

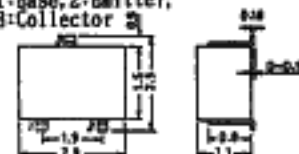
Transistors for TV Display Video Output Use

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)

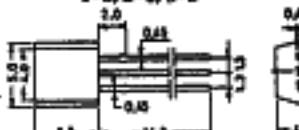
SANYO:CP

1:Base, 2:Emitter, 3:Collector



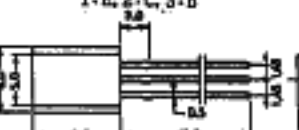
SANYO:NP

1:E, 2:C, 3:B



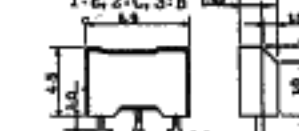
SANYO:MP

1:E, 2:C, 3:B



SANYO:MNP

1:E, 2:C, 3:B



SANYO:FLP

1:E, 2:C, 3:B



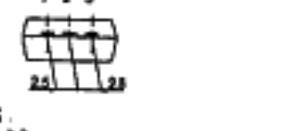
SANYO:TO-126

1:E, 2:C, 3:B



SANYO:TO-126ML

1:E, 2:C, 3:B



General-Purpose Type (※: T_c=25°C) For PNP, (-) sign is omitted.

Type No.	Package	Absolute Maximum Ratings/T _a =25°C				Electrical Characteristics/T _a =25°C					
		V _{CE0} (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	NP	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

High-Definition CRT Display Use

2SA1580/2SC4104	CP	70	60	50m	0.2	700	10 / 10	1.7/1.3	1.3/1	10	60 ~ 270
2SA1433/2SC3504	MP				0.9	700	10 / 10	1.7	1.3/1	10	60 ~ 320
2SA1370/2SC3467		NMP	200	200	0.1	1.0	150	30 / 10	2.6/1.7	1.7/1.2	30
2SA1371/2SC3468	300		300	0.1	1.0	150	30 / 10	3.1/2.6	2.3/1.8	30	40 ~ 320
2SA1710/2SC4490	MNP	300	300	0.1	1.0	70	30 / 10	3.1/2.6	2.3/1.8	30	40 ~ 320
2SA1787/2SC4650		200	200	0.1	1.0	150	30 / 10	2.6/1.7	1.7/1.2	30	40 ~ 320
2SA1828/2SC4732	FLP	200	200	0.1	1.3	150	30 / 10	2.6/1.7	1.7/1.2	30	60 ~ 320
2SA1829/2SC4733		300	300	0.1	1.3	150	30 / 10	3.1/2.6	2.3/1.8	30	60 ~ 320
2SC4884		300	300	0.1	1.5	70	30 / 10	2.6	1.8	30	60 ~ 320
2SA1352/2SC3416	TO-126	200	200	0.1	1.2	70	30 / 10	2.6/1.7	1.7/1.2	30	40 ~ 320
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

Underlined type Nos. are before mass production.

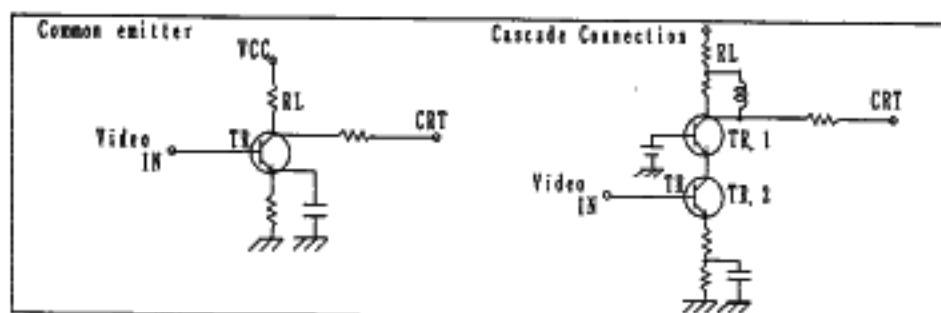
*Classification by h_{FE}

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

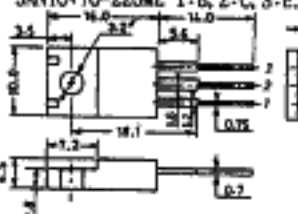
2SC5291(100~400)

