

3SK107

2031A

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

T-31-25

High Frequency General-Purpose Amp Applications

©985B

Use

- FM tuners and VHF tuners

Features

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

Absolute Maximum Ratings at Ta=25°C

			unit
Drain-Source Voltage	V _{DS}	20	V
Gate 1-Source Voltage	V _{G1S}	±7	V
Gate 2-Source Voltage	V _{G2S}	±7	V
Drain Current	I _D	30	mA
Allowable Power Dissipation	P _D	250	mW
Channel Temperature	T _{ch}	125	°C
Storage Temperature	T _{stg}	-55 to +125	°C

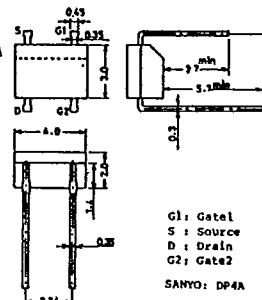
Electrical Characteristics at Ta=25°C

			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*		24*	mA
Forward transfer Admittance	y _{fs}	V _{DS} =10V, V _{G2S} =4V, I _D =10mA		17		mS
		f=1KHz				
Reverse Transfer Capacitance	c _{rss}	V _{DS} =10V, V _{G2S} =4V, V _{G1S} =0		0.02	0.05	pF
		f=1MHz				
Input Capacitance	c _{iss}	V _{DS} =10V, V _{G2S} =4V, V _{G1S} =0		5.5		pF
		f=1MHz				
Output Capacitance	c _{oss}	V _{DS} =10V, V _{G2S} =4V, V _{G1S} =0		4.6		pF
		f=1MHz				
Power Gain	PG	V _{DS} =10V, V _{G2S} =4V, I _D =10mA	20	26		dB
		f=100MHz				
Noise Figure	NF	V _{DS} =10V, I _D =10mA, V _{G2S} =4V		2.2	3.5	dB
		f=100MHz				

* The 3SK107 is classified by I_{DSS} as follows (unit:mA):

2.5	E	6.0	5.0	F	12.0	10.0	G	24.0
-----	---	-----	-----	---	------	------	---	------

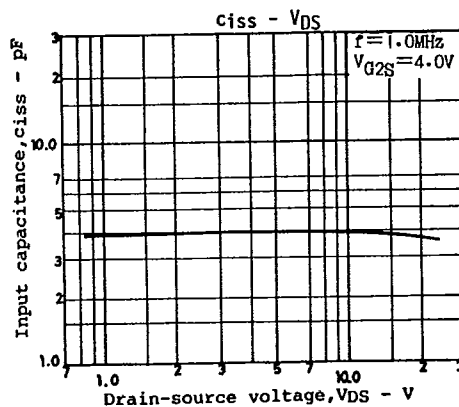
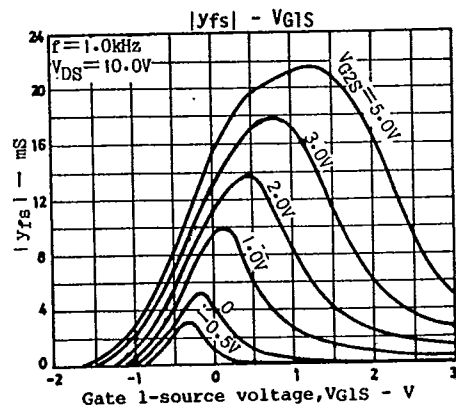
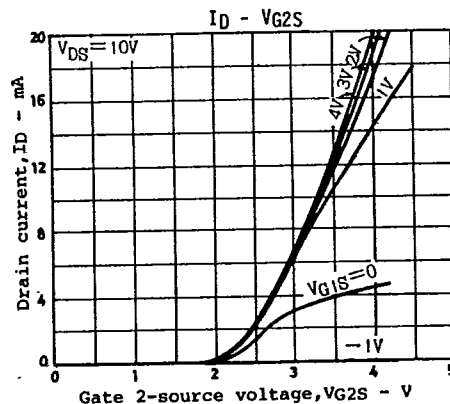
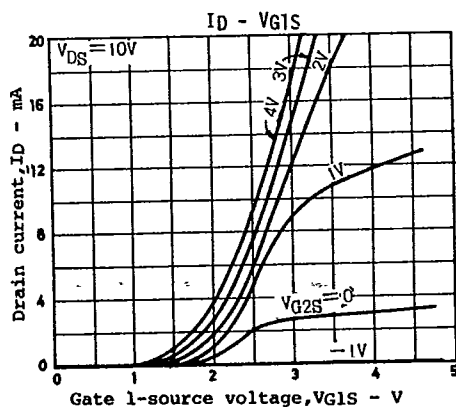
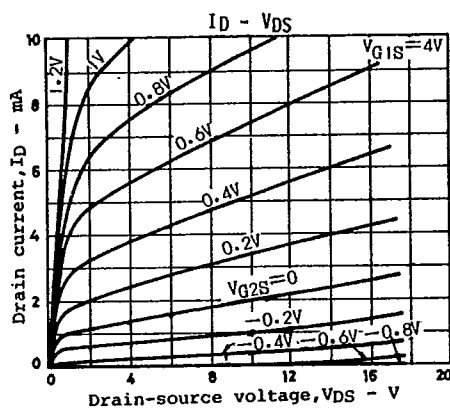
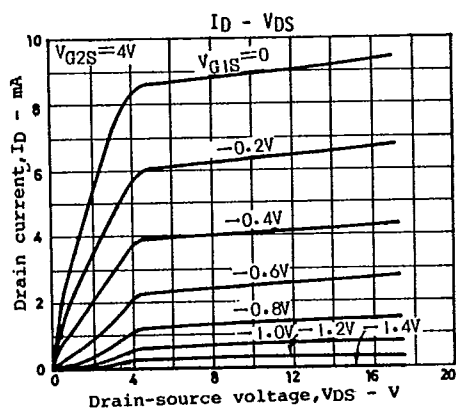
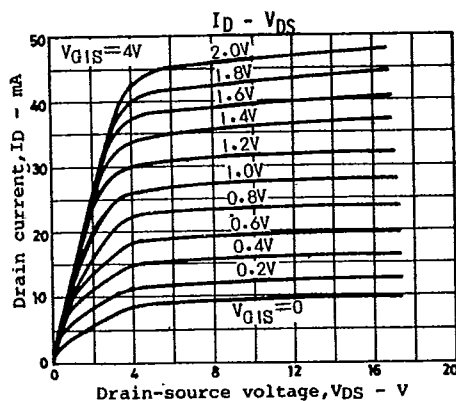
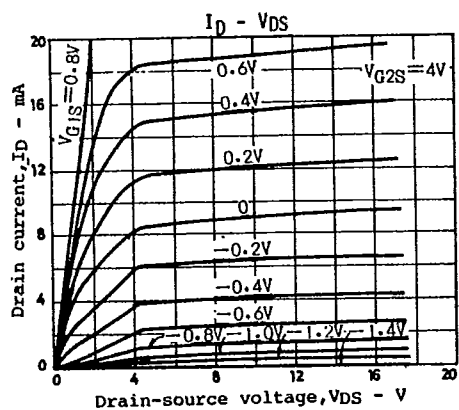
Case Outline 2031A
(unit:mm)



