

3SK107



2031A

N-Channel MOS
Silicon Field-Effect Transistor (Dual Gate)

T-31-25

High Frequency General-Purpose Amp Applications

©9858

Use

- FM tuners and VHF tuners

Features

- High power gain and small noise figure
- Large forward transfer admittance

Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$

Absolute Maximum Ratings at Ta=25°C			unit
Drain-Source Voltage	VDS	20	V
Gate 1-Source Voltage	VG1S	±7	V
Gate 2-Source Voltage	VG2S	±7	V
Drain Current	ID	30	mA
Allowable Power Dissipation	PD	250	mW
Channel Temperature	Tch	125	°C
Storage Temperature	Tstg	-55 to +125	°C

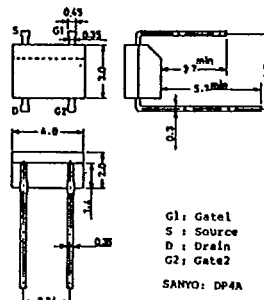
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

Electrical Characteristics at Ta=25°C		min	typ	max	unit
Drain-Source Voltage	V _{DS}	V _{G1S} =-7V, V _{G2S} =0, I _D =10uA		20	V
Gate1-S Breakdown Voltage	V(BR)G1SS	I _{G1} =10uA, V _{DS} =0, V _{G2S} =0		±7	V
Gate2-S Breakdown Voltage	V(BR)G2SS	I _{G2} =10uA, V _{DS} =0, V _{G1S} =0		±7	V
Gate1-S Cutoff Voltage	V _{G1S} (off)	V _{DS} =10V, V _{G2S} =4V, I _D =100uA		-3	V
Gate2-S Cutoff Voltage	V _{G2S} (off)	V _{DS} =10V, V _{G1S} =0V, I _D =100uA		-2.5	V
Gate 1 Leak Current	I _{G1SS}	V _{G1S} =±7V, V _{DS} =0, V _{G2S} =0		±50	nA
Gate 2 Leak Current	I _{G2SS}	V _{G2S} =±7V, V _{DS} =0, V _{G1S} =0		±50	nA
Drain Current	I _{DSS}	V _{DS} =10V, V _{G1S} =0, V _{G2S} =4V		2.5*	mA
Forward transfer Admittance	y _{fs}	V _{DS} =10V, V _{G2S} =4V, I _D =10mA f=1KHz		17	mS
Reverse Transfer Capacitance	c _{rss}	V _{DS} =10V, V _{G2S} =4V, V _{G1S} =0 f=1MHz		0.02	0.05 pF
Input Capacitance	c _{iss}	V _{DS} =10V, V _{G2S} =4V, V _{G1S} =0 f=1MHz		5.5	pF
Output Capacitance	c _{oss}	V _{DS} =10V, V _{G2S} =4V, V _{G1S} =0 f=1MHz		4.6	pF
Power Gain	P _G	V _{DS} =10V, V _{G2S} =4V, I _D =10mA f=100MHz		20	26 dB
Noise Figure	NF	V _{DS} =10V, I _D =10mA, V _{G2S} =4V f=100MHz		2.2	3.5 dB

* The 3SK107 is classified by Ipss as follows (unit: mA):

