Ordering number : ENA0509B

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

N-Channel Junction Silicon FET

EC3A04B — Low-Frequency General-Purpose Amplifier, Impedance Converter Applications

Applicatins

- Low-frequency general-purpose amplifier, impedance conversion, infrared sensor applications.

Features

- Small I_{GSS}.
- Small Ciss.
- Ultraminiature package facilitates miniaturization in end products.
- Halogen free compliance (UL94HB).

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSX}		30	V
Gate-to-Drain Voltage	V_{GDS}		–30	V
Gate Current	I_G		10	mA
Drain Current	I_D		10	mA
Allowable Power Dissipation	P_D		100	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G=–10μA, V_{DS}=0V	–30			V
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=–20V, V_{DS}=0V			–1.0	nA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=10V, I_D=1μA	–0.18	–0.65	–2.2	V

Marking : KC

Continued on next page.

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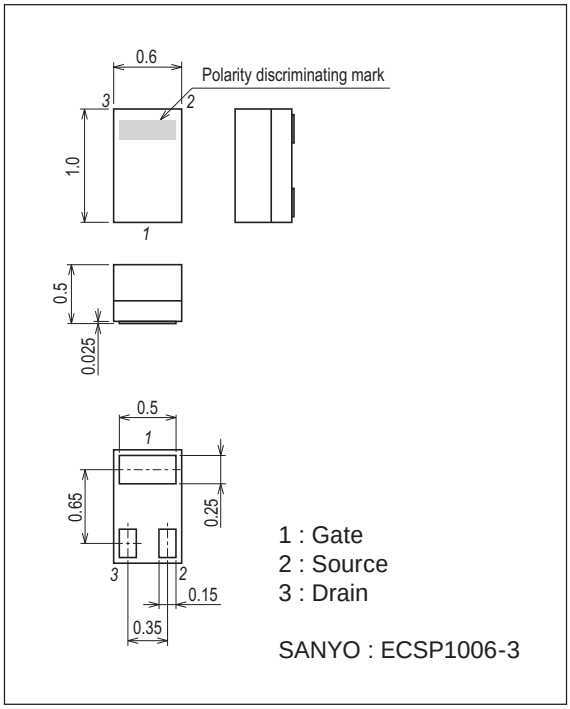
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain Current	I_{DSS}	V_{DS}=10V, V_{GS}=0V	0.6*		3.0*	mA
Forward Transfer Admittance	|yfs|	V_{DS}=10V, V_{GS}=0V, f=1kHz	3.0	5.0		mS
Input Capacitance	Ciss	V_{DS}=10V, V_{GS}=0V, f=1MHz		4		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, V_{GS}=0V, f=1MHz		1.1		pF
Static Drain-to-Source On-State Resistance	R_{DS}(on)	V_{DS}=10mV, V_{GS}=0V		200		Ω

* : The EC3A04B is classified by I_{DSS} as follows : (unit : mA).