6037KI/2075MW/7233KI, MT No.985-1/5

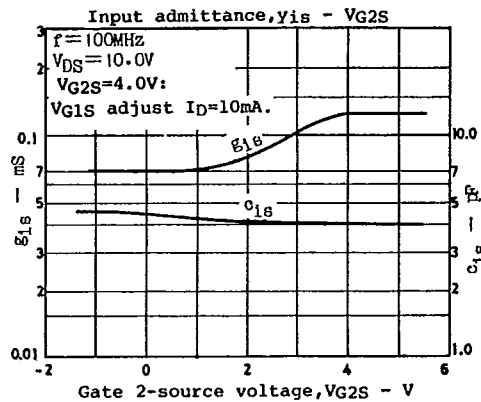
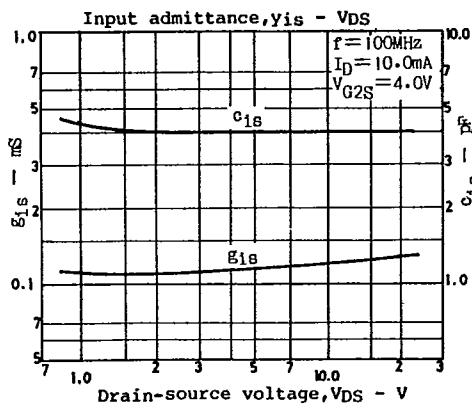
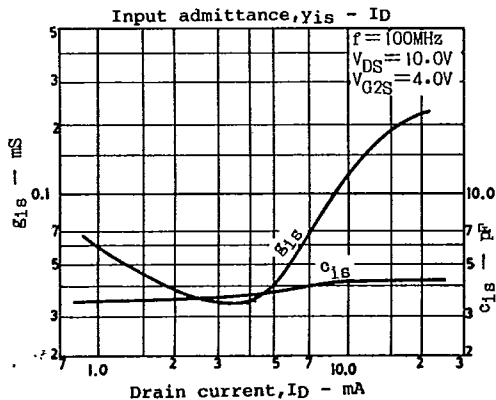
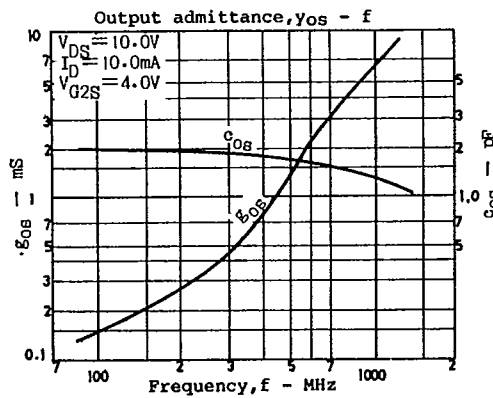
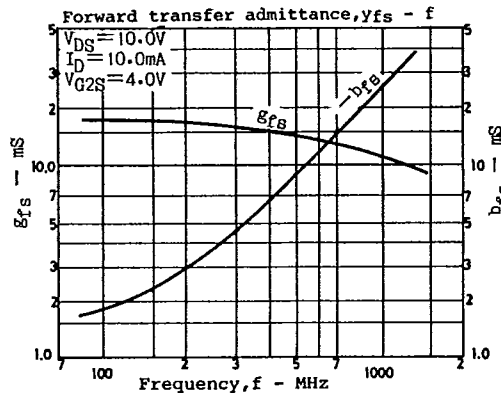
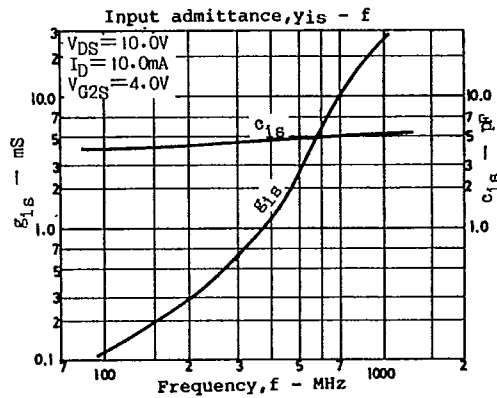
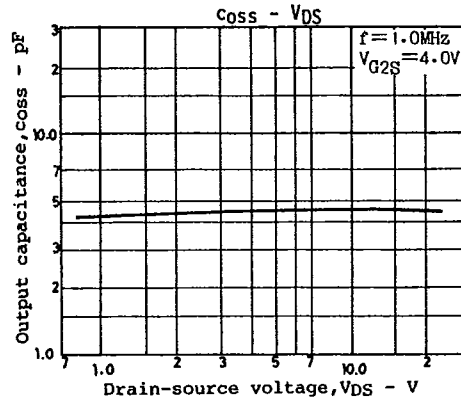
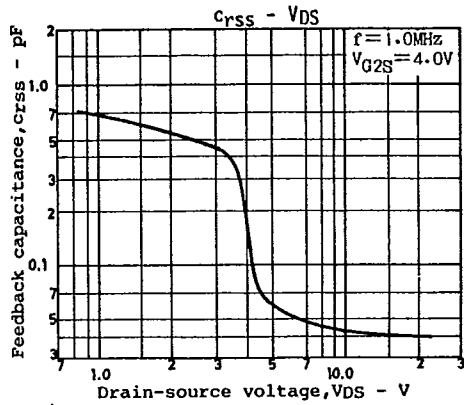
3SK107