2.5	E	6.0	5.0	F	12.0	10.0	G	24.0
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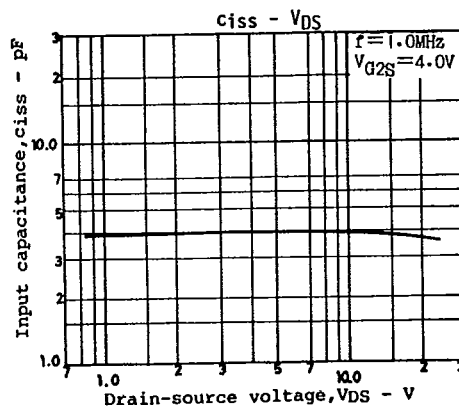
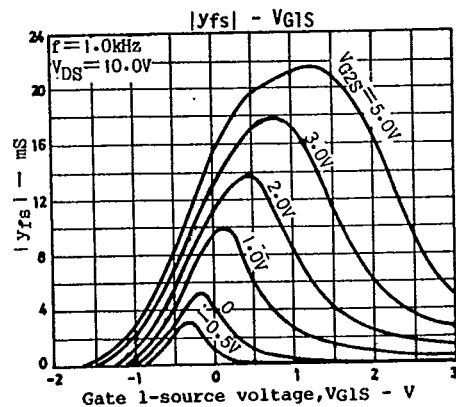
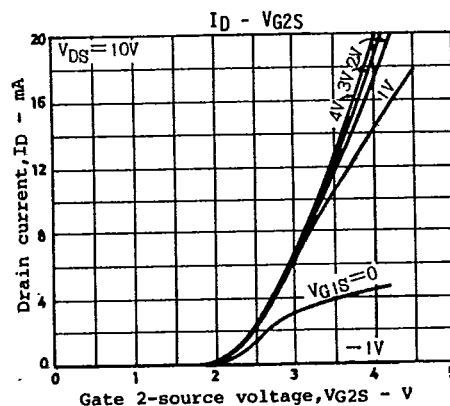
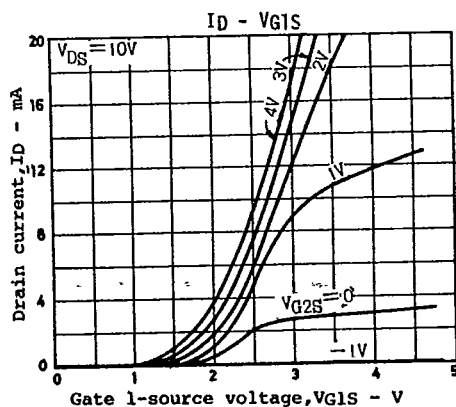
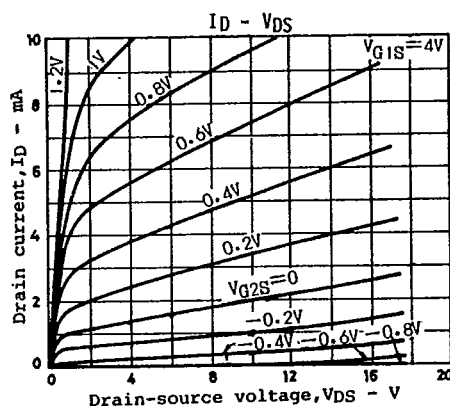
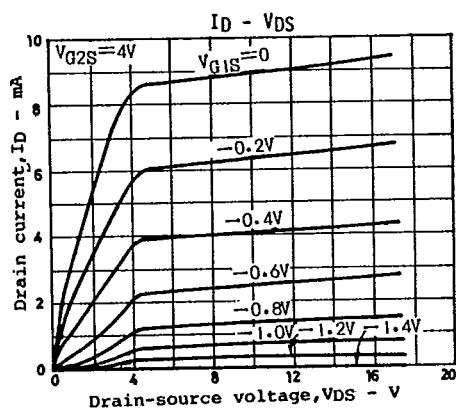
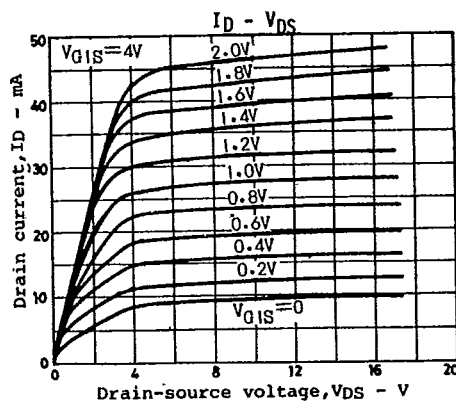
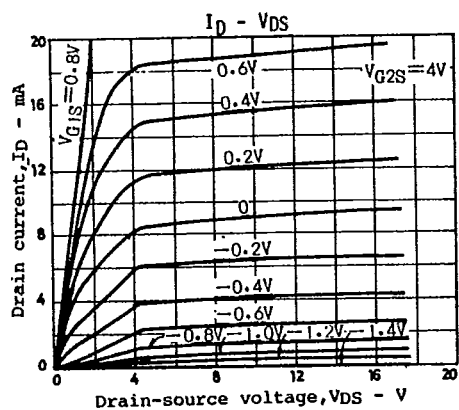
Case Outline 2031A
(unit:mm)