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

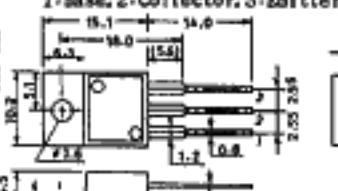


SANYO:TO-220ML 1:B, 2:C, 3:E



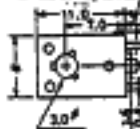
SANYO:TO-220

1:Base, 2:Collector, 3:Emitter



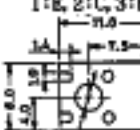
SANYO:TO-126

1:E, 2:C, 3:B



SANYO:TO-126ML

1:E, 2:C, 3:B



SANYO:TO-220ML 1:B, 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, MCP4/6, CP, CP4/5/6, CP63/5/6, 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-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.
MCP4/6	Mini Chip Pack. (RH type)
CP	Chip Pack.
CP5/6	Chip Pack. (FC type)
CP63/5/6	* Chip Pack high-power
PCP	Power Chip Pack.
PCP4/5	Power Chip Pack. (FP type)
XP	Chip Pack. (FX type)
TSSOP8	(TTS, FTS type)
SOP8	(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 (leade short type)
TO-220MF	Mini Fin 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, FF, 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

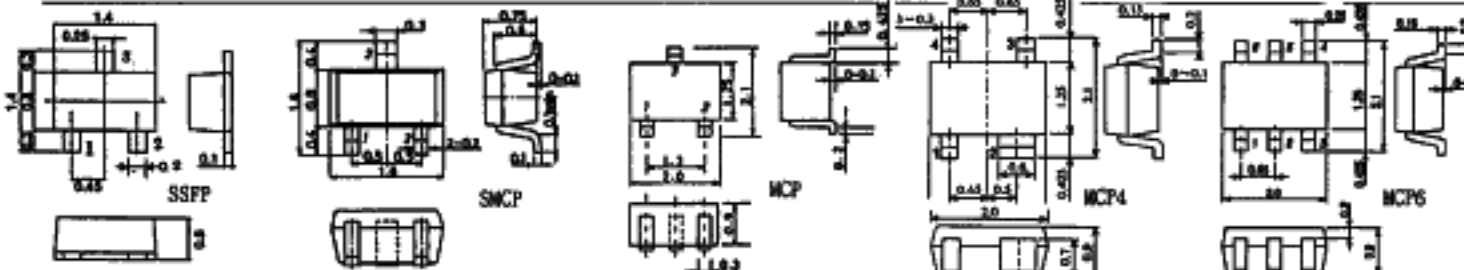
Type Nos. of 1XX or 1XXX are p-channel types.
Type Nos. of 2XX or 2XXX are n-channel types.
XP package is excluded.

*How to name CP63/6 devices. Package name followed by 1, 2, 3 or 4 and then top-digit consecutive Nos. Figures following the package names mean: 1:PNP Tr, 2:NPN Tr, 3:P-ch MOSFET, 4:N-ch MOSFET.

