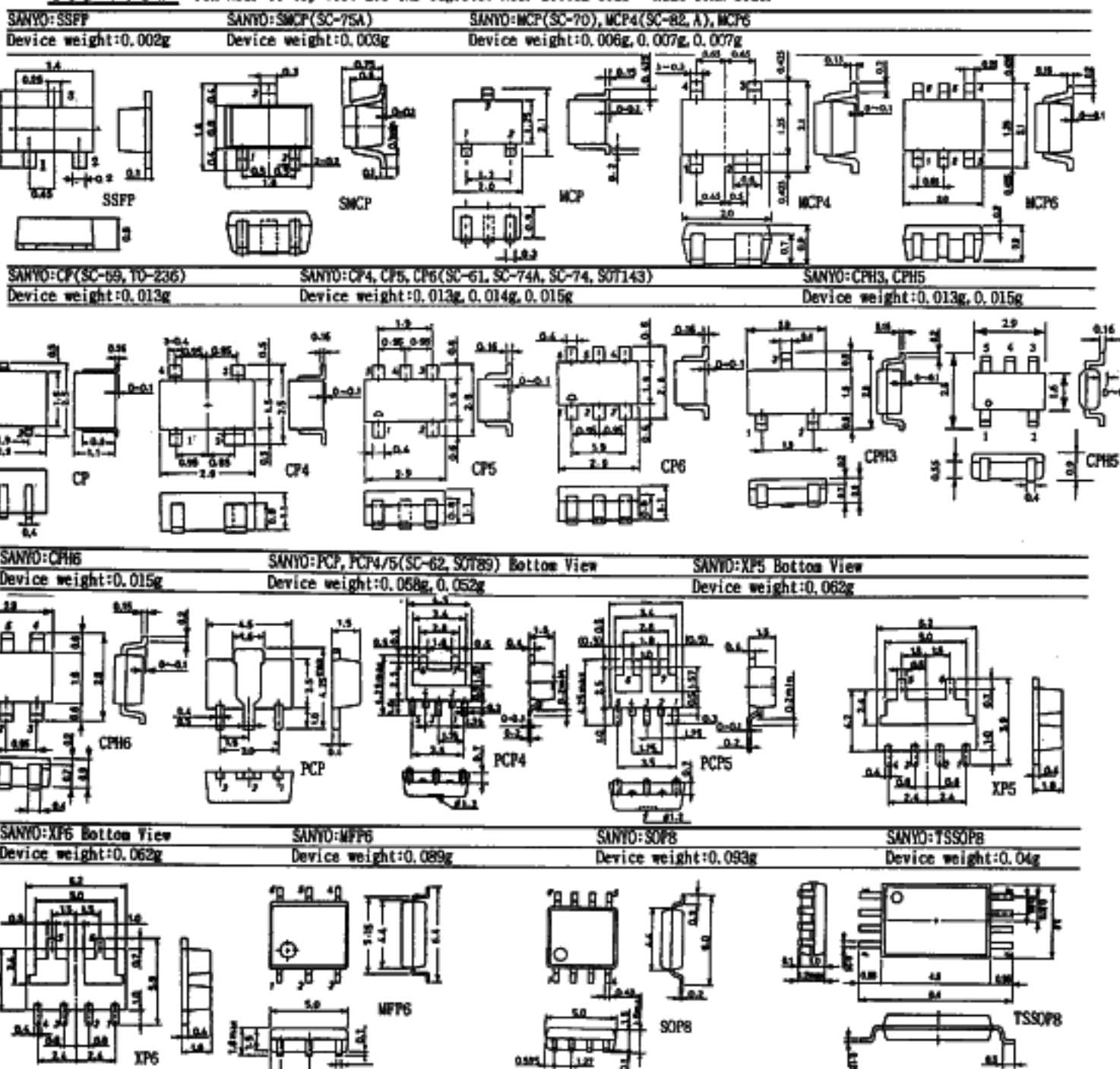
XP package is excluded.

*How to name CPB3/6 devices. Package name followed by 1, 2, 3 or 4 and then tow-digit

consecutive Nos. Figures following the package names mean: 1:PNP 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.



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SANYO Discrete Device Package Outlines (unit:mm)

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)

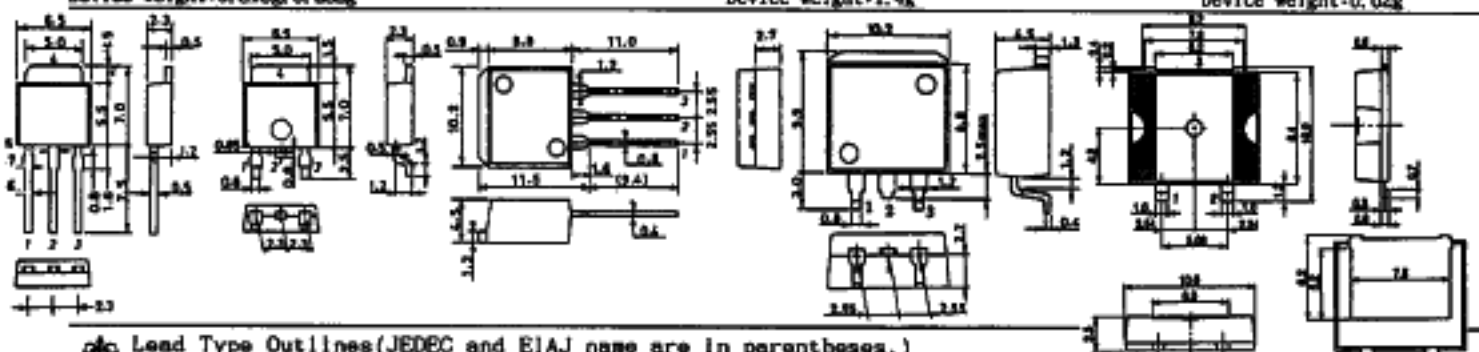
Device weight:0.315g, 0.282g

SANYO:SNP, SNP-PD(forming type)(SC-83)