G1: Gate1
S : Source
D : Drain
G2: Gate2
SANYO: DP41

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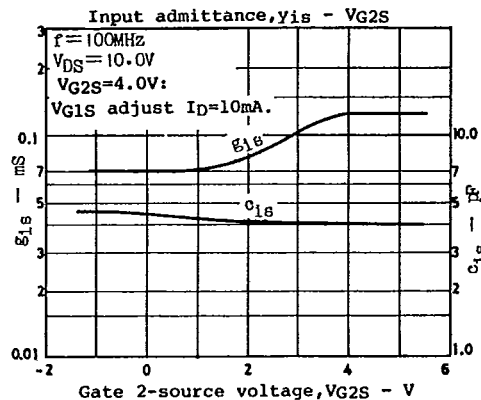
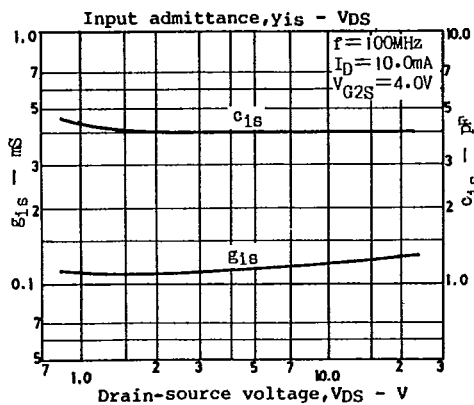
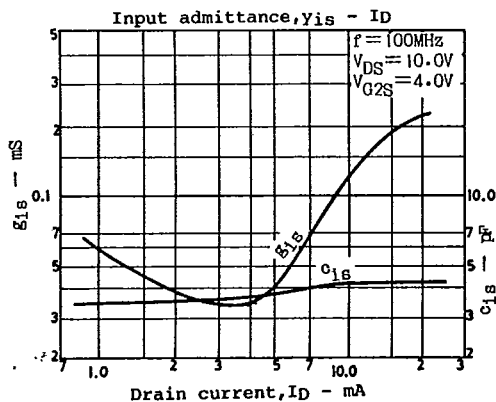
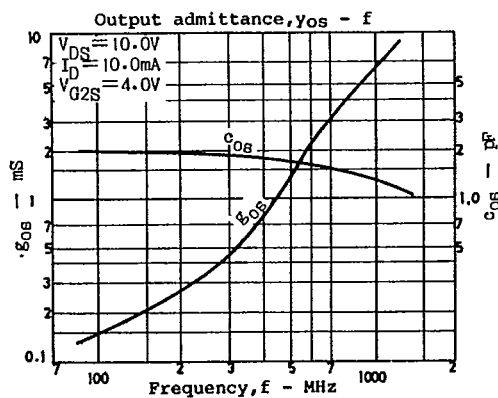
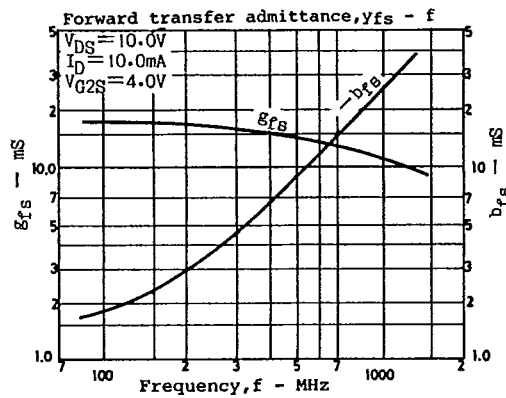
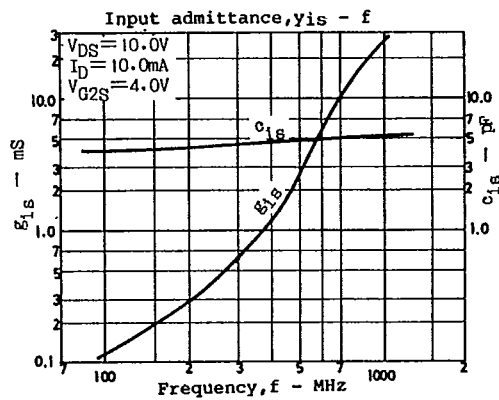
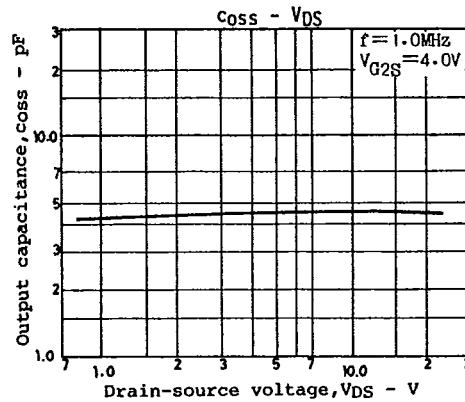
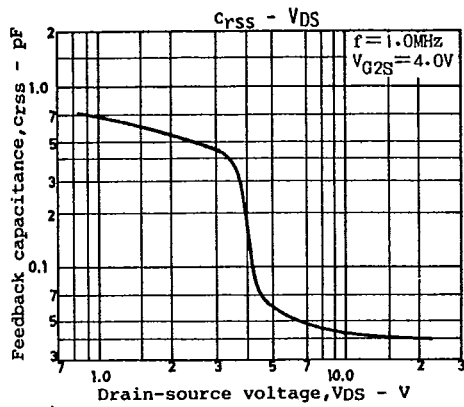
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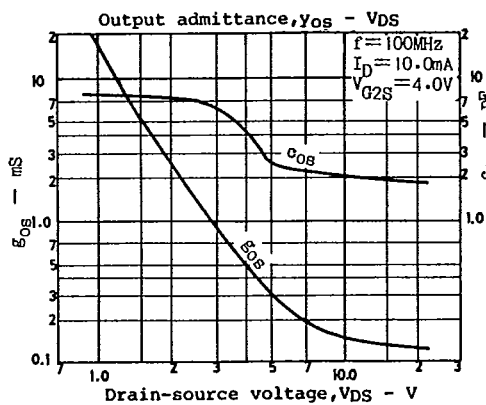
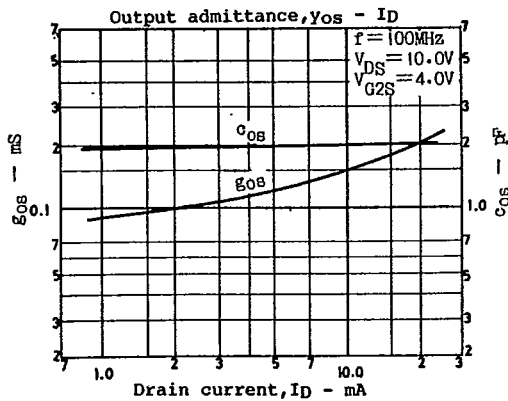
