

DESCRIPTION

RT3U33M is a composite transistor built with INK0003AX and INJ0003AX chips in SC-88 package.

FEATURE

- Input impedance is high, and not necessary to consider a drive electric current.
- V_{th} is low, and drive by low voltage is possible. $V_{th}=0.6\sim 1.2V$
- Low on Resistance. $R_{on}=0.9 / 2\Omega (Tr1/Tr2)$ TYP
- High speed switching.
- Small package for easy mounting.

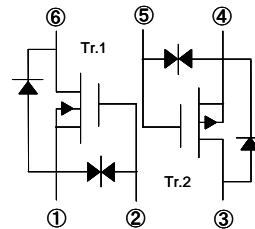
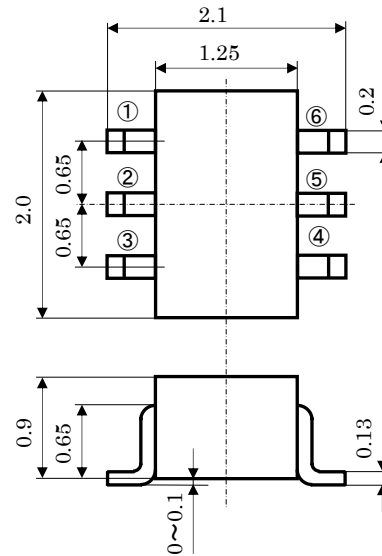
APPLICATION

high speed switching , Analog switching

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

OUTLINE DRAWING

Unit:mm

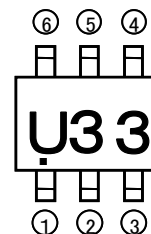


TERMINAL CONNECTOR
①:SOURCE1
②:GATE1
③:DRAIN2
④:SOURCE2
⑤:GATE2
⑥:DRAIN1
JEITA:SC-88

MAXIMUM RATING ($T_a=25^\circ C$)

SYMBOL	PARAMETER	RATING	UNIT
V_{DSS}	Drain-source voltage	20	V
V_{GSS}	Gate-source voltage	± 8	V
I_D	Drain current	200	mA
P_D	Total power dissipation ($T_a=25^\circ C$)	150	mW
T_{ch}	Channel temperature	+125	$^\circ C$
T_{stg}	Range of Storage temperature	-55~+125	$^\circ C$

MARKING

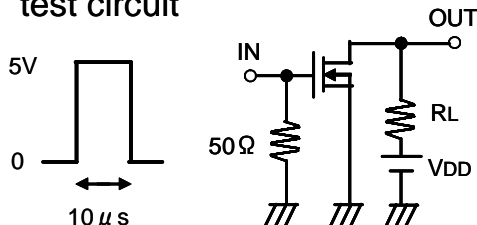


ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit	
			Min	Typ	Max		
$V_{(BR)DSS}$	Drain-source breakdown voltage	$I_D=100\mu A, V_{GS}=0V$	20	-	-	V	
I_{GSS}	Gate-source leak current	$V_{GS}=\pm 5V, V_{DS}=0V$	-	-	± 0.5	μA	
I_{DSS}	Zero gate voltage drain current	$V_{DS}=20V, V_{GS}=0V$	-	-	50	μA	
V_{th}	Gate threshold voltage	$I_D=250\mu A, V_{DS}=V_{GS}$	0.6	-	1.2	V	
$ Y_{fs} $	Forward transfer admittance	$V_{DS}=10V, I_D=0.1A$	Tr1	-	300	-	mS
			Tr2	-	280	-	
$R_{DS(ON)}$	Static drain-source on-state resistance	$I_D=100mA, V_{GS}=4.0V$	Tr1	-	0.9	-	Ω
			Tr2	-	2.0	-	
C_{iss}	Input capacitance	$V_{DS}=10V, V_{GS}=0V, f=1MHz$	Tr1	-	34	-	pF
			Tr2	-	37	-	
C_{oss}	Output capacitance	$V_{DS}=10V, V_{GS}=0V, f=1MHz$	Tr1	-	8.5	-	pF
			Tr2	-	12	-	
t_{ON}	Switching time	$V_{DD}=5V, I_D=10mA$ $V_{GS}=0\sim 5V$	Tr1	-	14	-	ns
t_{OFF}			Tr2	-	16	-	
			Tr1	-	85	-	
			Tr2	-	110	-	