T-31-25



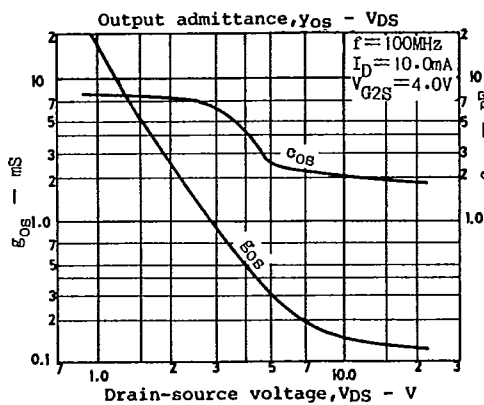
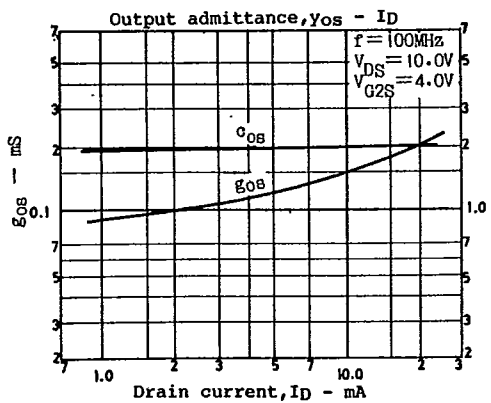
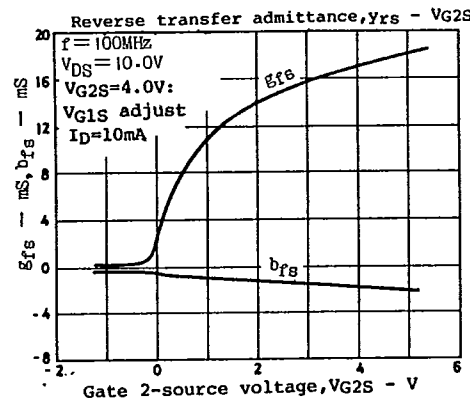
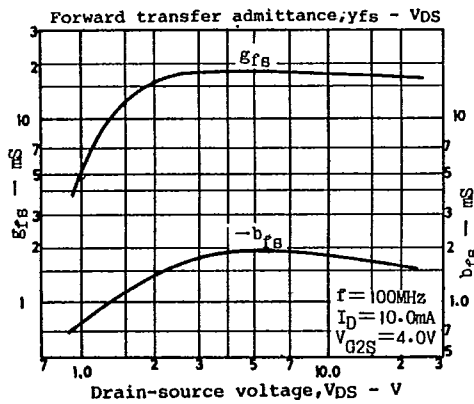
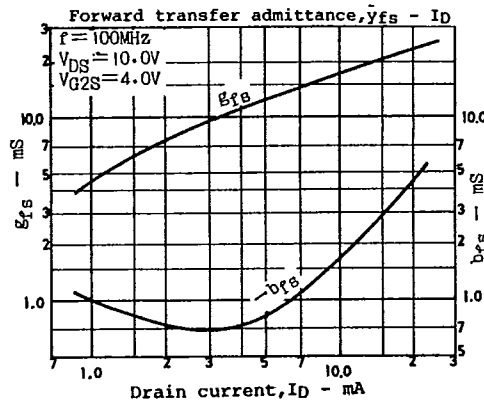
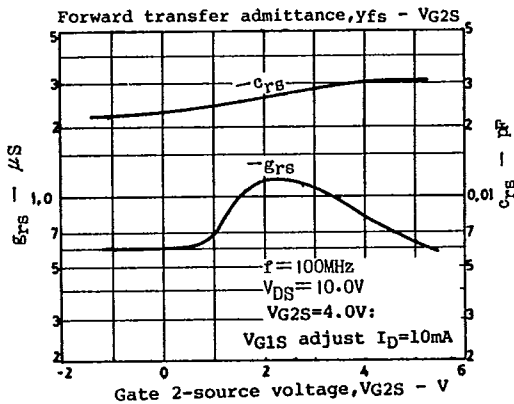
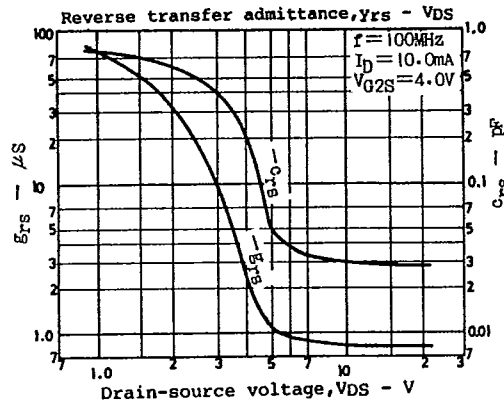
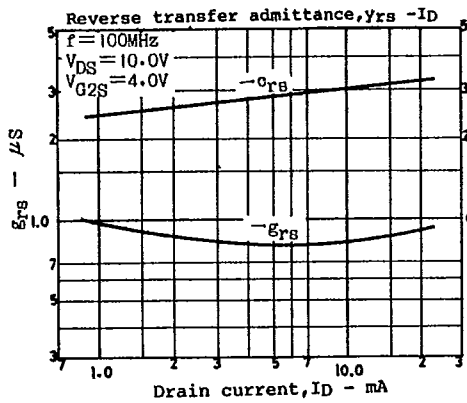
3SK107