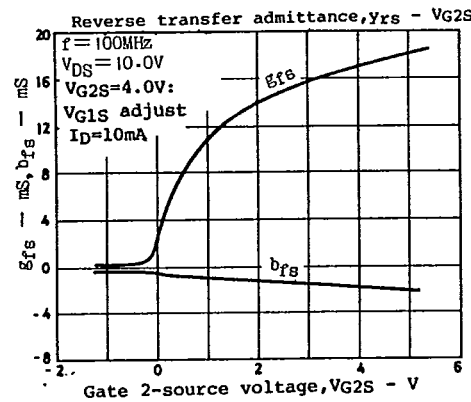
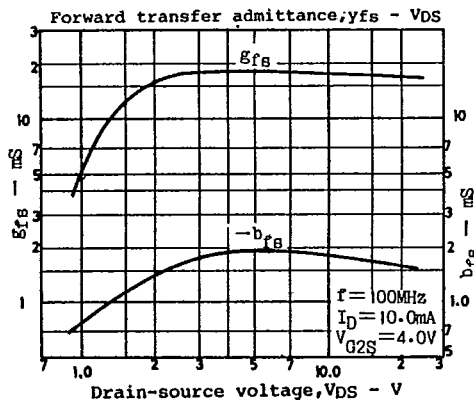
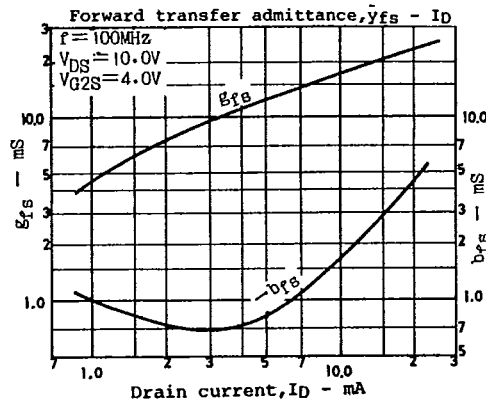
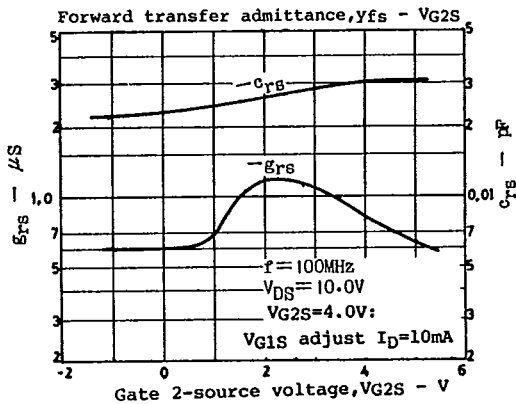
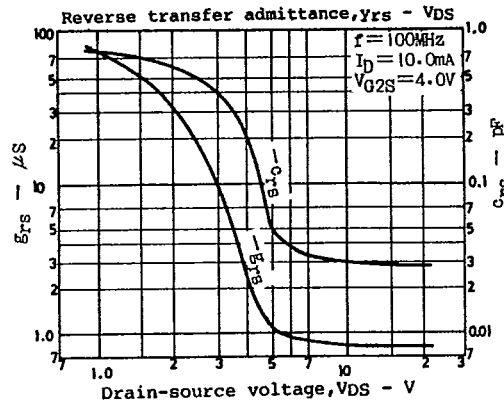
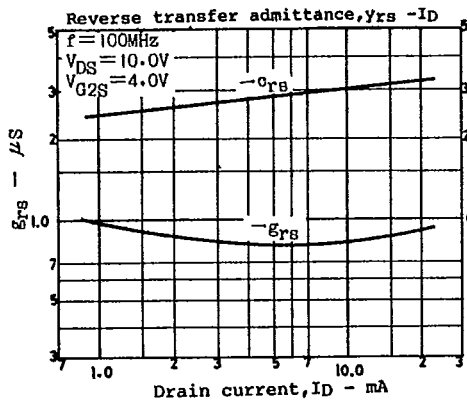
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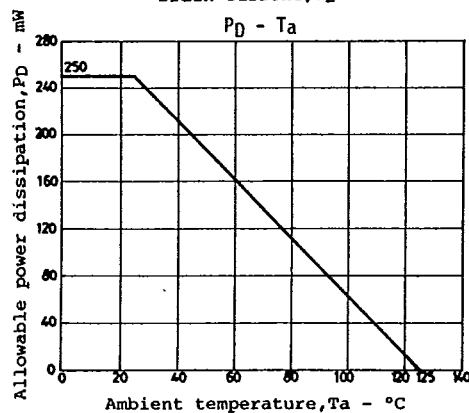
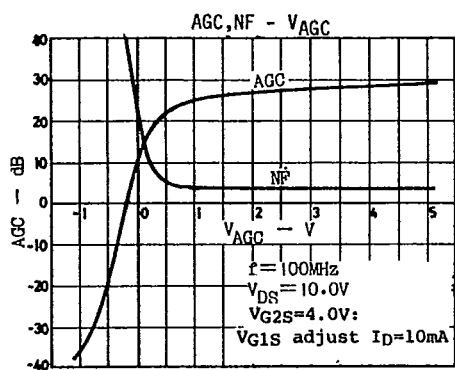
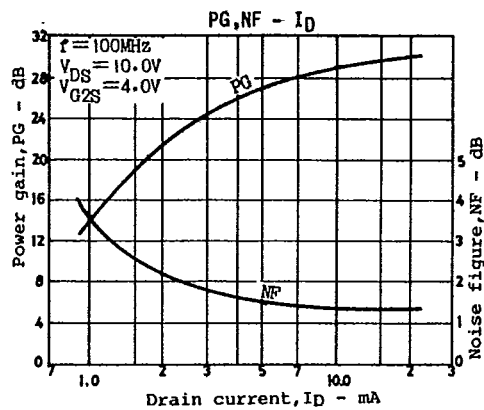
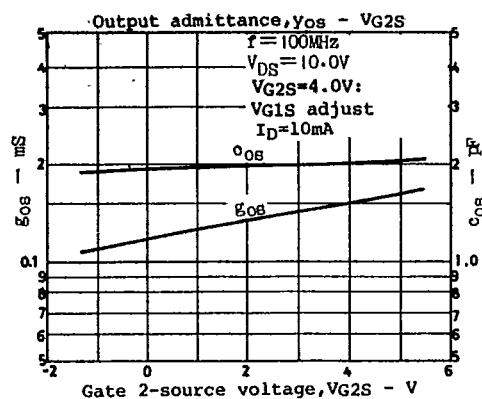
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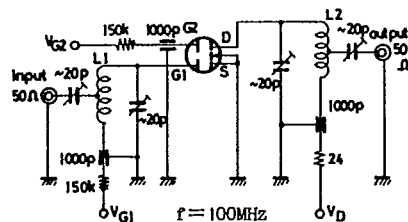


