

General-Purpose Transistors

Sanyo general-purpose transistors are designed to meet every high-performance requirement.

They have wide application. They are easy to use because of large current capacity and wide ASO.

Small-signal Transistors.

(*:Tc=25°C). PNP. (-)sign is omitted.

Type No. ():Marking	Package	Absolute Maximum Ratings/Ta=25°C				Electrical Characteristics/Ta=25°C								
		V _{CBO} (V)	V _{CEO} (V)	I _C (A)	P _C (W)	V _{CE} (V)	I _C (mA)	h _{FE}	V _{CE} (V)	I _C (mA)	f _T (MHz)	I _C (mA)	I _B (mA)	V _{CE(sat) max} (V)
2SA1622(M) 2SC4211(L)	MCP	55	50	0.15	0.15	6	1	135 ~ 600	6	10	180 200	50	5	0.4
2SA1781(GS) 2SC4639(VT)	CP	55	50	0.15	0.2			135 ~ 600		10	180 200	50	5	0.4
2SA1782 2SC4640	SPA	55	50	0.15	0.3			140 ~ 560		10	180 200	50	5	0.4
2SA1783 2SC4641	NP	55	50	0.15	0.5			140 ~ 560		10	180 200	50	5	0.4
2SB1142 2SD1682	TO-126 ML	60	50	2.5 *10	1.5	2	100	100 ~ 400 100 ~ 560	10	50	140	1000	50	0.5 0.3

h F E Rank Classification.

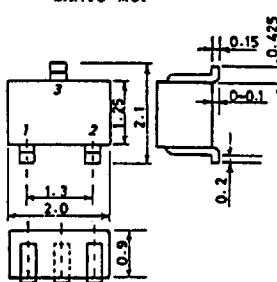
MCP, CP:外形

100 R 200	140 S 280	200 T 400	280 U 560
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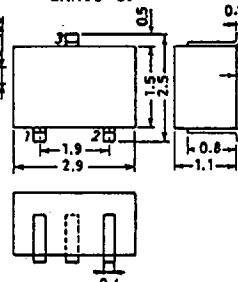
135	5	270	200	6	400	300	7	600
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Case Outlines (unit:mm)

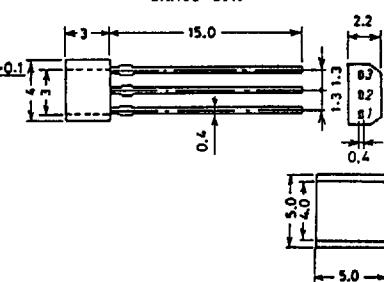
SANYO:MCP



SANYO:CP



SANYO:SPA



Technical drawing of a SANYO TO-126ML component. The drawing shows a side view of the component with various dimensions labeled in millimeters. Key dimensions include a total width of 11.0, a central slot width of 7.5, and a central slot height of 3.0. The drawing also shows a central circular hole with a diameter of 3.0, and a central slot depth of 1.6. The overall height of the component is 15.5. On the right side, there is a vertical slot with a height of 1.7 and a width of 2.6. The bottom of the component has a slot with a height of 0.7 and a width of 0.44. The drawing is labeled 'NP' in the bottom left corner.

lead type 1:Emitter, 2:Collector, 3:Base

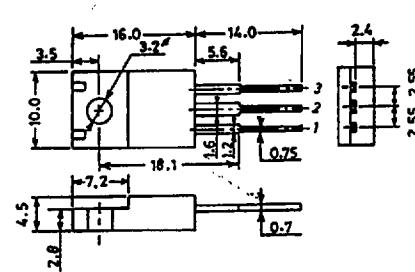
Large-Signal Transistors

Type No.	Package	Absolute Maximum Ratings/Ta=25°C				Electrical Characteristics/Ta=25°C											
		V _{CBO} (V)	V _{CEO} (V)	I _C (A)	P _C Tc=25°C (W)	V _{CE} (V)	I _C (A)	h _{FE}	V _{CE} (V)	I _C (A)	f _T typ (MHz)	I _C (A)	I _B (A)	V _{CE(sat)} max (V)			
2SB1133	TO-220ML	60	60	3	25	5	0.5	70 ~ 280	5	0.5	40	2	0.2	1			
2SD1666					20	5	0.5	70 ~ 280			8						
2SB1274					20	5	0.5	70 ~ 280			100						
2SD1913																	

b F E Rank Classification.

