

RT3U22M

Composite Transistor
For high speed switching
Silicon N-channel+P-channel MOSFET

DESCRIPTION

RT3U22M is a composite transistor built with INK0002AX and INJ0002AX chips in SC-88 package.

FEATURE

- Input impedance is high, and not necessary to consider a drive electric current.
- Drive voltage 2.5V
- Low on Resistance. $R_{ON}=1.1 / 3 \Omega$ (Tr1/Tr2) (TYP)
- High speed switching.
- Small package for easy mounting.

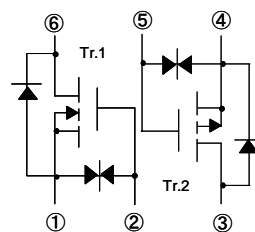
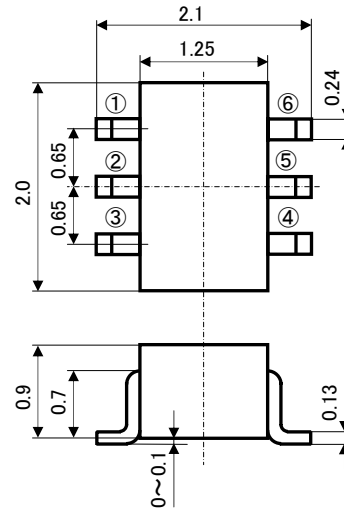
APPLICATION

High speed switching , Analog switching

*P-channel MOSFET Tr2' s minus sign is omitted

OUTLINE DRAWING

Unit: mm



TERMINAL CONNECTOR

- ①: SOURCE1
- ②: GATE1
- ③: DRAIN2
- ④: SOURCE2
- ⑤: GATE2
- ⑥: DRAIN1

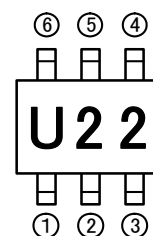
JEITA: SC-88

MAXIMUM RATING (Ta=25°C) (Tr1,Tr2 Common)

SYMBOL	PARAMETER	RATING	UNIT
V _{DSS}	Drain-source voltage	30	V
V _{GSS}	Gate-source voltage	±8	V
I _D	Drain current(DC)	200	mA
I _{DP}	Drain current(Pulse)	400(※1)	mA
P _D	Total power dissipation	150	mW
T _{ch}	Channel temperature	+150	°C
T _{stg}	Range of Storage temperature	-55~+150	°C

※1: Pw ≤ 10μs, Duty cycle ≤ 1%

MARKING



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Tr1 ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V(BR)DSS	Drain-source breakdown voltage	ID=100μA, VGS=0V	30	-	-	V
IGSS	Gate-source leak current	VGS=±5V, VDS=0V	-	-	±0.5	μA
IDSS	Zero gate voltage drain current	VDS=30V, VGS=0V	-	-	1.0	μA
Vth	Gate threshold voltage	ID=250μA, VDS=VGS	0.6	-	1.2	V
Yfs	Forward transfer admittance	VDS=10V, ID=0.1A	-	300	-	mS
RDS(ON)	Static drain-source on-state resistance	ID=100mA, VGS=4.0V	-	1.1	-	Ω
Ciss	Input capacitance	VDS=10V, VGS=0V, f=1MHz	-	33	-	pF
Coss	Output capacitance		-	6.8	-	
ton	Switching time	VDD=5V, ID=10mA	-	12	-	ns
toff		VGS=0~5V	-	80	-	