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PG, NF, AGC Characteristics Test Circuit



- L1: 1mm ϕ plated wire 10mm ϕ 4T, tap: 1T from gate side
 L2: 1mm ϕ plated wire 10mm ϕ 6T, tap: 1T from drain side

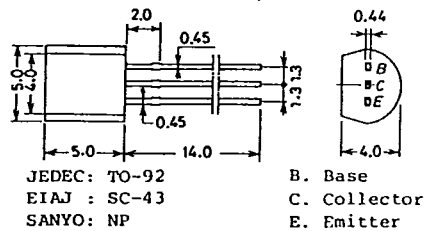
T-91-20

CASE OUTLINES AND ATTACHMENTS

- All of Sanyo Transistor case outlines are illustrated below.
- All dimensions are in mm, and dimensions which are not followed by min. or max. are represented by typical values.
- No marking is indicated.

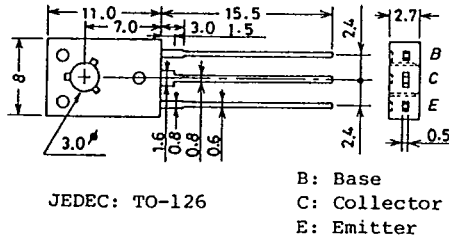
Case Outline—[2003A]

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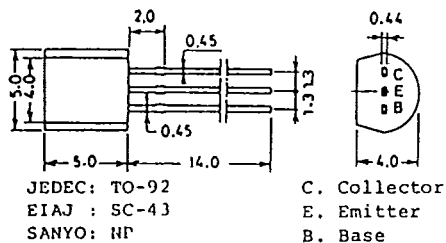
Case Outline—[2009A]

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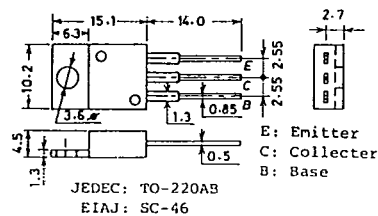
Case Outline—[2004A]

unit:mm



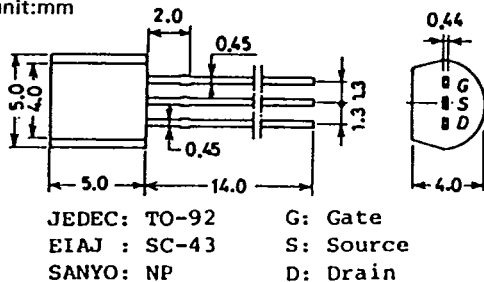
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unit:mm



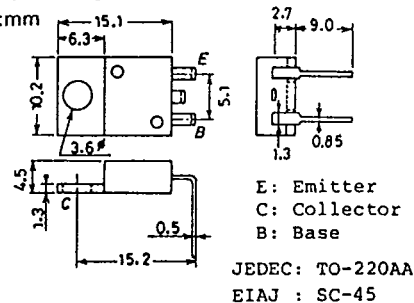
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unit:mm



