

T-31-25

3SK167



2046

GaAs Dual Gate MES
Silicon Field-Effect Transistor

UHF Amp, Mixer Applications

©1988A

features

- . High power gain and small noise resistance
- . Small input/output capacitance, reverse transfer capacitance

Absolute Maximum Ratings at Ta=25°C

			unit
Drain to Source Voltage	V_{DS}	12	V
Gate 1 to Source Voltage	V_{G1S}	-6	V
Gate 2 to Source Voltage	V_{G2S}	-9	V
Drain Current	I_D	55	mA
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	125	°C
Storage Temperature	T_{stg}	-55 to 125	°C

Electrical Characteristics at Ta=25°C

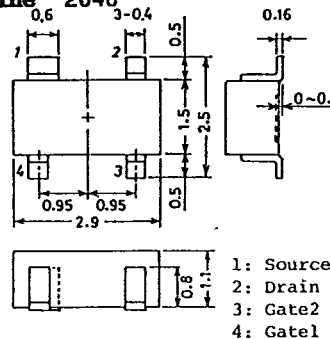
			min	typ	max	unit
Gate 1 Cutoff Current	I_{G1SS}	$V_{G1S}=-6V, V_{G2S}=V_{DS}=0V$			20	uA
Gate 2 Cutoff Current	I_{G2SS}	$V_{G2S}=-6V, V_{G1S}=V_{DS}=0V$			20	uA
Gate 1 to Source Cutoff Voltage	$V_{G1S(off)}$	$V_{DS}=5V, V_{G2S}=0, I_D=100uA$			-6	V
Gate 2 to Source Cutoff Voltage	$V_{G2S(off)}$	$V_{DS}=5V, V_{G1S}=0, I_D=100uA$			-6	V
Drain Current	I_{DSS}	$V_{DS}=5V, V_{G1S}=V_{G2S}=0V$	10*		55*	mA
Drain to Source Breakdown Voltage	$V_{(BR)DSX}$	$I_D=50uA, V_{G1S}=V_{G2S}=-6V$	12			V
Forward Transfer Conductance	$ Y_{fs} $	$f=1kHz, I_D=10mA, V_{DS}=5V, V_{G2S}=1.5V$	10	19		mS
Input Capacitance	c_{iss}	$V_{DS}=5V, f=1MHz, V_{G1S}=V_{G2S}=-6V$		0.45		pF
Reverse Transfer Capacitance	c_{rss}			0.020	0.050	pF
Power Gain	PG	$V_{DS}=5V, I_D=10mA, f=1GHz, V_{G2S}=1.5V, \text{at specified Circuit}$	14	20		dB
Noise Figure	NF			1.3	2.6	dB

* The 3SK167 is classified by I_{DSS} as follows (unit:mA):