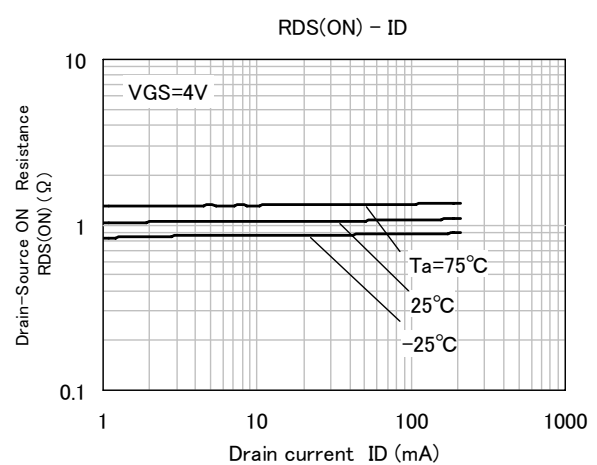
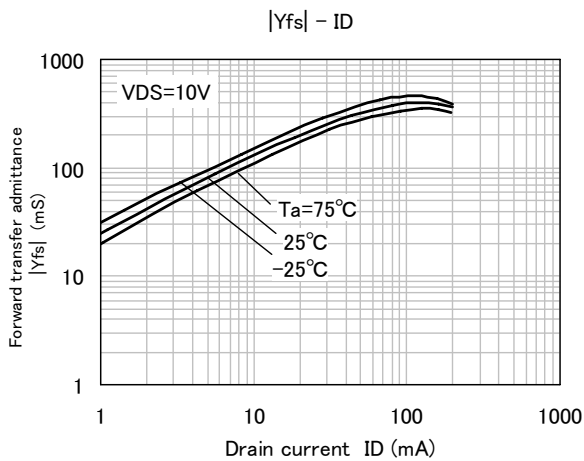
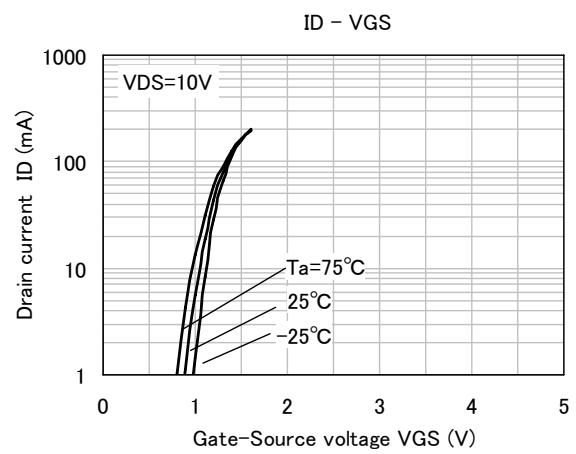
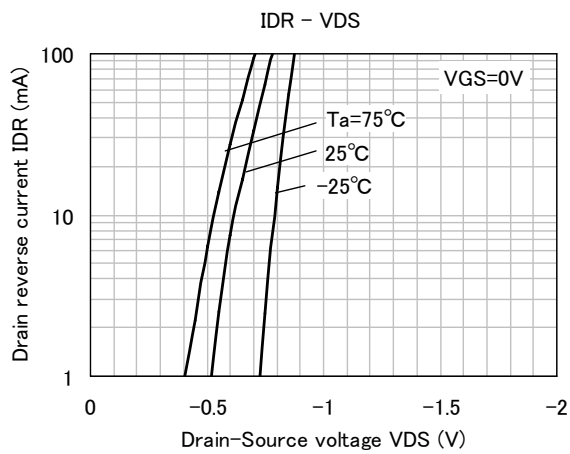
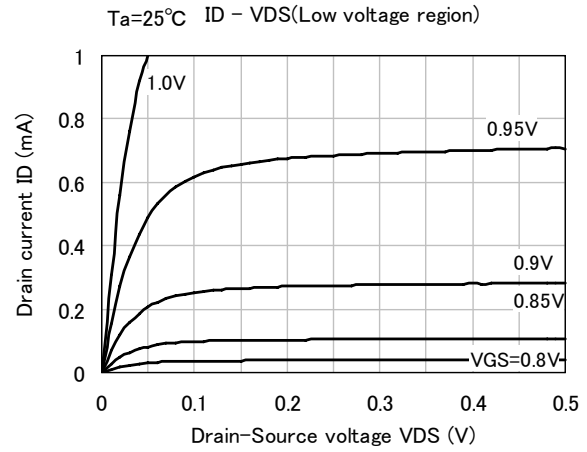
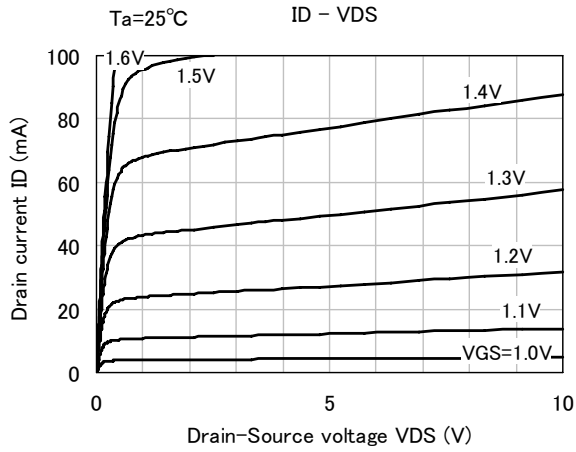
Tr2 ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V(BR)DSS	Drain-source breakdown voltage	ID=-100μA, VGS=0V	-30	-	-	V
IGSS	Gate-source leak current	VGS=±5V, VDS=0V	-	-	±0.5	μA
IDSS	Zero gate voltage drain current	VDS=-30V, VGS=0V	-	-	-1.0	μA
Vth	Gate threshold voltage	ID=-250μA, VDS=VGS	-0.6	-	-1.2	V
Yfs	Forward transfer admittance	VDS=-10V, ID=-0.1A	-	220	-	mS
RDS(ON)	Static drain-source on-state resistance	ID=-100mA, VGS=-4.0V	-	3.0	-	Ω
Ciss	Input capacitance	VDS=-10V, VGS=0V, f=1MHz	-	35	-	pF
Coss	Output capacitance		-	7.3	-	
ton	Switching time	VDD=-5V, ID=-10mA	-	14	-	ns
toff		VGS=0~-5V	-	100	-	