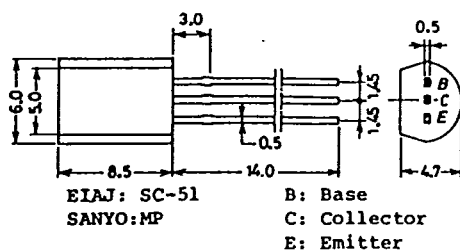
Case Outline—[2012]

unit:mm



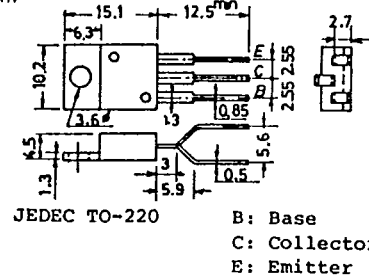
Case Outline—[2006A]

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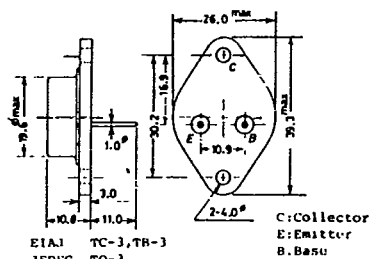


Case Outline—[2013]

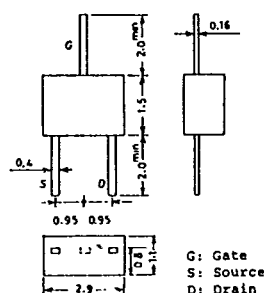
unit:mm



unit:mm

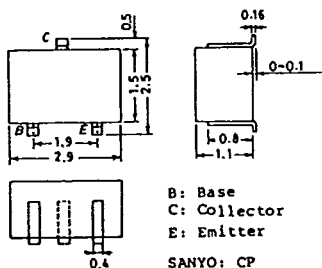


unit:mm

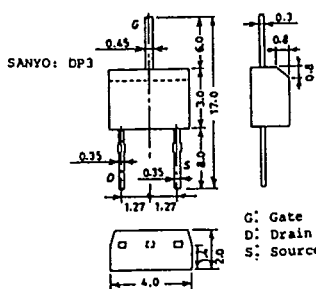


T-91-20

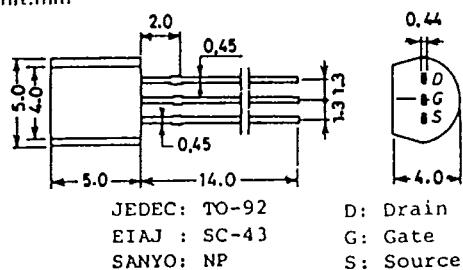
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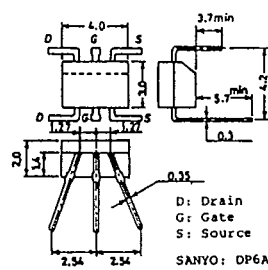
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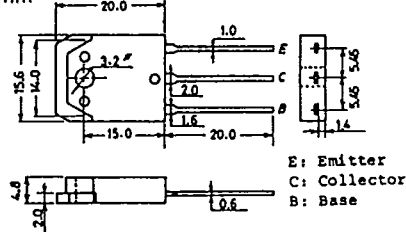
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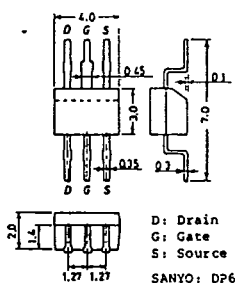
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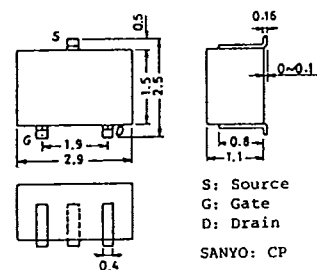
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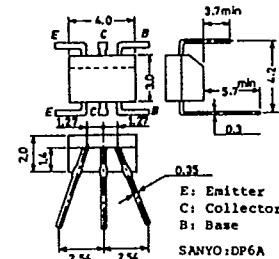
unit:mm



unit:mm



unit:mm



E: Emitter
C: Collector
B: Base
SANYO: DP6B

E: Emitter
C: Collector
B: Base

G1: Catw1
\$: Source
D-r Drain
G2: Gate2
SANYO: OP4A

E: Emitter
C: Collector
B: Base

SANYO:TO3PML

B: Base
C: Collector
E: Emitter
SANYO: SPA

G: Gate
S: Source
D: Drain
SANYO: SPA

D: Drain
G: Gate
S: Source
SANYO: SPA

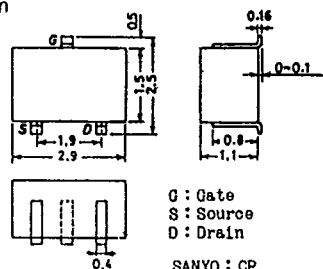
SANYO: TO220ML

D: Drain
G: Gate
S: Source
SANYO: SP'