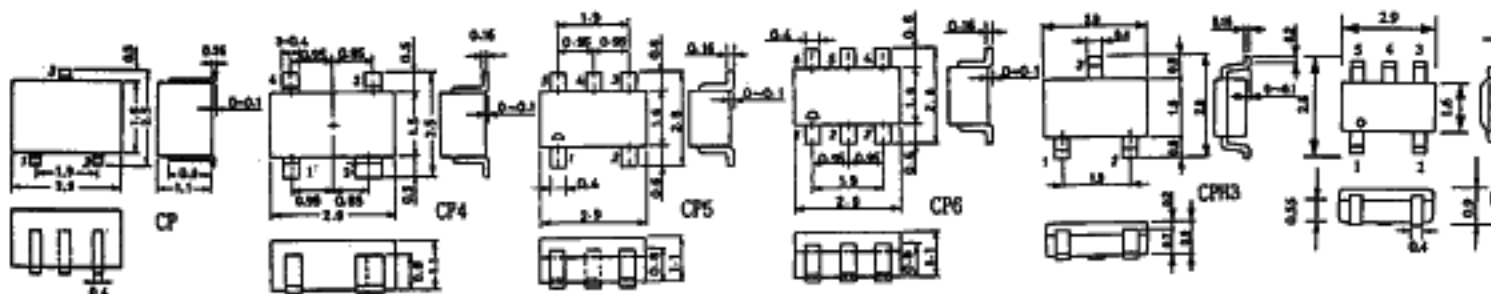
Surface Mount Type Outlines (JEDEC and EIAJ name are in parentheses.)

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

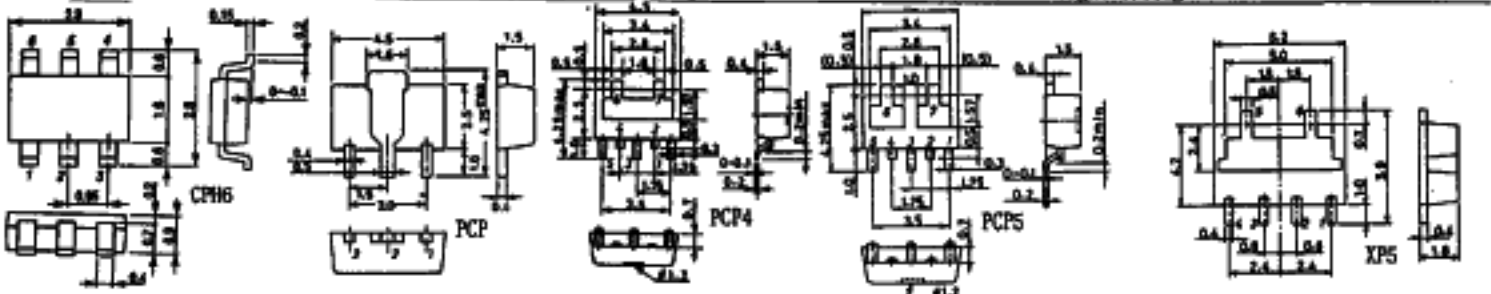
SANYO:SSFP Device weight:0.002g SANYO:SMCP(SC-75A) Device weight:0.003g SANYO:MCP(SC-7D), MCP4(SC-82, A), MCP6 Device weight:0.006g, 0.007g, 0.007g



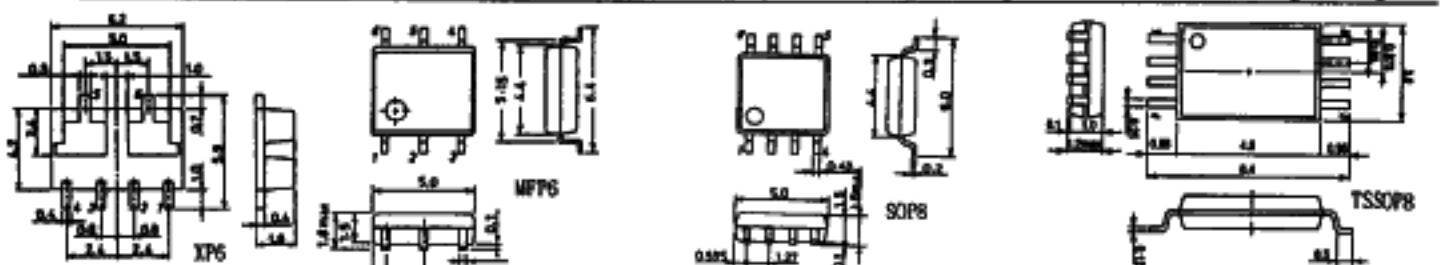
SANYO:CP(SC-69, TO-236) Device weight:0.013g SANYO:CP4, CP5, CP6(SC-61, SC-74A, SC-74, SOT143) Device weight:0.013g, 0.014g, 0.015g SANYO:CP63, CP65 Device weight:0.013g, 0.015g



