

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	1.5 *10	2	100	100 ~ 400 100 ~ 560	10	50	140	1000	50	0.5 0.3

h F E Rank Classification.

100 R 200	140 S 280	200 T 400	280 U 560	135 5 270	200 6 400	300 7 600
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MCP, CP:外形

Case Outlines(unit:mm)

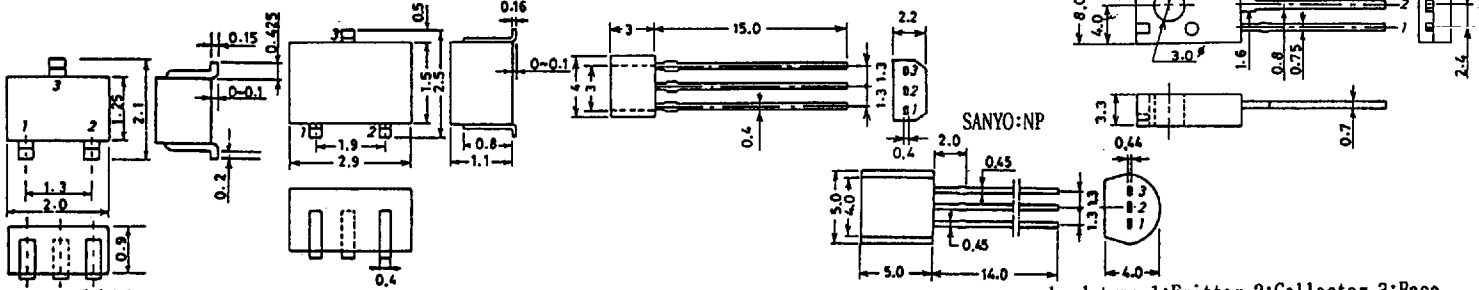
SANYO:MCP

SANYO:CP

SANYO:SPA

SANYO:NP

SANYO:TO-126ML



1:Base, 2:Emitter, 3:Collector

JEDEC :TO-92
EIAJ :SC-43

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

For PNP, (-)sign is omitted.

Large-Signal Transistors

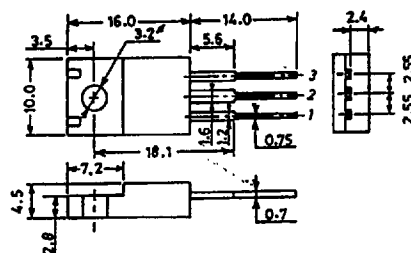
Type No.	Package	Absolute Maximum Ratings/Ta=25°C				Electrical Characteristics/Ta=25°C								
		V _{CBO} (V)	V _{CEO} (V)	I _C (A)	P _C Tc=25°C (W)	V _{CE} (V)	I _C (A)	h _{FE}	V _{CE} (V)	I _C (A)	f _T typ (MHz)	I _C (A)	I _B (A)	V _{CE(sat)} max (V)
2SB1133 2SD1666	TO-220ML	60	60	3	25	5	0.5	70 ~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

h F E Rank Classification.

70 Q 140	100 R 200	140 S 280
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Case Outlines(unit:mm) 1:Base, 2:Collector, 3:Emitter

SANYO:TO-220ML



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

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

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

NMP New MP
 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, 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 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

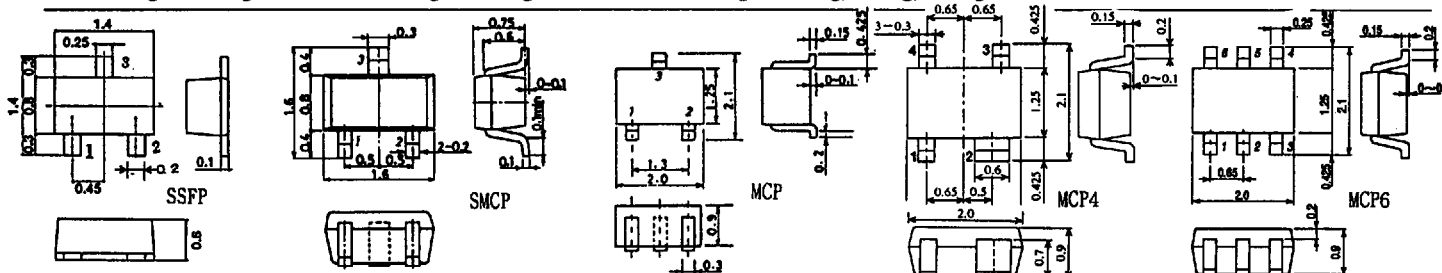
Type Nos. of 1XX or 1XXX are p-channel types.
 Type Nos. of 2XX or 2XXX are N-channel types.
 XP package is excluded.