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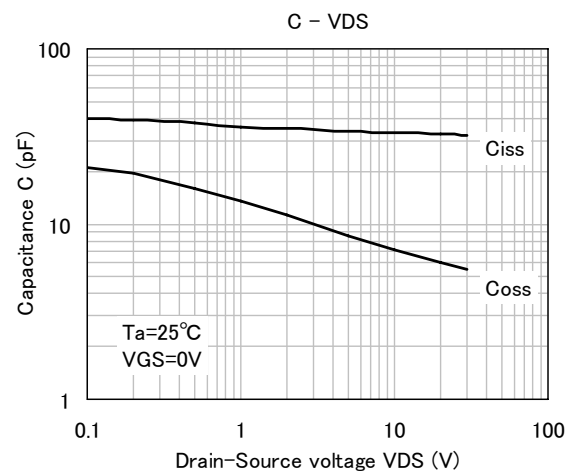
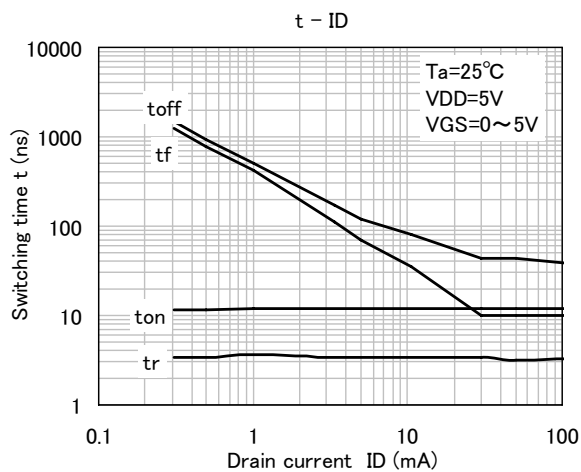
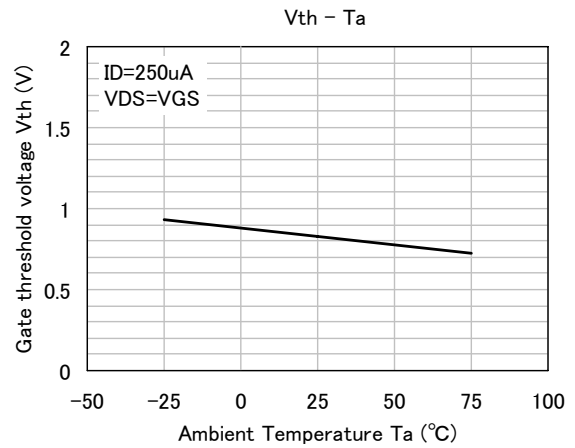
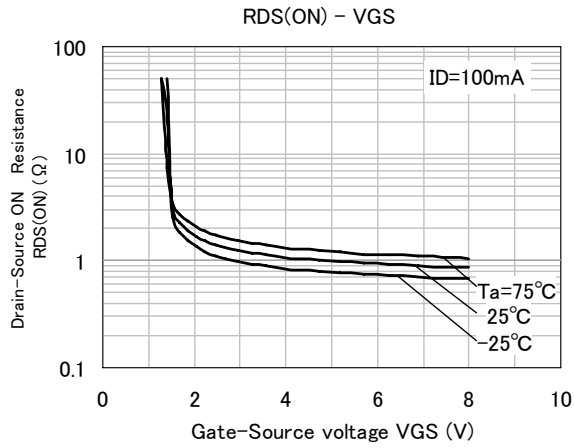
Tr1 TYPICAL CHARACTERISTICS