T-31-25



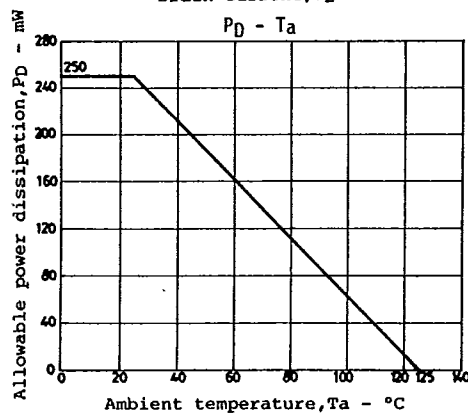
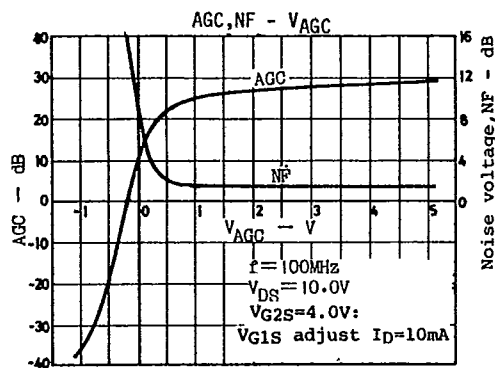
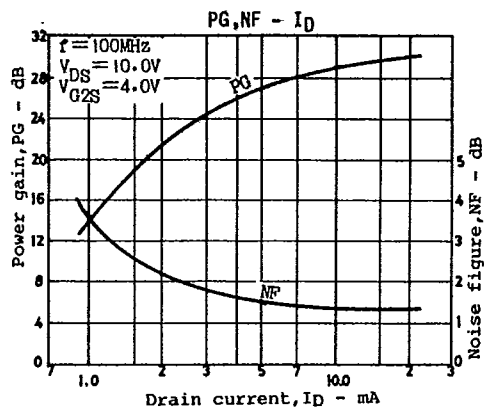
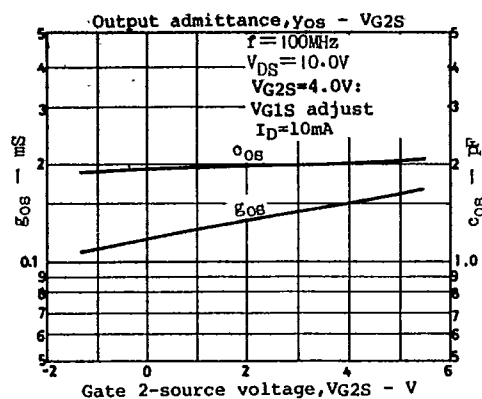
3SK107

T-31-25

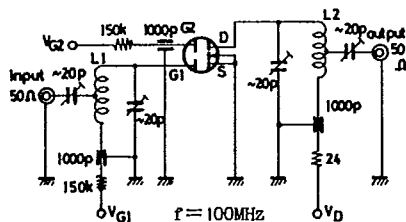


3SK107

T-31-25



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

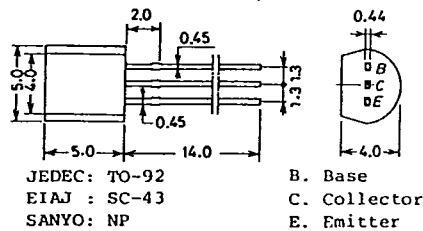
T-91-20

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.