Device weight:1.4g

SANYO:2P

Device weight:0.62g



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)

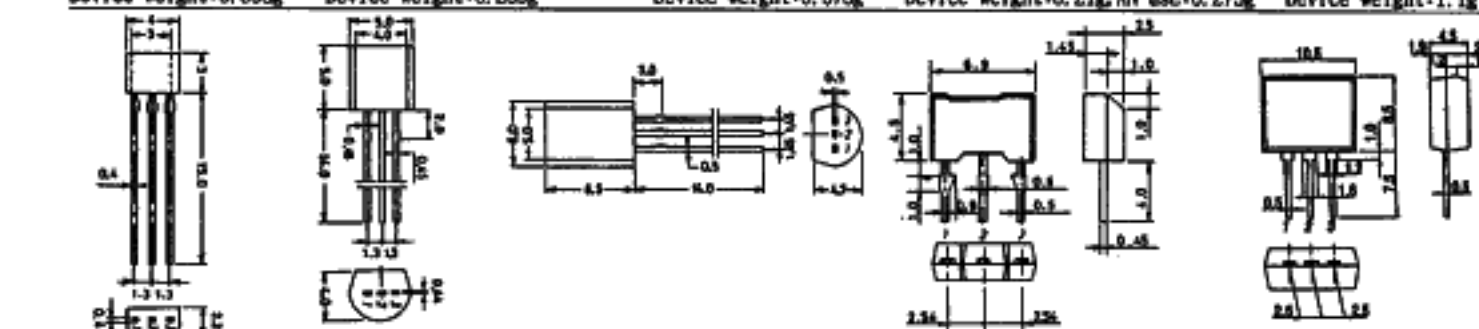
Device weight:0.578g

SANYO:NMP(SC-71)

Device weight:0.21g, AN use:0.275g

SANYO:FLP

Device weight:1.1g

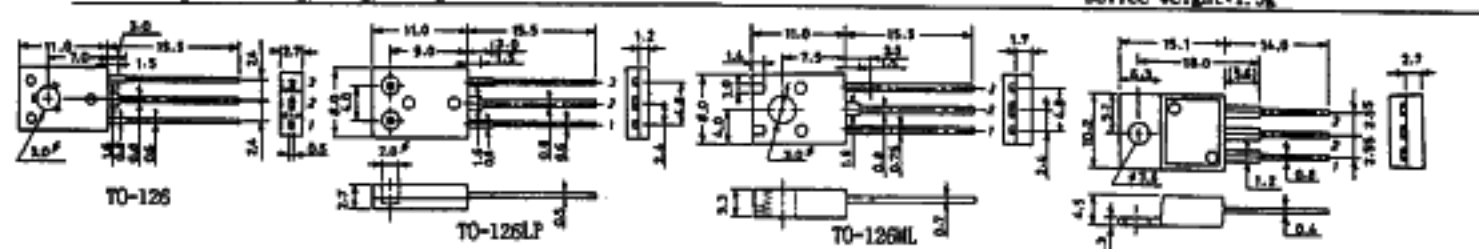


SANYO:TO-126(TO-126, TO-225, SOT-32), TO-126LP, TO-126ML(SOT-82)

Device weight:0.675g, 0.7g, 0.97g

SANYO:TO-220MR, AB(SC-45, 46, TO-220AA)

Device weight:1.9g



SANYO:TO-220C1

Device weight:1.75g

SANYO:TO-220ML(SC-67, SOT-186)

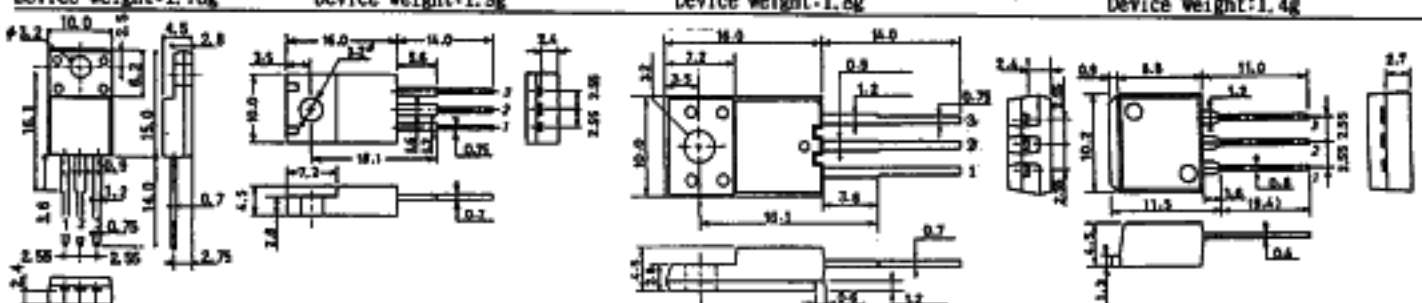
Device weight:1.5g

SANYO:TO-220P(LS)(SC-67, SOT-186)

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-3JML

Device weight:9.2g