Rank	2	3
I_{DSS}	0.6 to 1.5	1.2 to 3.0

Package Dimensions

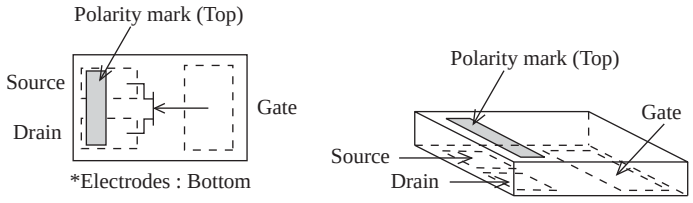
unit : mm (typ)
7039A-004

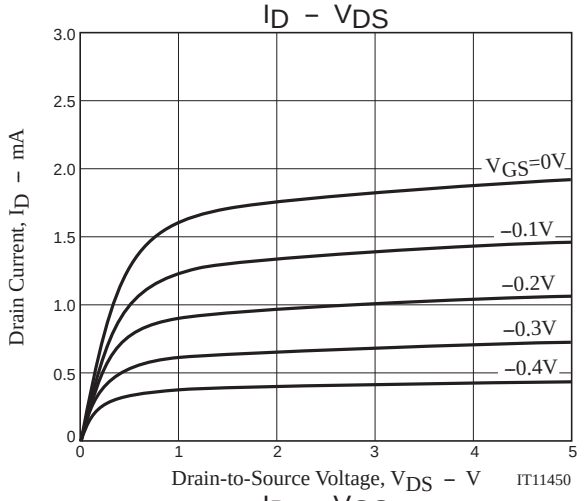


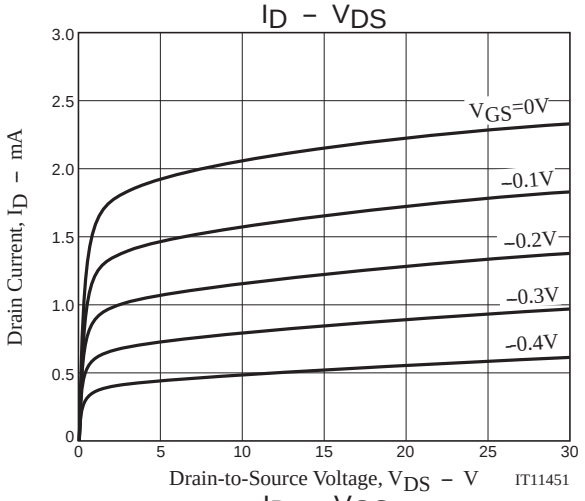
Type No. Indication (Top view)

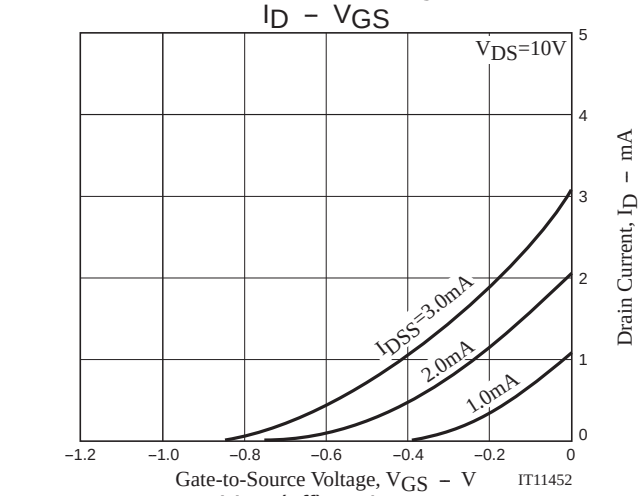


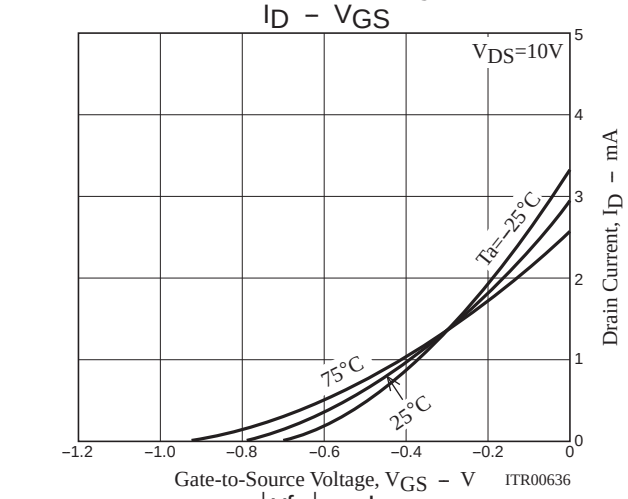
Electrical Connection (Top view)