Case Outlines(unit:mm) 1:Base, 2:Collector, 3:Emitter
SANYO:TO-220ML

79 Q 140 109 R 200 140 S 280



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, CPH3/5/6, PCP, PCP4/5, XP5/6, TP, TP-FA, MFP6, TSSOP8, SOP8, SPA, NP, MP, NMP, FLP, TO-126, TO-126ML, TO-126LP
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Large-Signal Transistors

ZP, SMP, SMP-FD, TO-220, TO-220C1, TO-220ML, TO-220FI (LS), TO-220MF, TO-3PB, TO-3PML, TO-3PBL, TO-3JML.
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ac 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. (FH type)
CP	Chip Pack.
CP5/6	Chip Pack. (FC type)
CPH3/5/6	* Chip Pack high-power
PCP	Power Chip Pack.
PCP4/5	Power Chip Pack. (FP type)
XP	(FX type)
TSSOP8	(FTS, FTD type)
SOP8	(FW, FSS type)
TP-FA	Tiny Package
SMP-FD	For large signal
ZP	For large signal

Lead Types

ML: No insulating needed.

NMP	New MP
FLP	Full Mold Large Package
TO-126LP	Large-Power
TO-126ML	Micaless
TO-220	TO-220ML
TO-220C1	ML: Micaless type
TO-220FI (LS)	CI: Compact Isolation
TO-220MF	Full Isolation (lead short type)
TO-3PB	Mini Fin Short fin type.
TO-3PML	Bushless, ML: Micaless
TO-3PBL	Micaless
TO-3JML	Bushless Large
	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, MCP4/6, PCP4/5, XP5/6, SOP8, TSSOP8)
- 2'nd S: SOP8 package
- 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 CPH3/6 devices. Package name followed by 1, 2, 3 or 4 and then two-digit consecutive Nos. Figures following the package names mean: 1:PNP Tr, 2:PNP Tr, 3:P-ch MOSFET, 4:N-ch MOSFET.

ac 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.

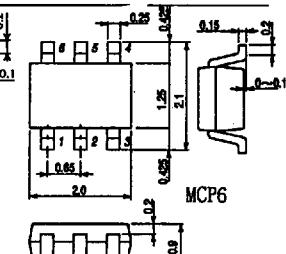
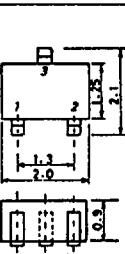
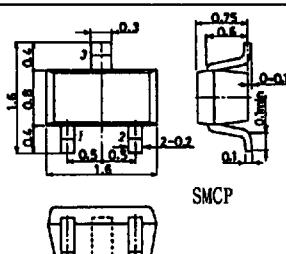
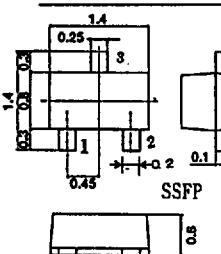
SANYO: SSFP

SANYO: SMCP (SC-75A)

Device weight: 0.002g

SANYO: MCP (SC-70), MCP4 (SC-82, A), MCP6

Device weight: 0.006g, 0.007g, 0.007g



SANYO: CP (SC-59, TO-236)