*:How to name CPH3/6 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.

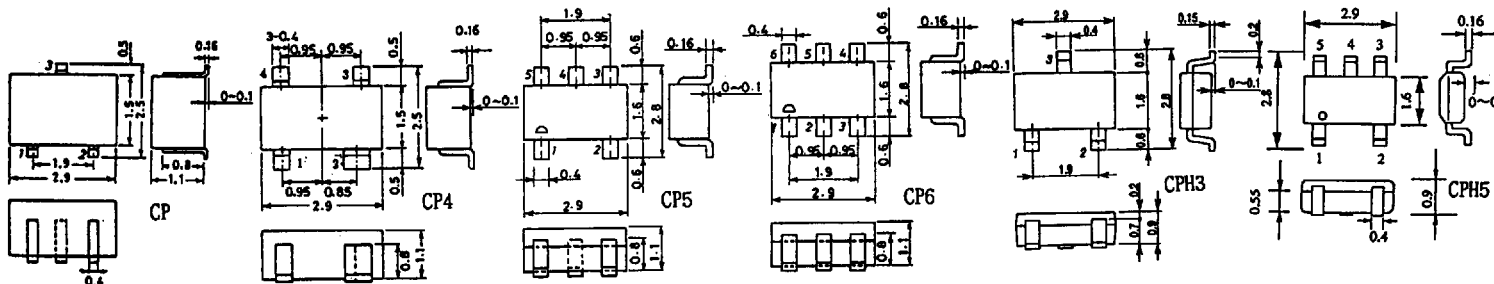
Surface Mount Type Outlines (JEDEC and EIAJ name are in parentheses.)

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

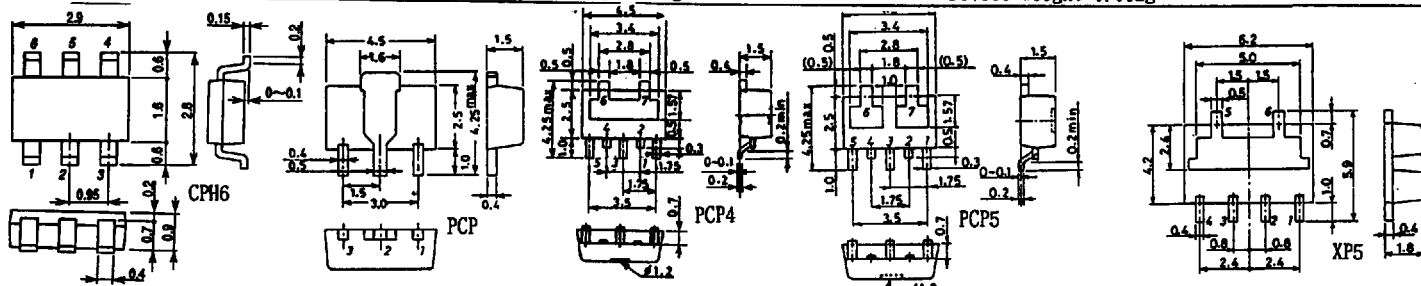
SANYO:SSFP SANYO:SMCP(SC-75A) SANYO:MCP(SC-70), MCP4(SC-82, A), MCP6
 Device weight:0.002g Device weight:0.003g Device weight:0.006g, 0.007g, 0.007g



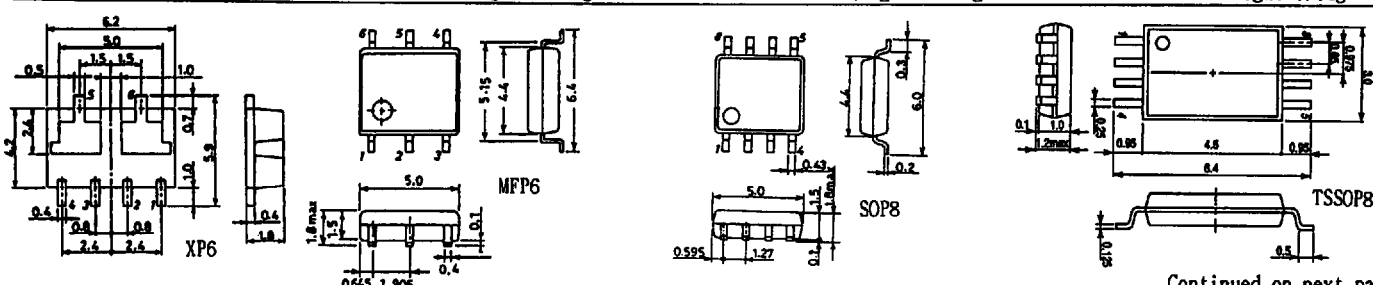
SANYO:CP(SC-59, TO-236) SANYO:CP4, CP5, CP6(SC-61, SC-74A, SC-74, SOT143) SANYO:CPH3, CPH5
 Device weight:0.013g Device weight:0.013g, 0.014g, 0.015g Device weight:0.013g, 0.015g