SANYO: TO126ML

T-91-20

unit:mm

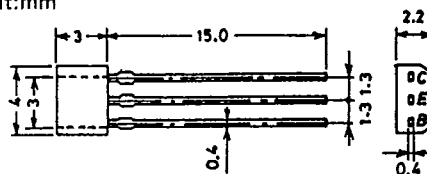


SANYO: TO126LP

G : Gate
S : Source
D : Drain

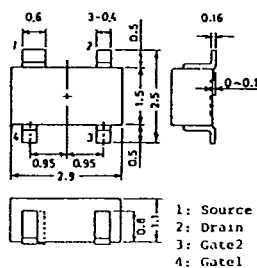
SANYO : CP

unit:mm



C: Collector
E: Emitter
B: Base
SANYO: SPA

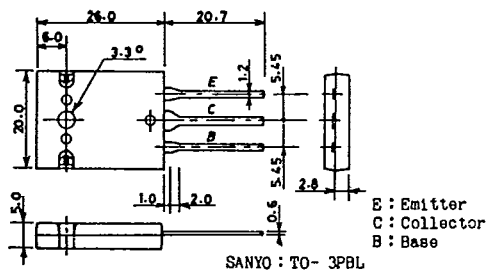
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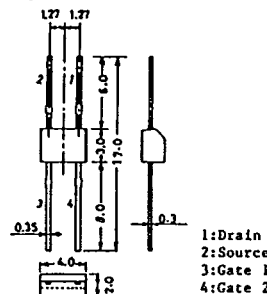
JEDEC: TO-220AB
EIAJ: SC-46