SANYO:CP66 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



Continued on next page

SANYO Discrete Device Package Outlines (unit:mm)

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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:TF, TF-FA (SC-64, SC-63, TO-251)

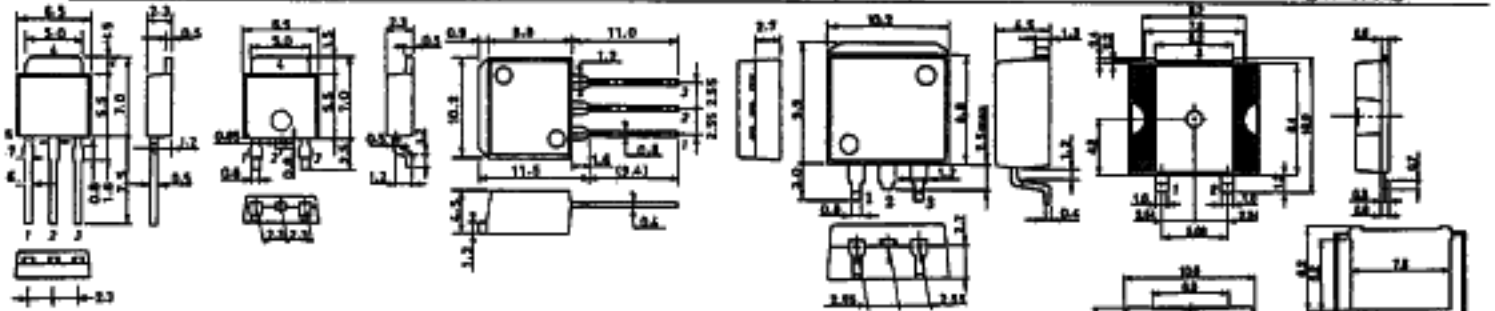
SANYO:SNP, SNP-PD (forming type) (SC-83)

SANYO:ZP

Device weight: 0.315g, 0.282g

Device weight: 1.4g

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)

SANYO:NP (SC-43A, TO-92, SOT-54)

SANYO:MP (SC-51, TO-226)

SANYO:NMP (SC-71)