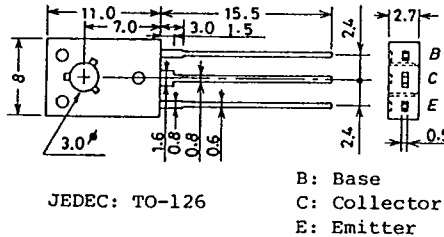
Case Outline—[2003A]

unit:mm



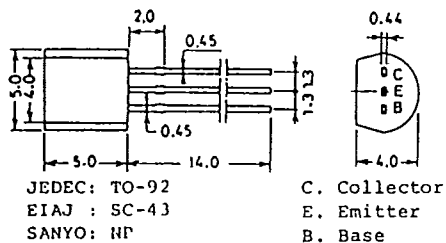
Case Outline—[2009A]

unit:mm



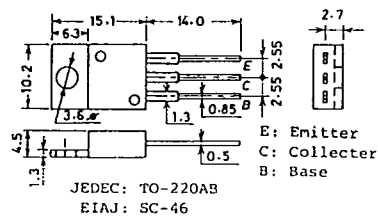
Case Outline—[2004A]

unit:mm



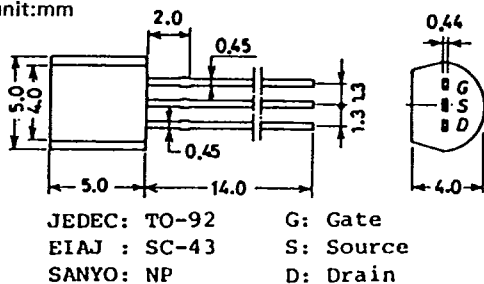
Case Outline—[2010A]

unit:mm



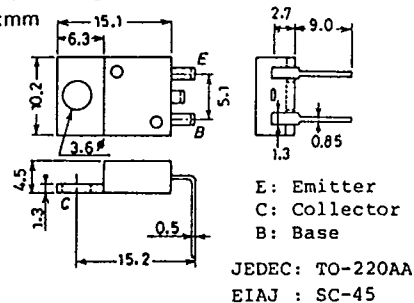
Case Outline—[2005A]

unit:mm



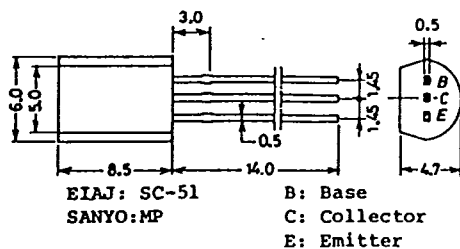
Case Outline—[2012]

unit:mm



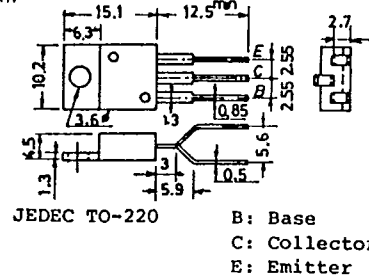
Case Outline—[2006A]

unit:mm

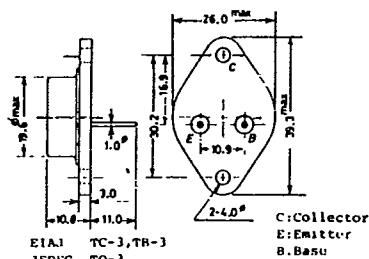


Case Outline—[2013]