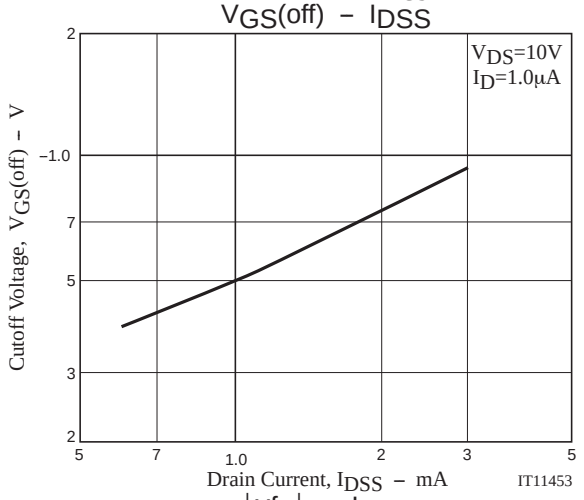


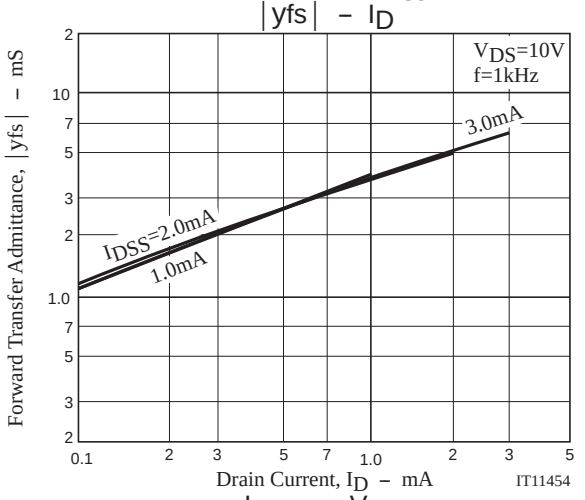

ID – VDS
Drain Current, ID – mA
Drain-to-Source Voltage, VDS – V
VGS=0V
–0.1V
–0.2V
–0.3V
–0.4V
IT11450

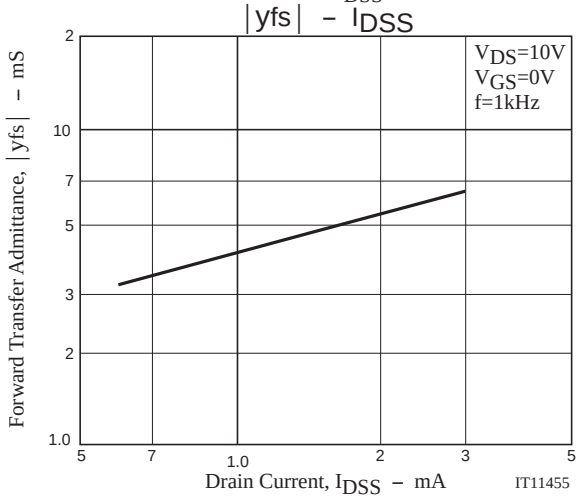

ID – VDS
Drain Current, ID – mA
Drain-to-Source Voltage, VDS – V
VGS=0V
–0.1V
–0.2V
–0.3V
–0.4V
IT11451

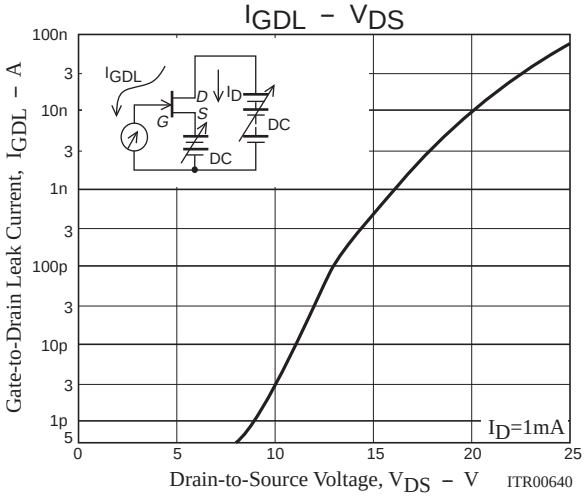

ID – VGS
VDS=10V
IDSS=3.0mA
2.0mA
1.0mA
Drain Current, ID – mA
Gate-to-Source Voltage, VGS – V
IT11452