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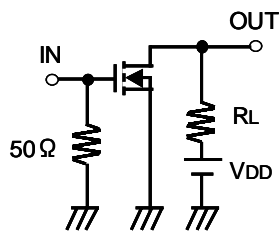
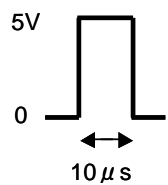
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Tr1 TYPICAL CHARACTERISTICS



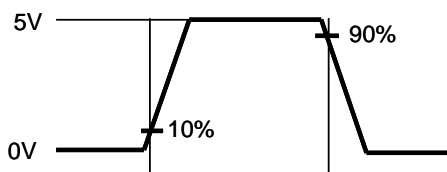
Tr1 Switching time test condition

Test circuit

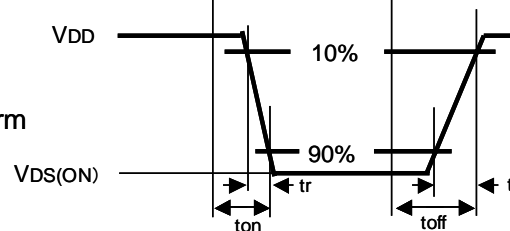


$V_{DD} = 5\text{V}$
Duty $\leq 1\%$
Common source
 $T_a = 25^\circ\text{C}$

Input Waveform



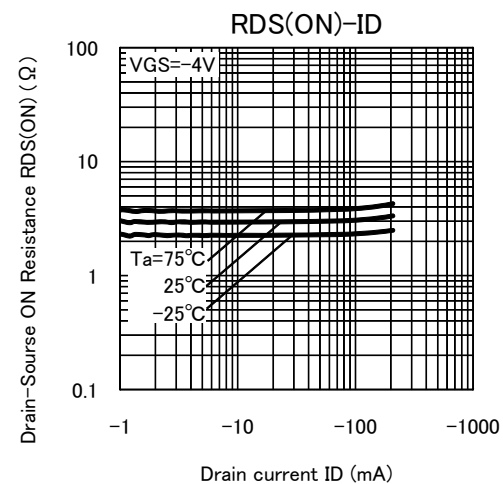
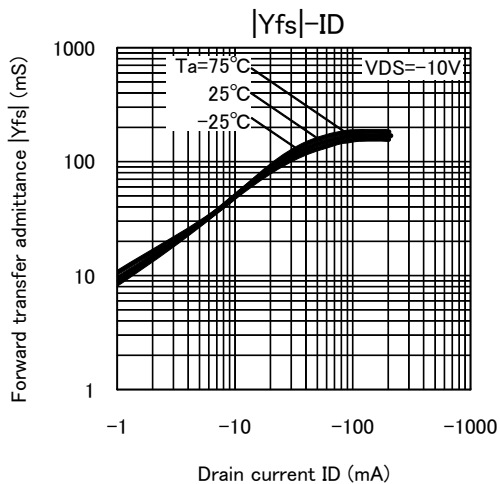
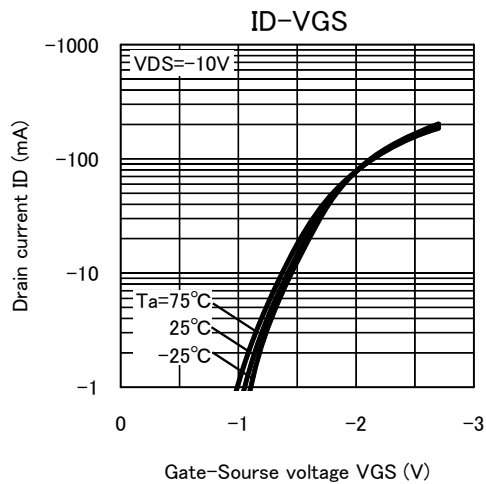
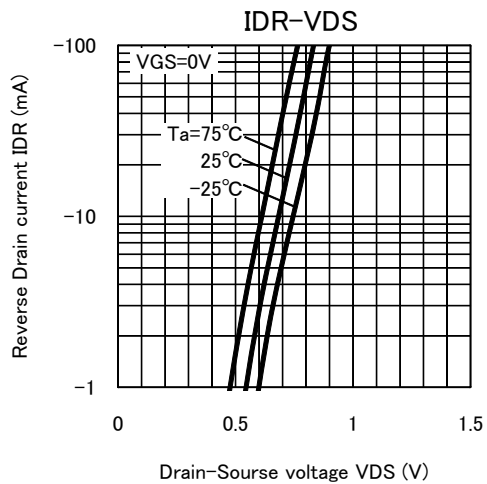
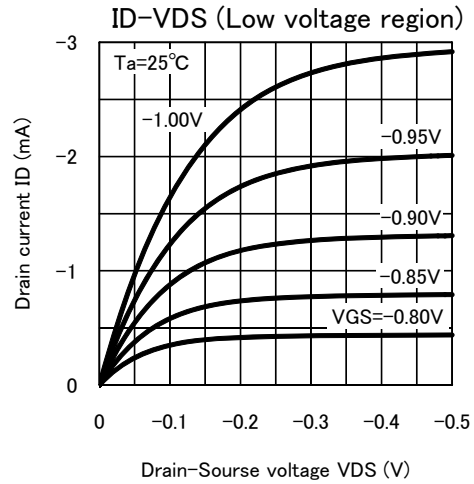
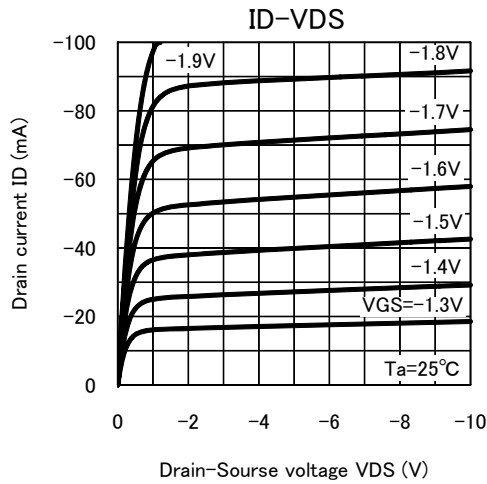
Output Waveform