SANYO:CPH6 SANYO:PCP, PCP4/5(SC-62, SOT89) Bottom View SANYO:XP5 Bottom View
 Device weight:0.015g Device weight:0.058g, 0.052g Device weight:0.062g



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



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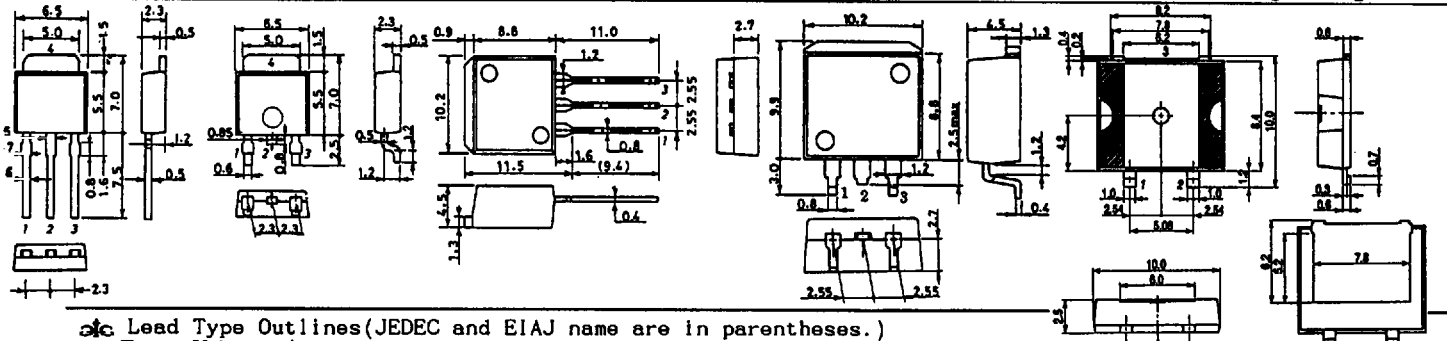
SANYO Discrete Device Package Outlines (unit:mm)

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

SANYO: ZP
 Device weight: 0.62g



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

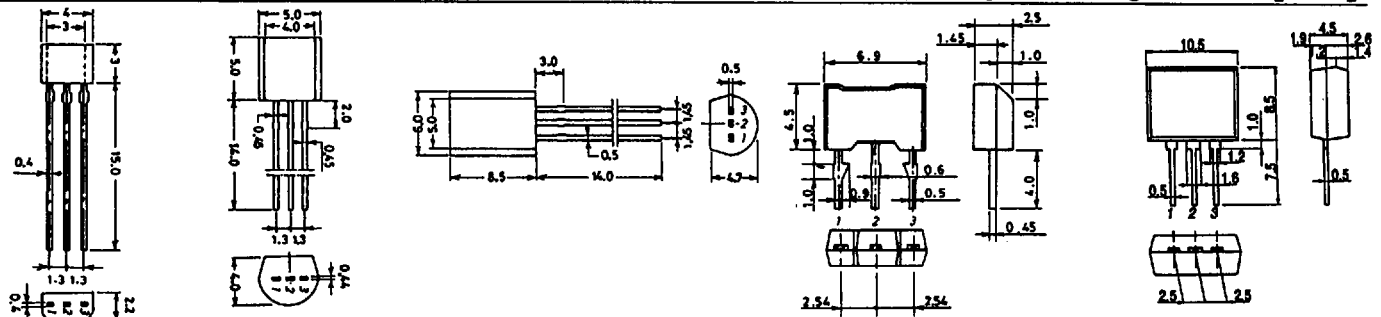
SANYO: SPA (TO-18, TO-39)
 Device weight: 0.098g