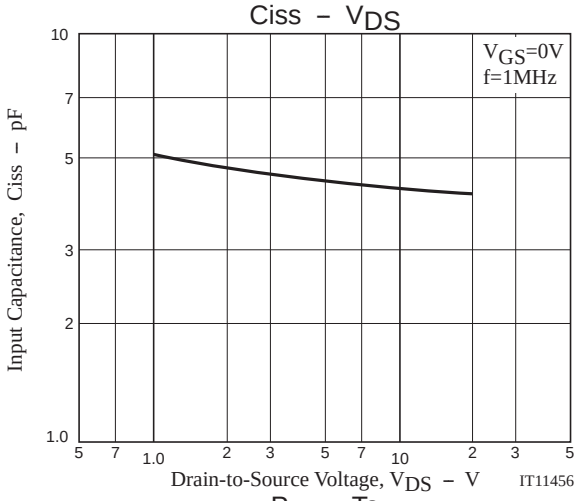

ID – VGS
VDS=10V
Ta=–25°C
75°C
25°C
Drain Current, ID – mA
Gate-to-Source Voltage, VGS – V
ITR00636

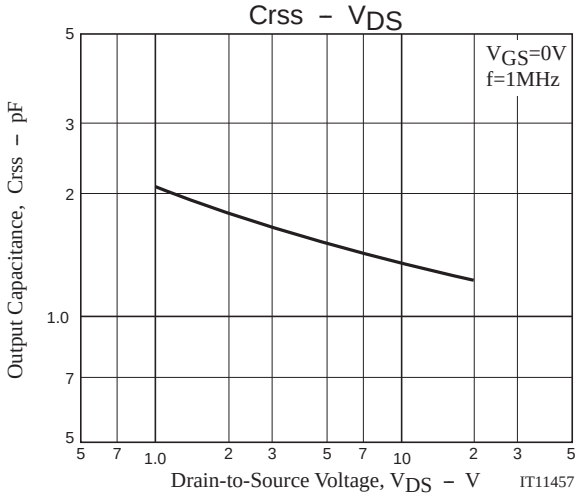

VGS(off) – IDSS
VDS=10V
ID=1.0μA
Cutoff Voltage, VGS(off) – V
Drain Current, IDSS – mA
IT11453

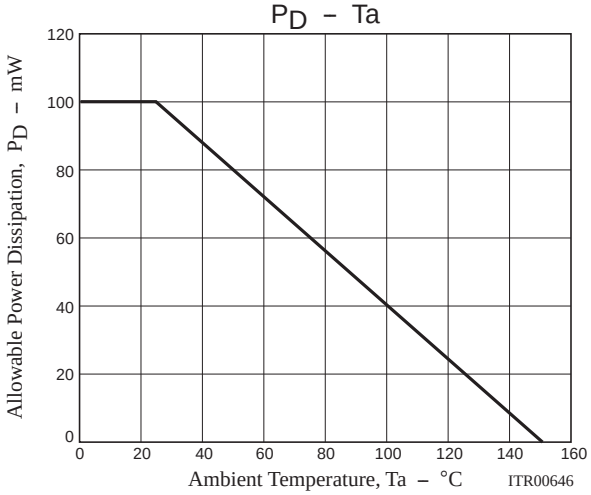

|yfs| – ID
VDS=10V
f=1kHz
3.0mA
IDSS=2.0mA
1.0mA
Forward Transfer Admittance, |yfs| – mS
Drain Current, ID – mA
IT11454


|yfs| – IDSS
VDS=10V
VGS=0V
f=1kHz
Forward Transfer Admittance, |yfs| – mS
Drain Current, IDSS – mA
IT11455


IGDL – VDS
IGDL
D
ID
G
S
DC
DC
ID=1mA
Gate-to-Drain Leak Current, IGDL – A
Drain-to-Source Voltage, VDS – V
ITR00640







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