	2	3	4	5
I_{DSS} (mA)	10~25	20~35	30~45	40~55

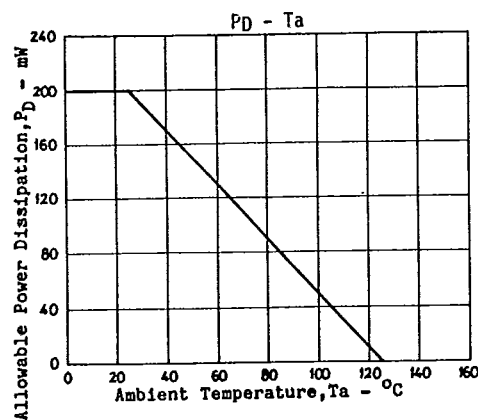
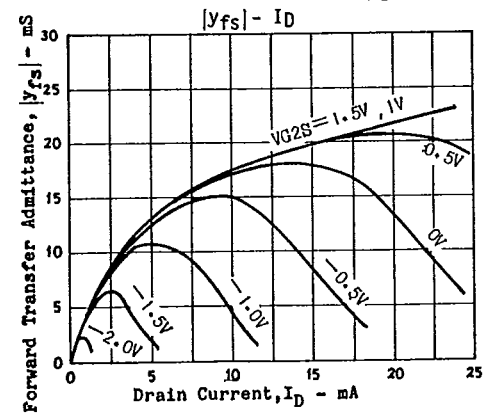
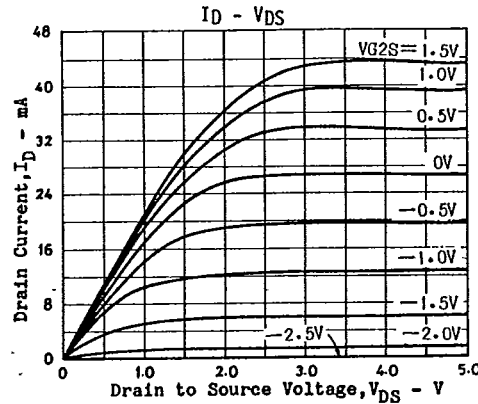
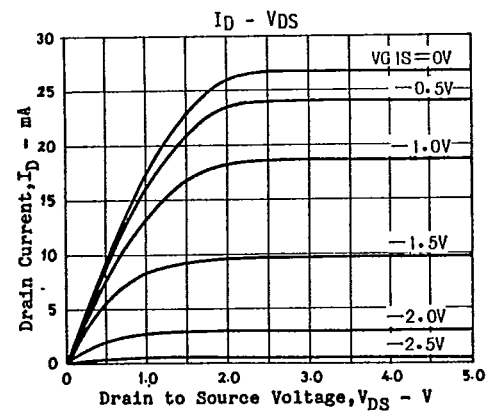
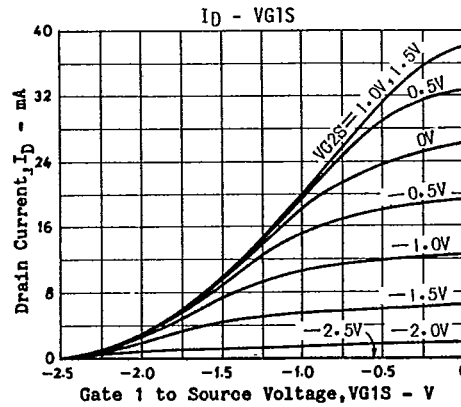
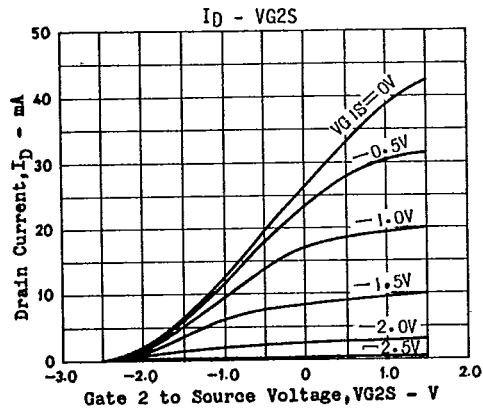
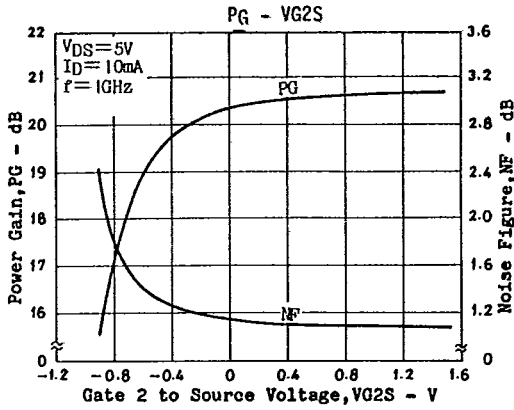
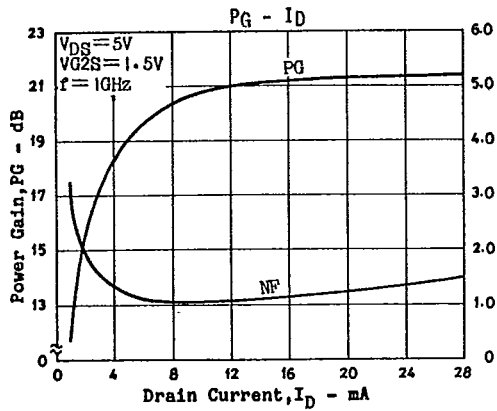
(Note) Marking on device: IZ
 I_{DSS} rank : 2,3,4,5

Case Outline 2046
(unit:mm)