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

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

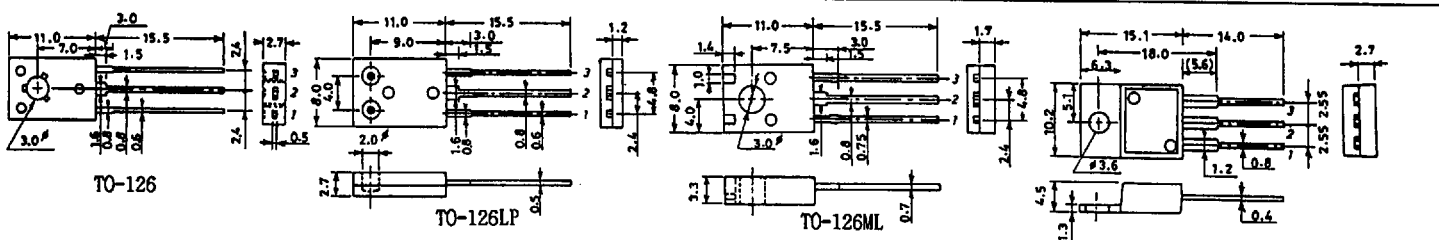
SANYO: NMP (SC-71)
 Device weight: 0.21g, AN use: 0.275g

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

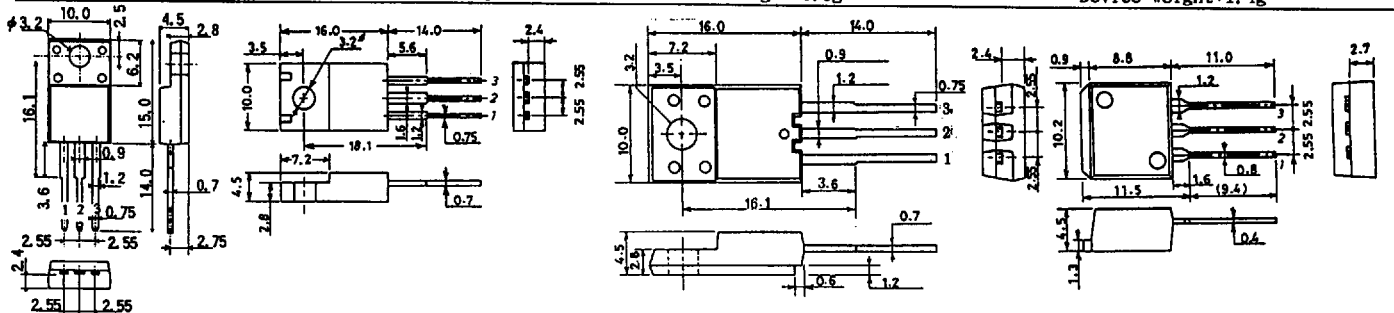


SANYO: TO-220CI
 Device weight: 1.75g

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

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

SANYO: TO-220MF
 Device weight: 1.4g

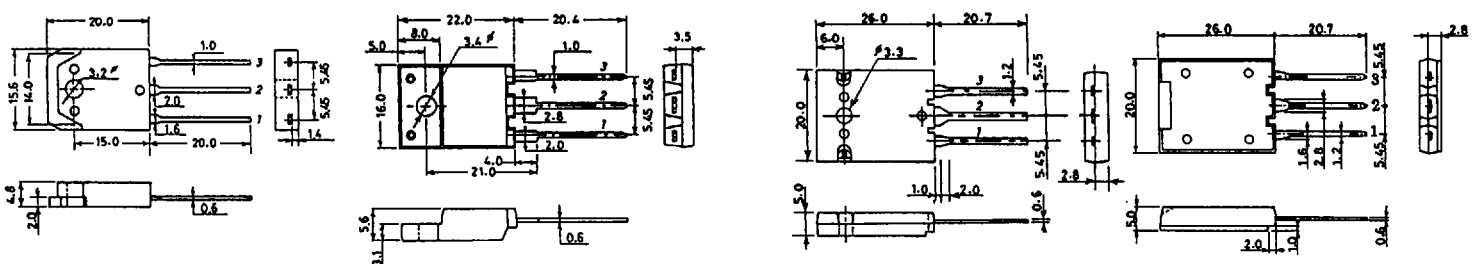


SANYO: TO-3PB (SC-65, TO-218)
 Device weight: 5.8g

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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