1:Source
2:Drain
3:Gate

unit:mm

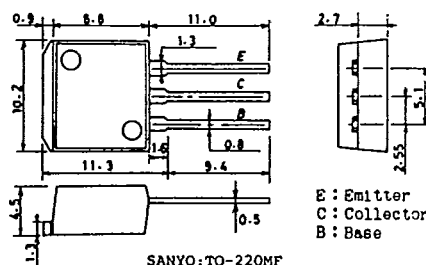


SANYO : TO- 3PBL

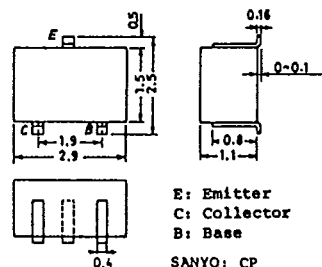


1: Drain
2: Source
3: Gate 1
4: Gate 2

unit:mm



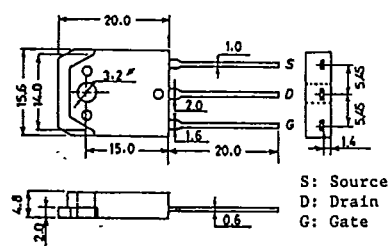
SANYO:TO-220MF



E: Emitter
C: Collector
B: Base

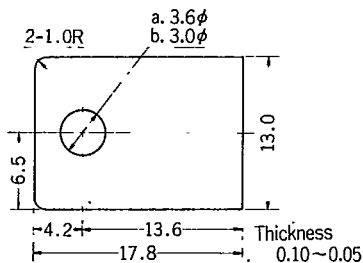
SANYO: CP

Case Outline—[2056] unit:mm



SANYO: TO3PB

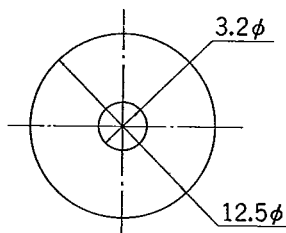
Case Outline—[0008] unit:mm

a. IS-313B
b. IS-313D

SANYO

Case Outline—[0004] unit:mm

unit:mm

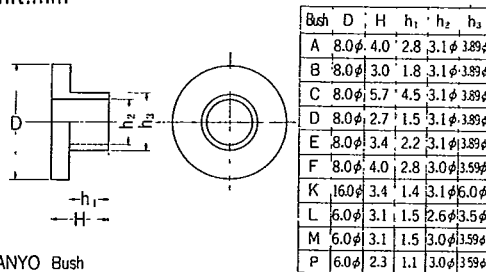


SANYO IS-126

Thickness : 0.075

Case Outline—[0009] unit:mm

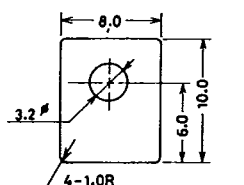
unit:mm



SANYO Bush

Case Outline—[0005] unit:mm

unit:mm

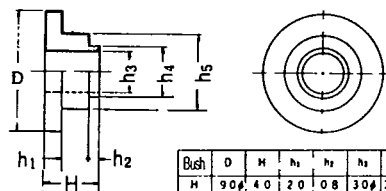


Thickness : 0.075

SANYO IS-126A Mica

Case Outline—[0010] unit:mm

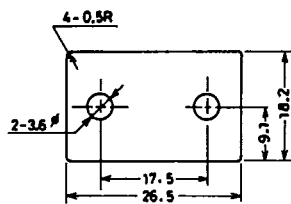
unit:mm



SANYO Bush

Case Outline—[0006] unit:mm

unit:mm

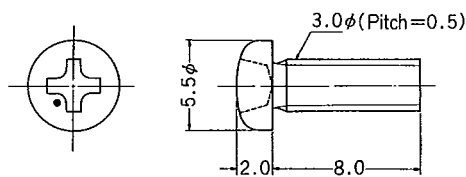


Thickness : 0.05~0.1

SANYO IS-20MA Mica

Case Outline—[0011] unit:mm

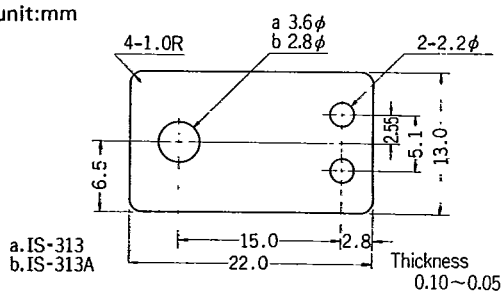
unit:mm



JIS No. B1111 M3×0.5

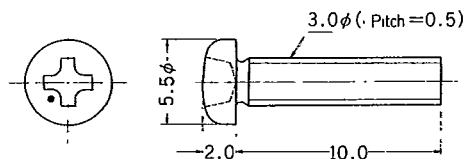
Case Outline—[0007] unit:mm

unit:mm



Case Outline—[0012] unit:mm

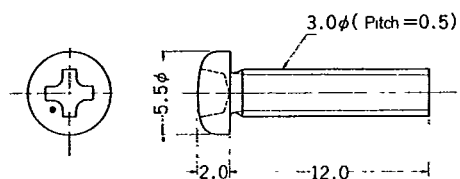
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0013]

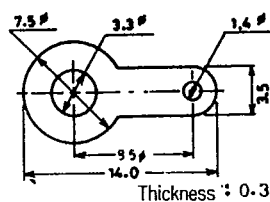
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0018]

unit:mm

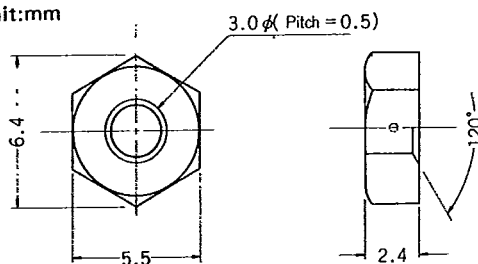


SANYO Lug 1.4

T=91-20

Case Outline—[0014]

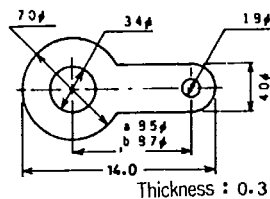
unit:mm



JIS No. B1181 M3×0.5

Case Outline—[0019]

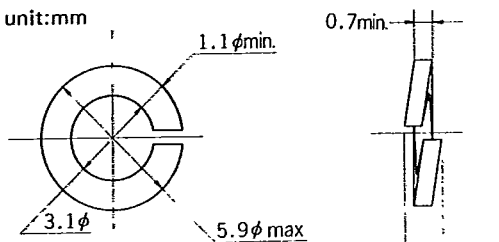
unit:mm



SANYO Lug 1.8φ

Case Outline—[0015]

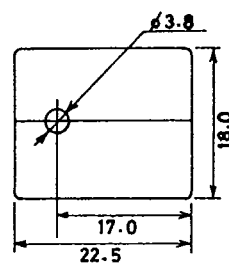
unit:mm



JIS No. B 1251 Spring washer (M3)

Case Outline—[0020]

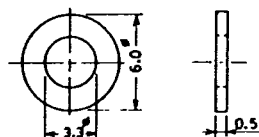
unit:mm



SANYO IS-3MP Mica

Case Outline—[0016]

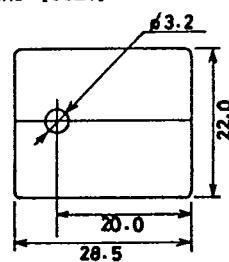
unit:mm



JIS No. B1252 Flat washer

Case Outline—[0021]

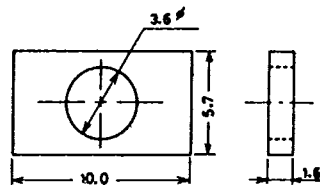
unit:mm



SANYO IS-MPC Mica

Case Outline—[0017]

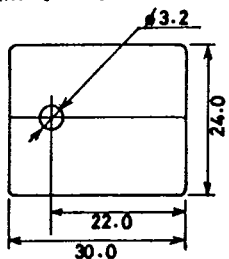
unit:mm



JIS No. G3141 Rectangular washer

Case Outline—[0022]

unit:mm



SANYO IS-3PBL Mica