3SK167

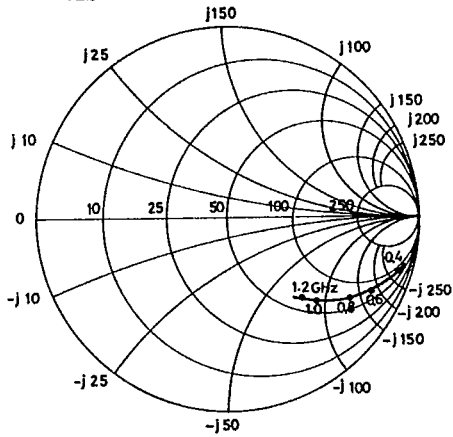
T-31-25



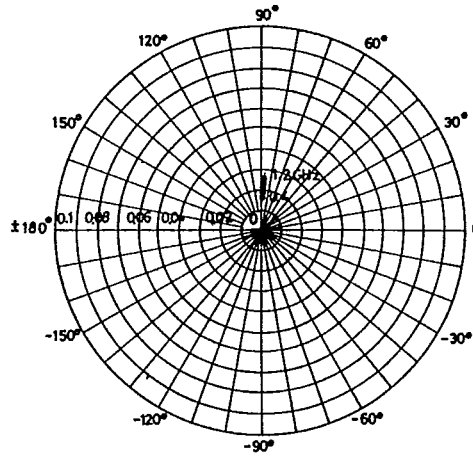
3SK167

T-31-25

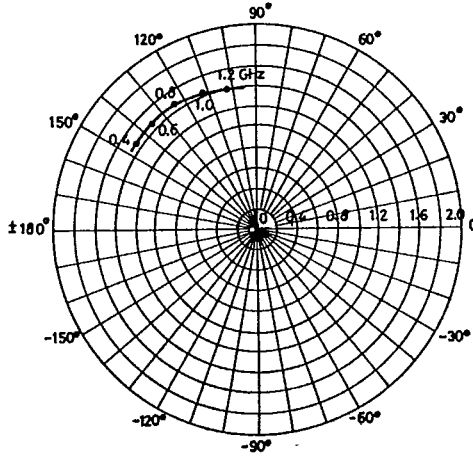
S11B : $V_{DS}=5.0V, I_D=10.0mA,$
 $V_{G2S}=0.0V$



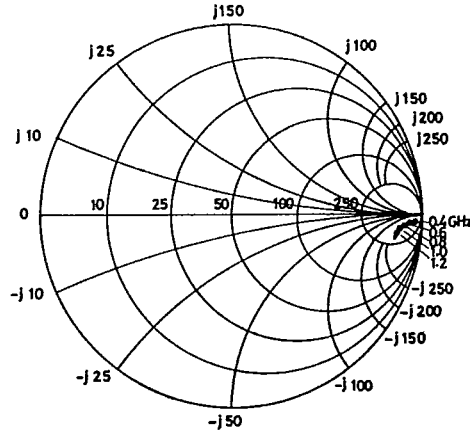
S12B : $V_{DS}=5.0V, I_D=10.0mA,$
 $V_{G2S}=0.0V$



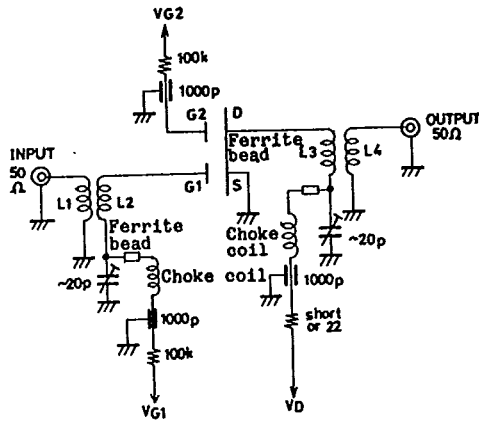
S21B : $V_{DS}=5.0V, I_D=10.0mA,$
 $V_{G2S}=0.0V$



S22B : $V_{DS}=5.0V, I_D=10.0mA,$
 $V_{G2S}=0.0V$



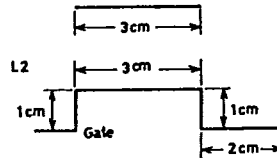
PG,NF Circuit



Coil data

1.5mmø Sn-plated Cu wire

L1, L4



L3



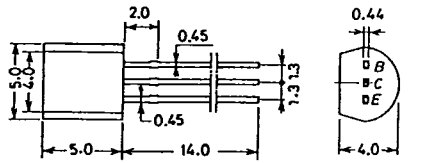
T-91-20

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

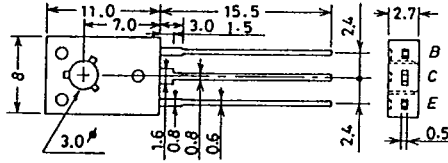


JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

B. Base
C. Collector
E. Emitter

Case Outline-[2009A]