SANYO:FLP

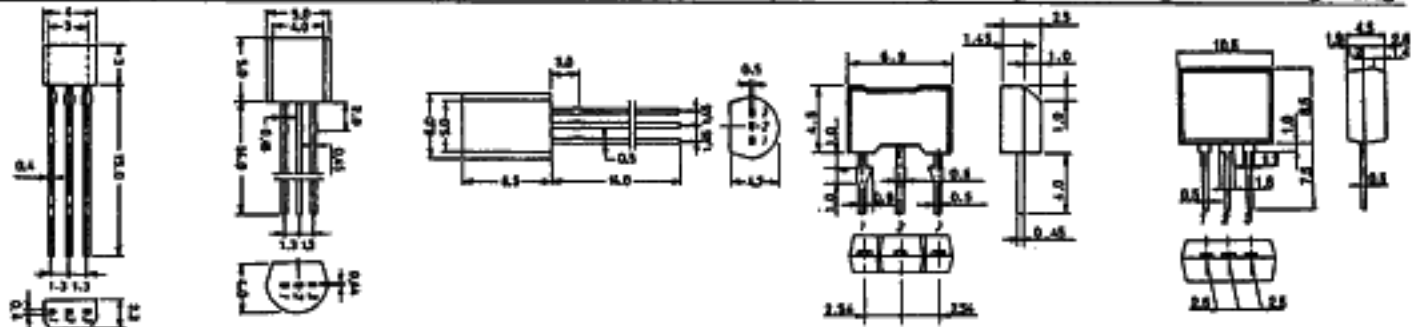
Device weight: 0.098g

Device weight: 0.269g

Device weight: 0.578g

Device weight: 0.21g, AN use: 0.275g

Device weight: 1.1g

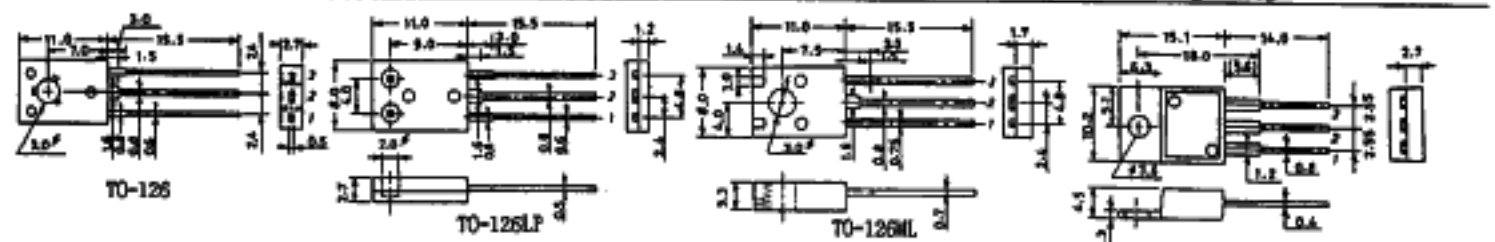


SANYO:TO-126 (TO-126, TO-225, SOT-32), TO-126LP, TO-126ML (SOT-82)

Device weight: 0.675g, 0.7g, 0.97g

SANYO:TO-220ML, AB (SC-45, 46, TO-220A)

Device weight: 1.9g



SANYO:TO-220C

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

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

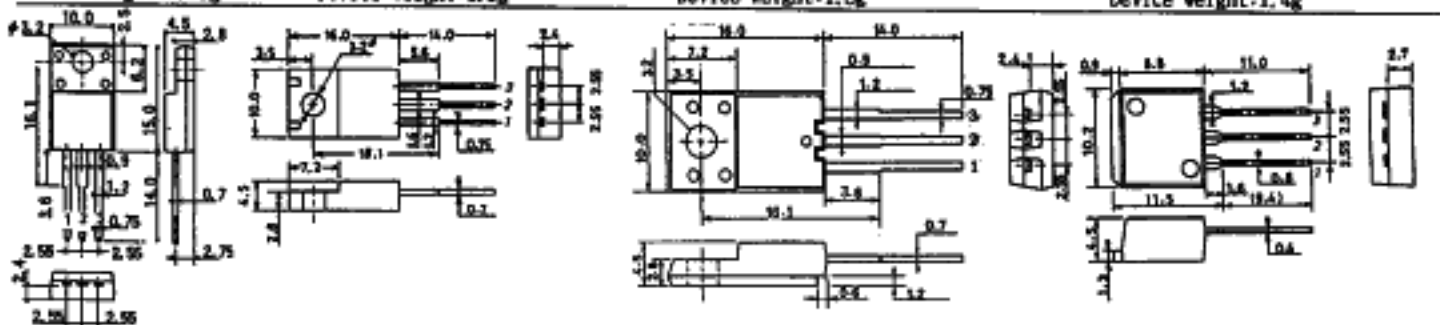
SANYO:TO-220MF

Device weight: 1.75g

Device weight: 1.9g

Device weight: 1.8g

Device weight: 1.4g



SANYO:TO-3PB (SC-65, TO-218)

SANYO:TO-3PML (180WATT218)

SANYO:TO-3PBL (TO-247)

SANYO:TO-3JML

Device weight: 5.8g

Device weight: 5.3g

Device weight: 9.2g

Device weight: 9.2g