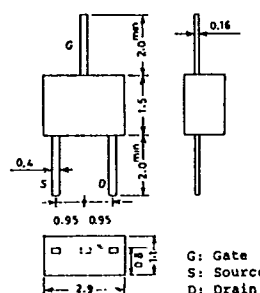
unit:mm



unit:mm

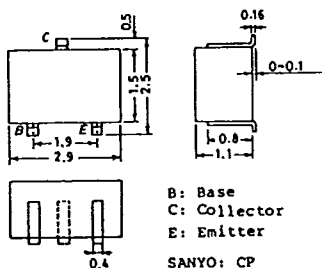


unit:mm

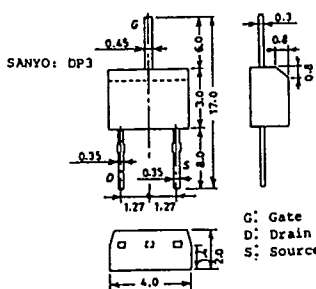


T-91-20

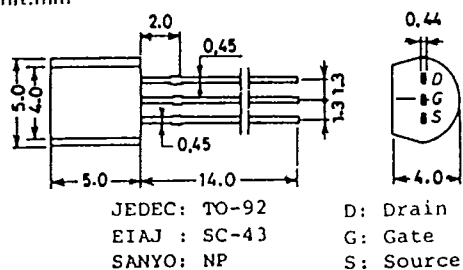
unit:mm



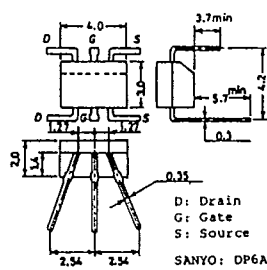
unit:mm



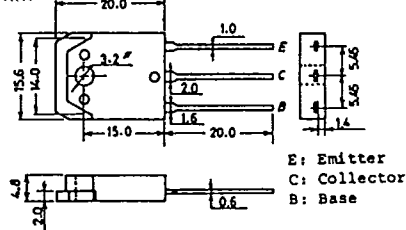
unit:mm



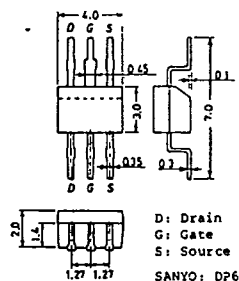
unit:mm



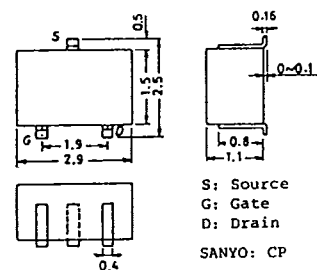
unit:mm



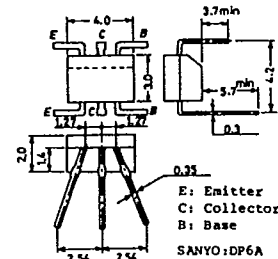
unit:mm



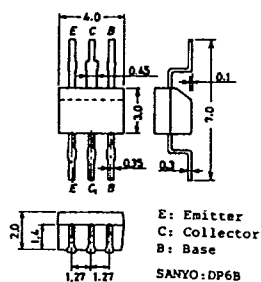
unit:mm



unit:mm



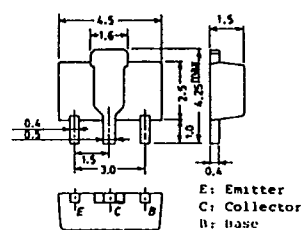
unit:mm



E: Emitter
C: Collector
B: Base

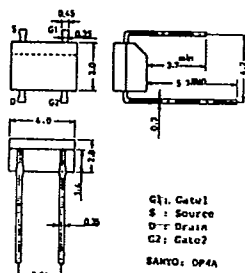
SANYO: DP6B

unit:mm



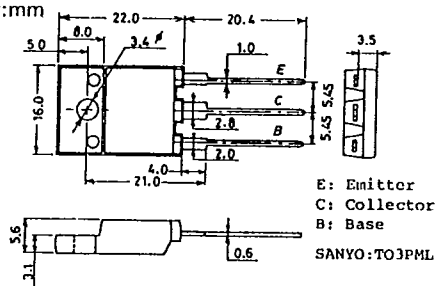
E: Emitter
C: Collector
B: Base

unit:mm



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

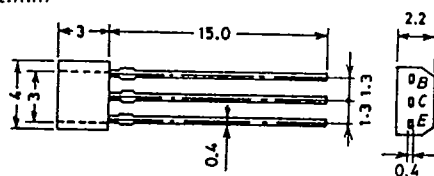
unit:mm



E: Emitter
C: Collector
B: Base

SANYO:TO3PML

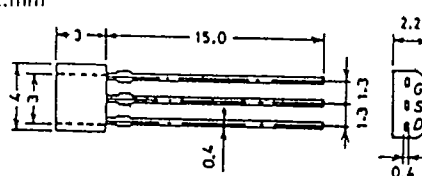
unit:mm



B: Base
C: Collector
E: Emitter

SANYO: SPA

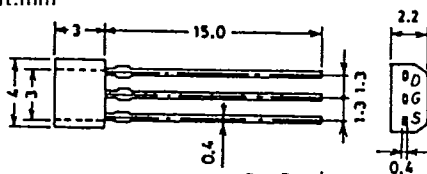
unit:mm



G: Gate
S: Source
D: Drain

SANYO: SPA

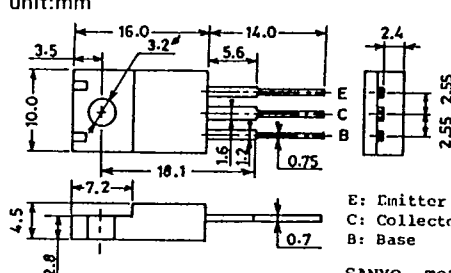
unit:mm



D: Drain
G: Gate
S: Source

SANYO: SPA

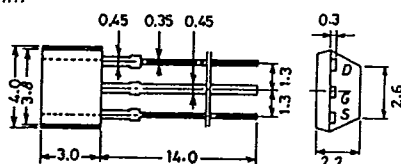
unit:mm



E: Emitter
C: Collector
B: Base

SANYO: TO220ML

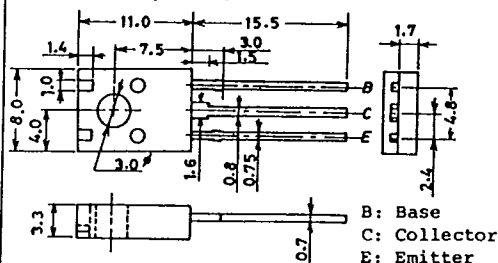
unit:mm



D: Drain
G: Gate
S: Source

SANYO: SP'

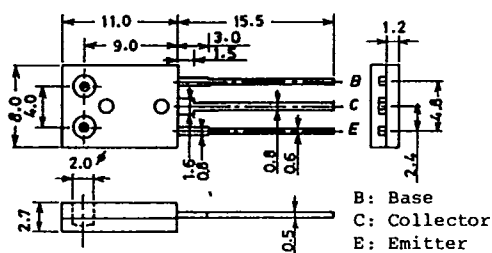
11.0



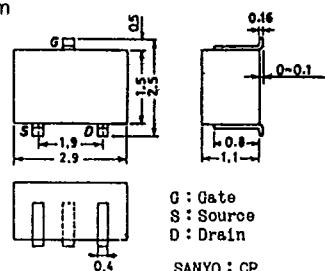
B: Base
C: Collector
E: Emitter

SANYO: TO126ML

Case Outline—[2043A] unit:mm

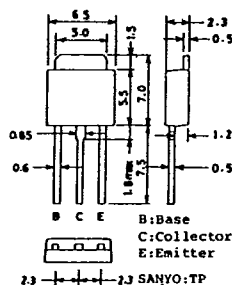


SANYO: TO126LP

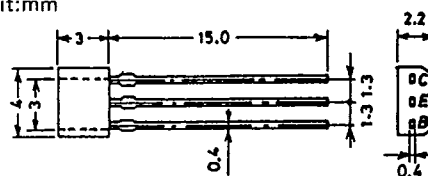
Case Outline—[2050]
unit:mm

SANYO: CP

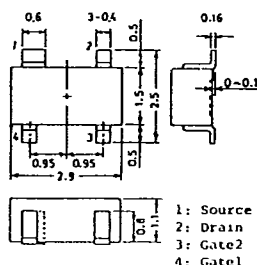
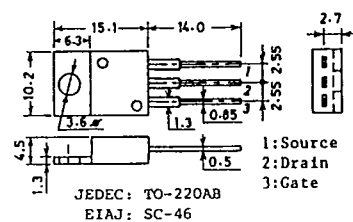
T-91-20