unit:mm

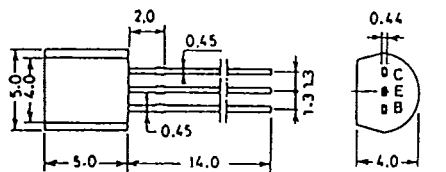


JEDEC: TO-126

B: Base
C: Collector
E: Emitter

Case Outline-[2004A]

unit:mm

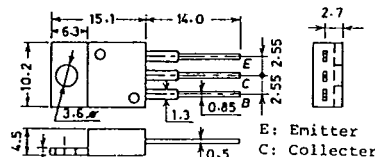


JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

C. Collector
E. Emitter
B. Base

Case Outline-[2010A]

unit:mm

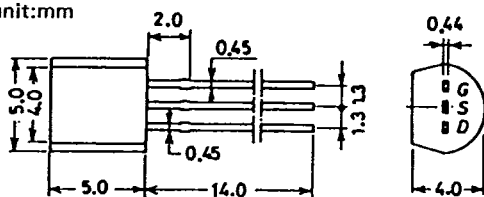


JEDEC: TO-220AB
EIAJ: SC-46

E: Emitter
C: Collector
B: Base

Case Outline-[2005A]

unit:mm

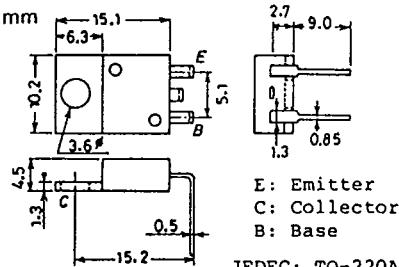


JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

G: Gate
S: Source
D: Drain

Case Outline-[2012]

unit:mm

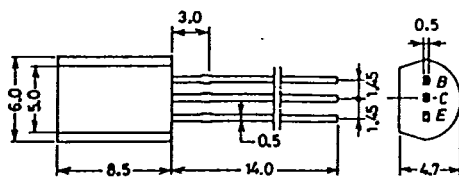


JEDEC: TO-220AA
EIAJ: SC-45

E: Emitter
C: Collector
B: Base

Case Outline-[2006A]