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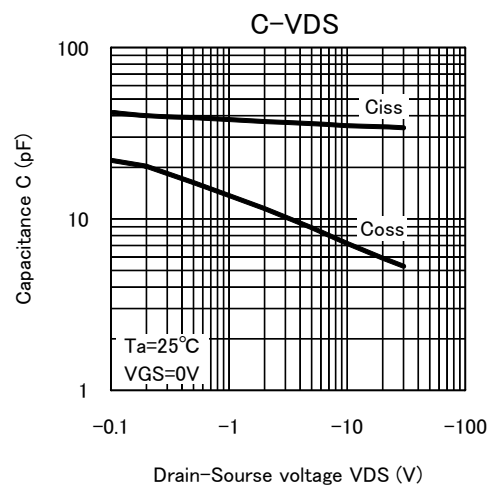
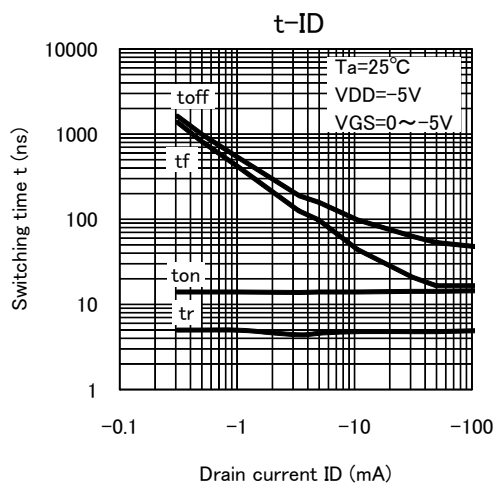
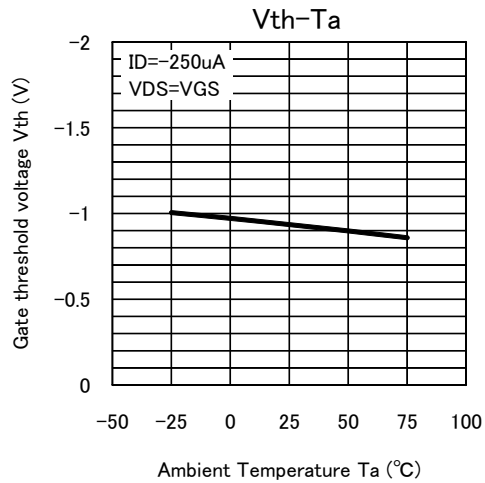
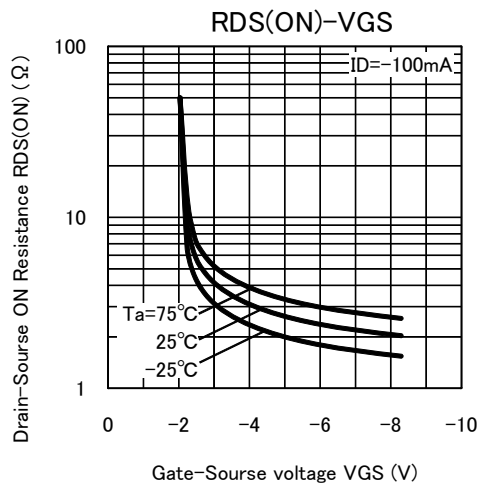
Tr2 TYPICAL CHARACTERISTICS



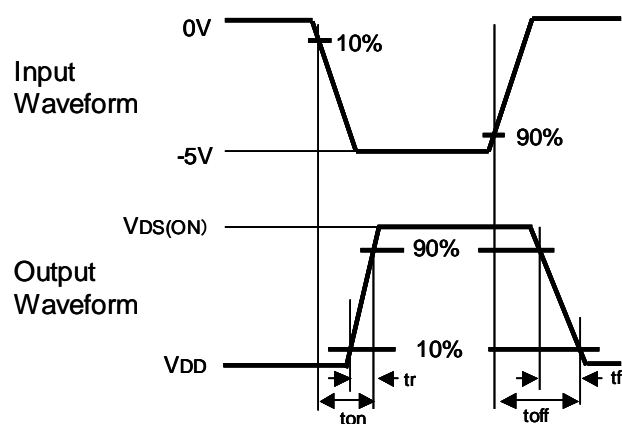
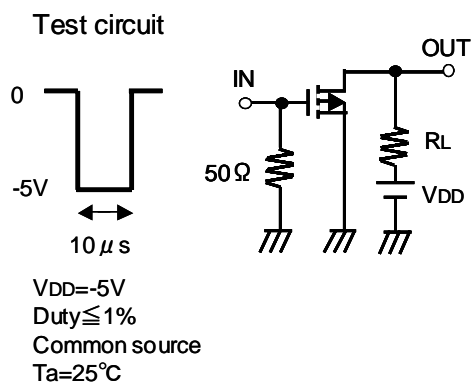
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Tr2 TYPICAL CHARACTERISTICS



Tr2 Switching time test condition





Keep safety first in your circuit designs!

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