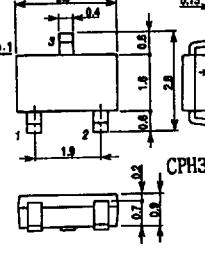
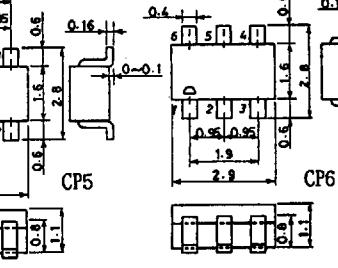
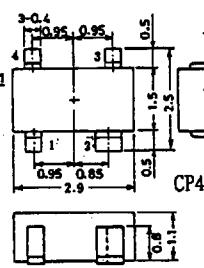
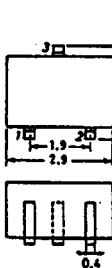
Device weight: 0.013g

SANYO: CP4, CP5, CP6 (SC-61, SC-74A, SC-74, SOT143)

Device weight: 0.013g, 0.014g, 0.015g

SANYO: CPH3, CPH5

Device weight: 0.013g, 0.015g



SANYO: CPH6

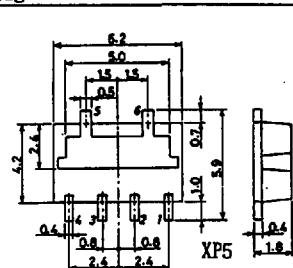
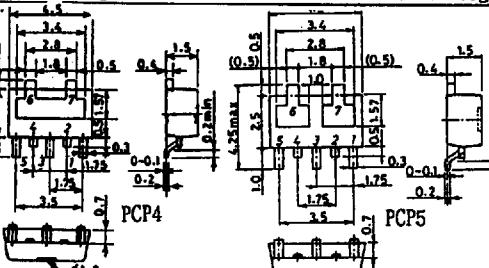
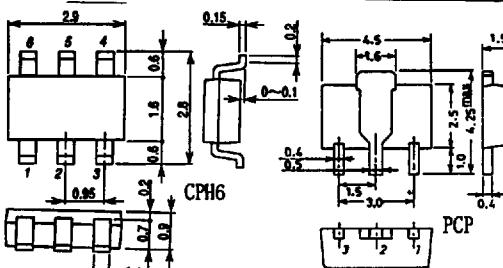
Device weight: 0.015g

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

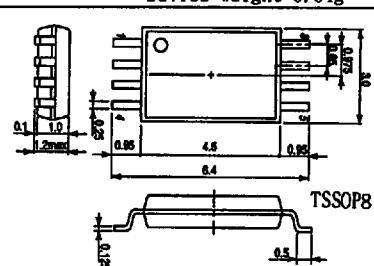
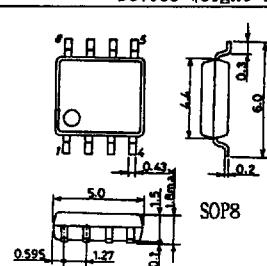
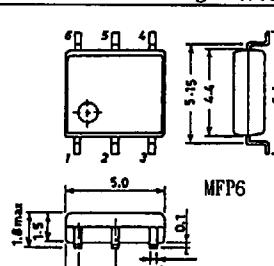
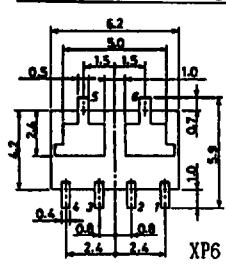
Device weight: 0.089g