Case Outline—[2045]
unit:mm

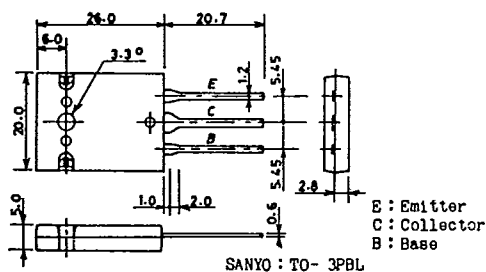
SANYO: TP

Case Outline—[2051]
unit:mm

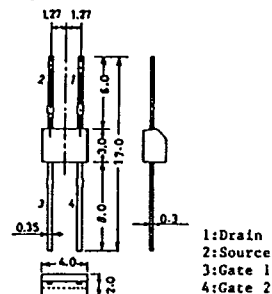
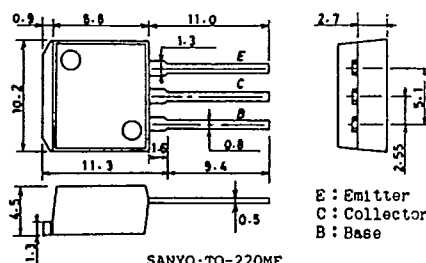
SANYO: SPA

Case Outline—[2046]
unit:mmCase Outline—[2052A]
unit:mmJEDEC: TO-220AB
EIAJ: SC-46

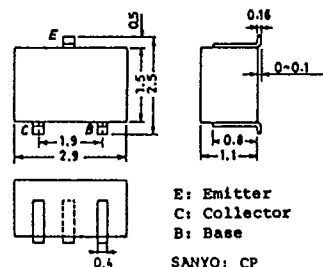
Case Outline—[2048] unit:mm



SANYO: TO-3PBL

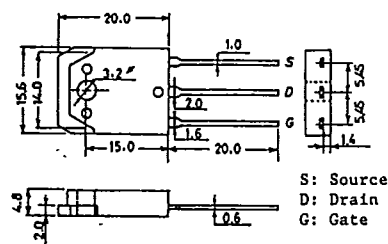
Case Outline—[2053]
unit:mmCase Outline—[2049]
unit:mm

SANYO: TO-220MF

Case Outline—[2054]
unit:mm

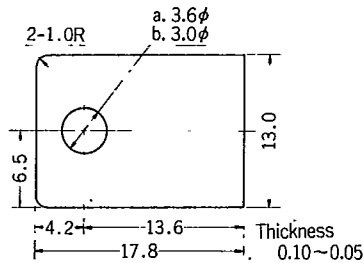
SANYO: CP

Case Outline—[2056] unit:mm



SANYO: TO3PB

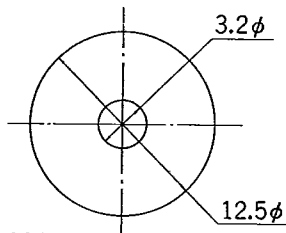
Case Outline—[0008] unit:mm

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

SANYO

Case Outline—[0004] unit:mm

unit:mm

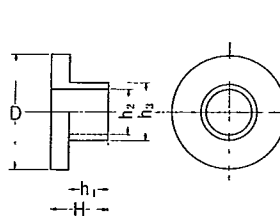


SANYO IS-126

Thickness : 0.075

Case Outline—[0009] unit:mm

unit:mm

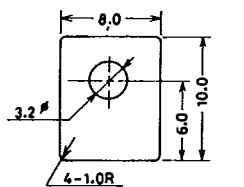


SANYO Bush

Bush	D	H	h ₁	h ₂	h ₃
A	8.0φ	4.0	2.8	3.1φ	3.89φ
B	8.0φ	3.0	1.8	3.1φ	3.89φ
C	8.0φ	5.7	4.5	3.1φ	3.89φ
D	8.0φ	2.7	1.5	3.1φ	3.89φ
E	8.0φ	3.4	2.2	3.1φ	3.89φ
F	8.0φ	4.0	2.8	3.0φ	3.59φ
K	16.0φ	3.4	1.4	3.1φ	6.0φ
L	6.0φ	3.1	1.5	2.6φ	3.5φ
M	6.0φ	3.1	1.5	3.0φ	3.59φ
P	6.0φ	2.3	1.1	3.0φ	3.59φ