unit:mm

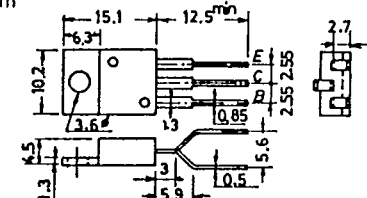


EIAJ: SC-51
SANYO: MP

B: Base
C: Collector
E: Emitter

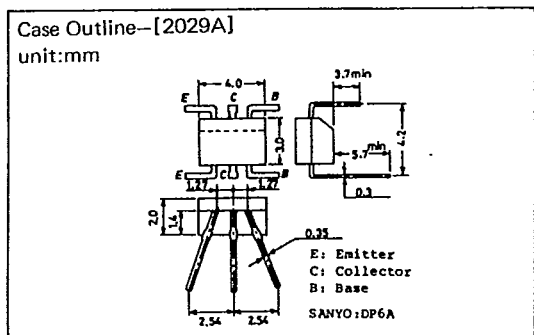
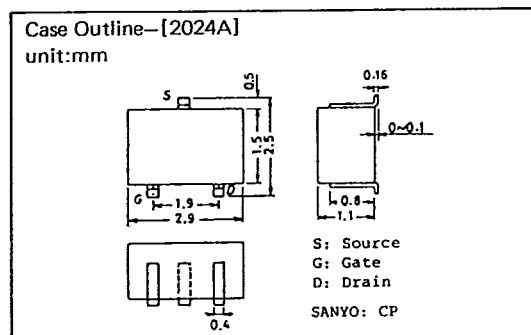
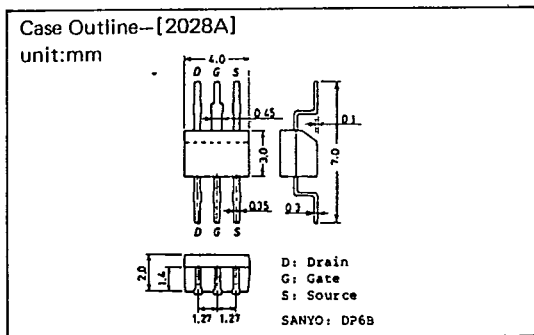
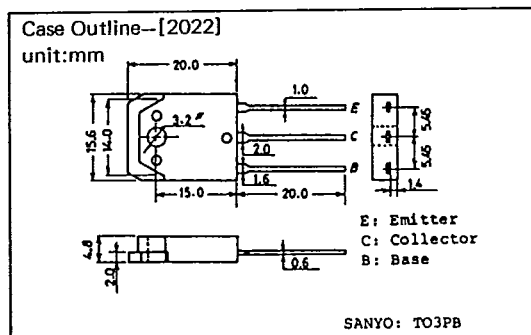
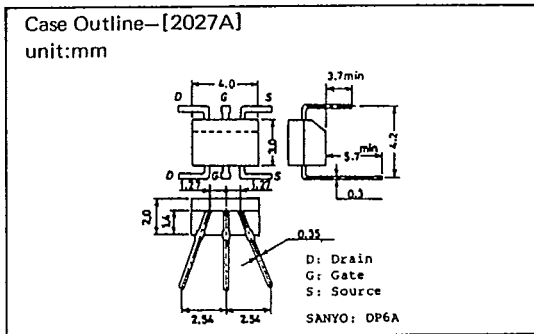
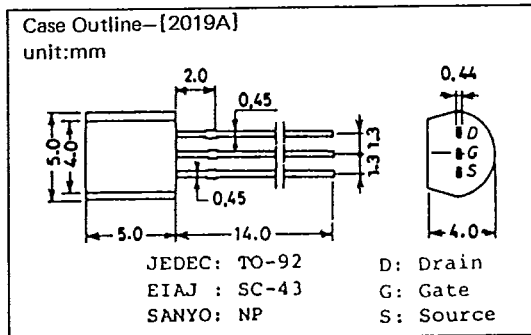
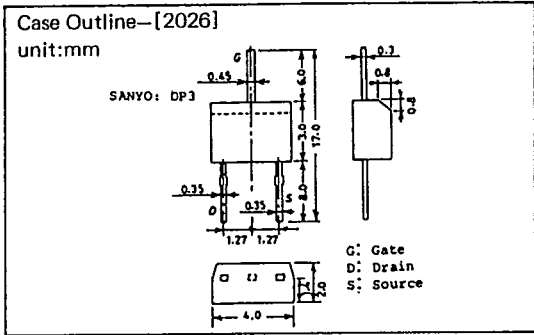
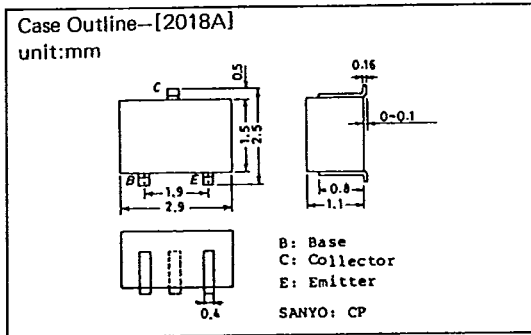
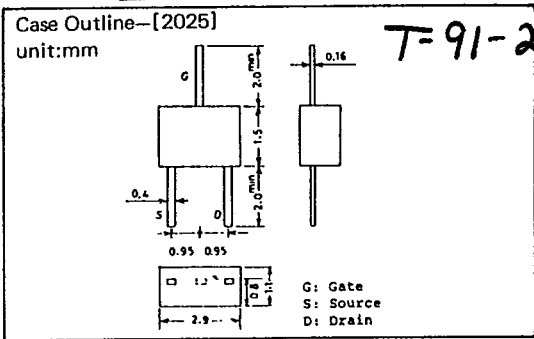
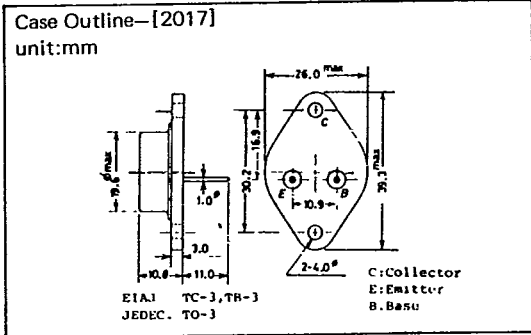
Case Outline-[2013]

unit:mm



JEDEC TO-220

B: Base
C: Collector
E: Emitter



T-91-20