SANYO: SOP8

Device weight: 0.093g

SANYO: TSSOP8

Device weight: 0.04g



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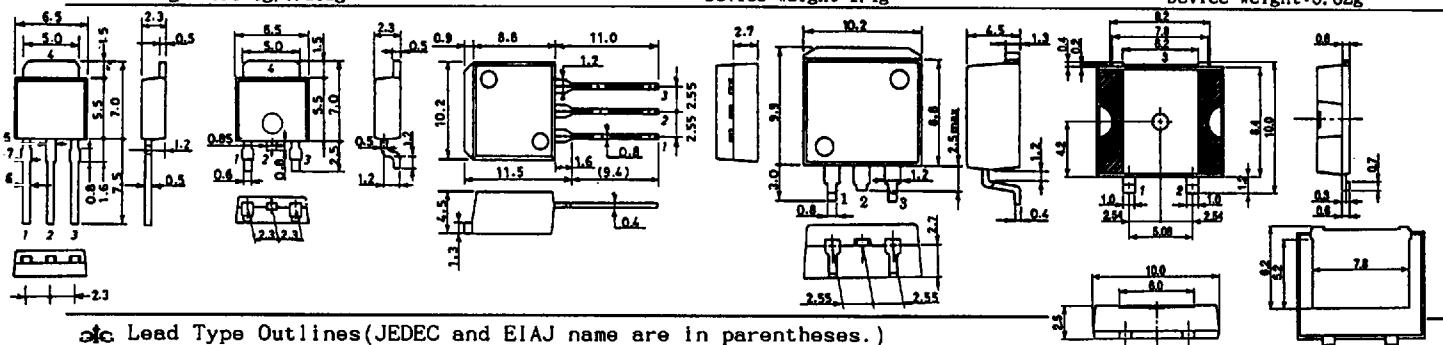
SANYO Discrete Device Package Outlines (unit: mm)

3C 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

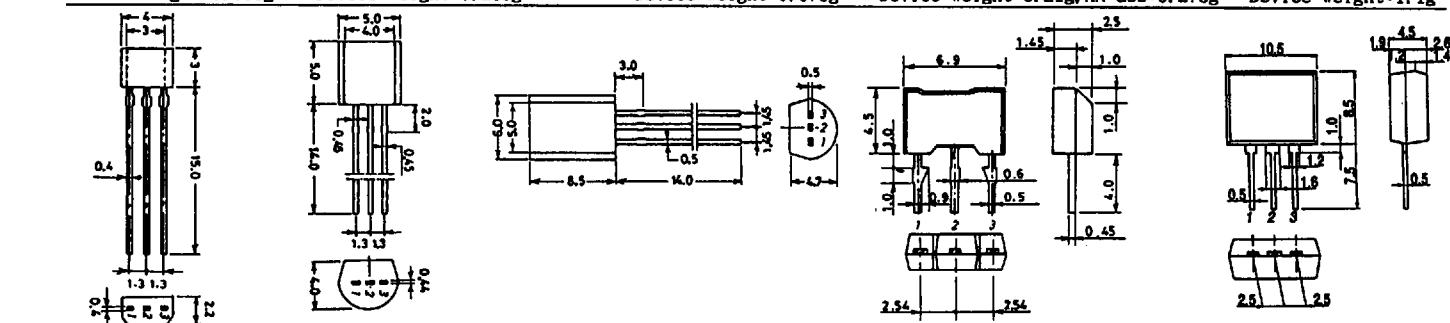
SANYO:SMP, SMP-FD(forming type)(SC-83)
Device weight: 1.4g

SANYO:ZP
Device weight: 0.62g



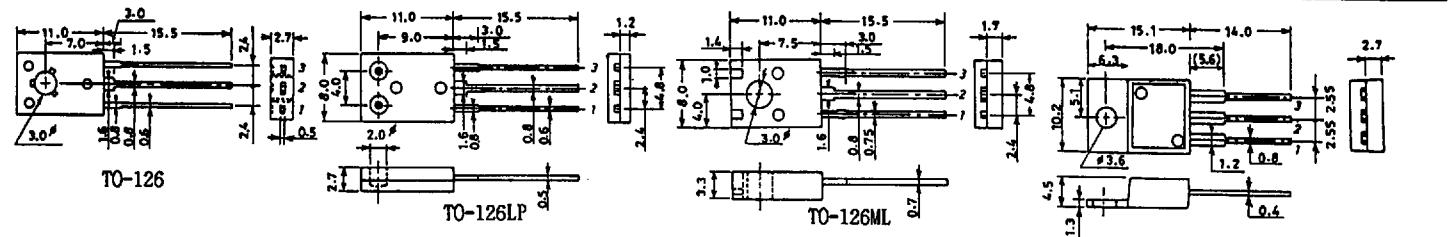
3C Lead Type Outlines (JEDEC and EIAJ name are in parentheses.)
Top View (Pin No.: CAD register Nos.)