Case Outline—[0005] unit:mm

unit:mm

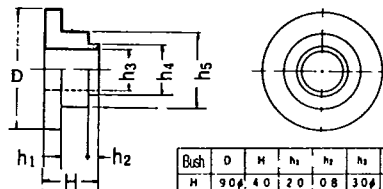


Thickness : 0.075

SANYO IS-126A Mica

Case Outline—[0010] unit:mm

unit:mm

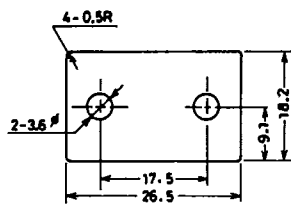


SANYO Bush

Bush	D	H	h ₁	h ₂	h ₃	h ₄	h ₅
H	9.0φ	4.0	2.0	0.8	3.0φ	3.59φ	5.6φ
T	9.0φ	5.8	2.0	2.6	3.0φ	3.59φ	5.6φ
UB	16.0φ	6.8	1.5	3.3	3.0φ	3.89φ	8.0φ

Case Outline—[0006] unit:mm

unit:mm

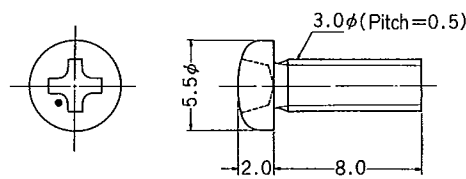


Thickness : 0.05~0.1

SANYO IS-20MA Mica

Case Outline—[0011] unit:mm

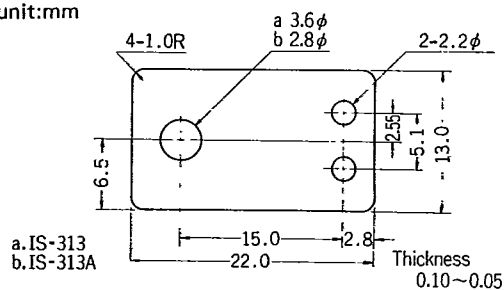
unit:mm



JIS No. B1111 M3×0.5

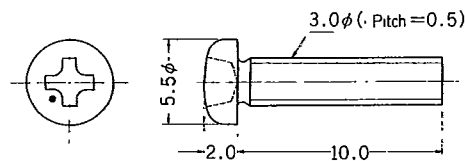
Case Outline—[0007] unit:mm

unit:mm

a. IS-313
b. IS-313AThickness
0.10~0.05

Case Outline—[0012] unit:mm

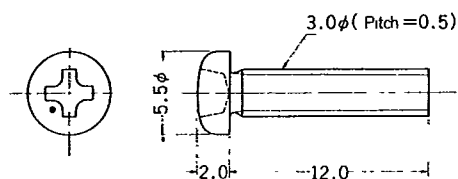
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0013]

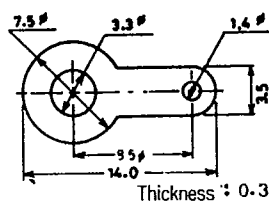
unit:mm



JIS No. B1111 M3×0.5

Case Outline—[0018]

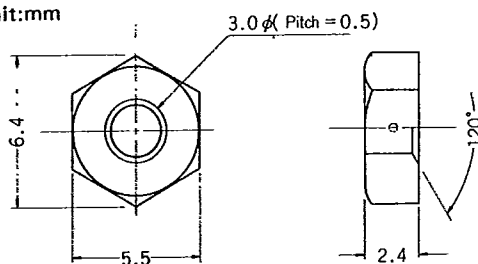
unit:mm



SANYO Lug 1.4

Case Outline—[0014]

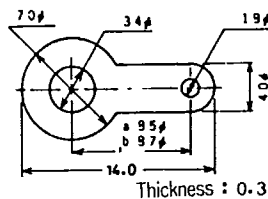
unit:mm



JIS No. B1181 M3×0.5

Case Outline—[0019]

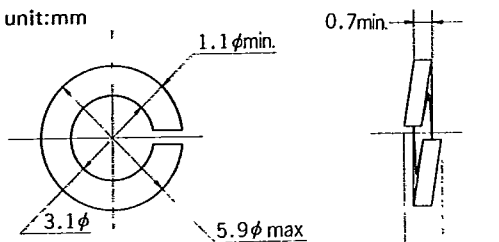
unit:mm



SANYO Lug 1.8φ

Case Outline—[0015]

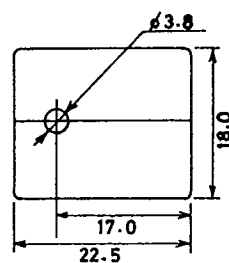
unit:mm



JIS No. B 1251 Spring washer (M3)

Case Outline—[0020]

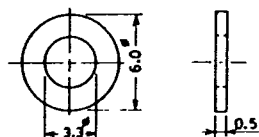
unit:mm



SANYO IS-3MP Mica

Case Outline—[0016]

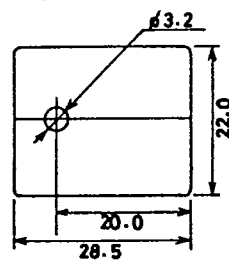
unit:mm



JIS No. B1252 Flat washer

Case Outline—[0021]

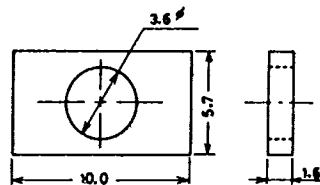
unit:mm



SANYO IS-MPC Mica

Case Outline—[0017]

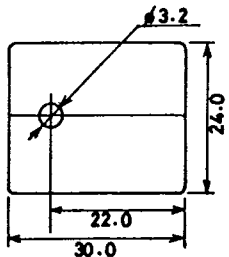
unit:mm



JIS No. G3141 Rectangular washer

Case Outline—[0022]

unit:mm



SANYO IS-3PBL Mica