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

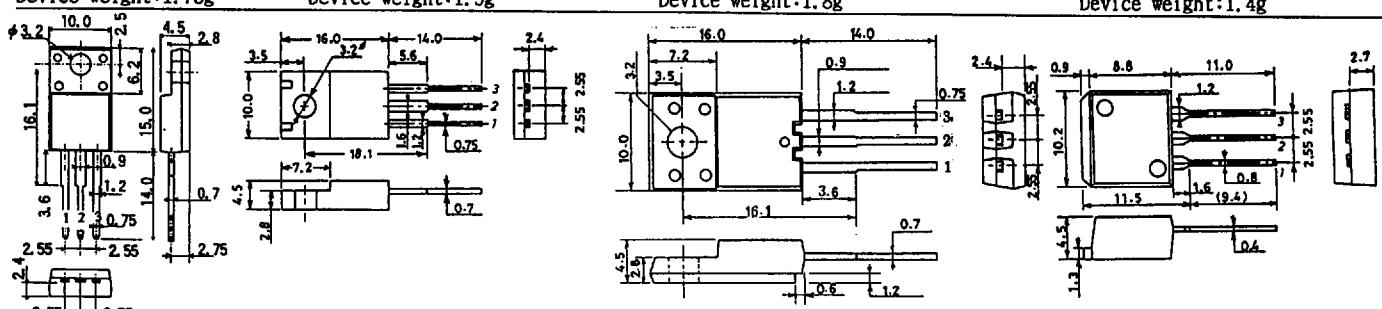


SANYO:TO-220CI
Device weight: 1.75g

SANYO:TO-220ML(SC-67, SOT-186)
Device weight: 1.9g

SANYO:TO-220FI(LS)(SC-67, SOT-189)
(SOT-186, 1SOWATT220)
Device weight: 1.8g

SANYO:TO-220MF
Device weight: 1.4g

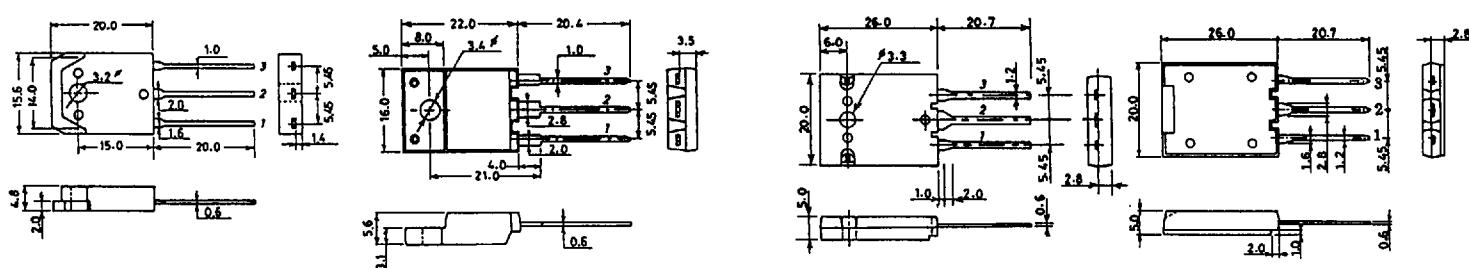


SANYO:TO-3PB(SC-65, TO-218)
Device weight: 5.8g

SANYO:TO-3PML(1SOWATT218)
Device weight: 5.3g

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

SANYO:TO-3JML
Device weight: 9.2g



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