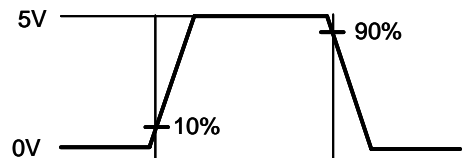
Switching time test condition (Tr.1)

test circuit

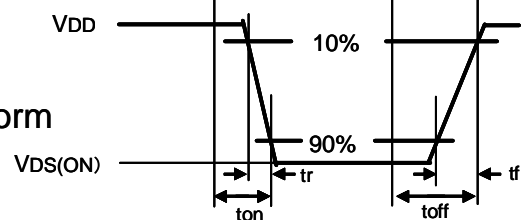


$V_{DD}=5V$
D.U. $\leq 1\%$
Common source
 $T_a=25^\circ C$

input waveform

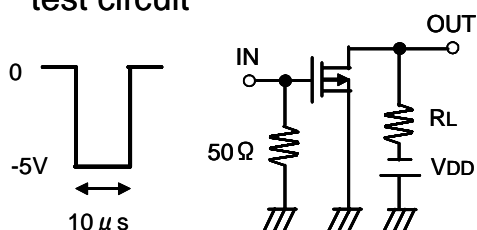


output waveform



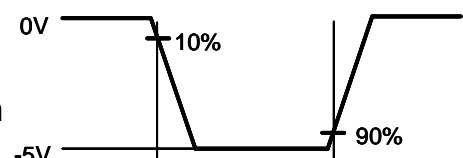
Switching time test condition (Tr.2)

test circuit

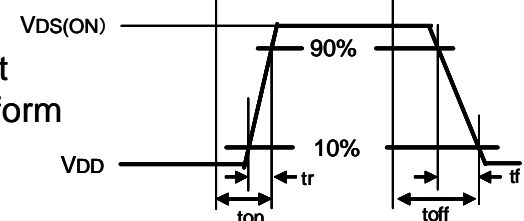


$V_{DD}=-5V$
D.U. $\leq 1\%$
Common source
 $T_a=25^\circ C$

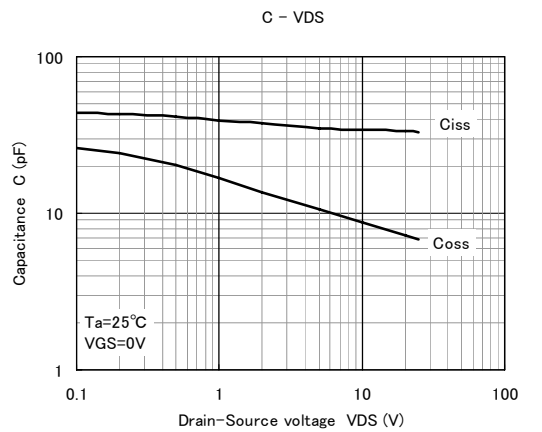
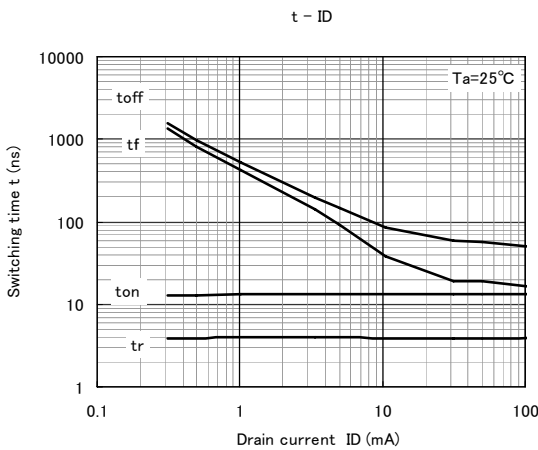
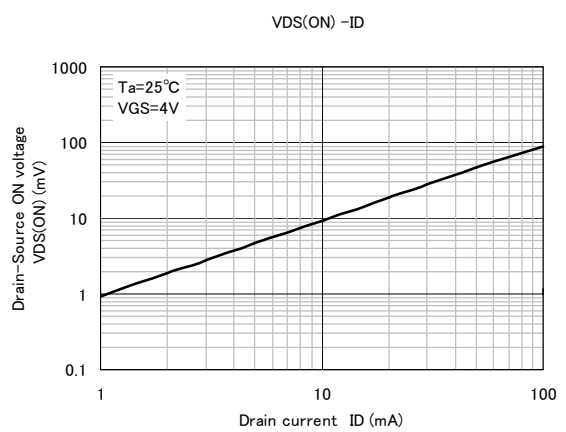
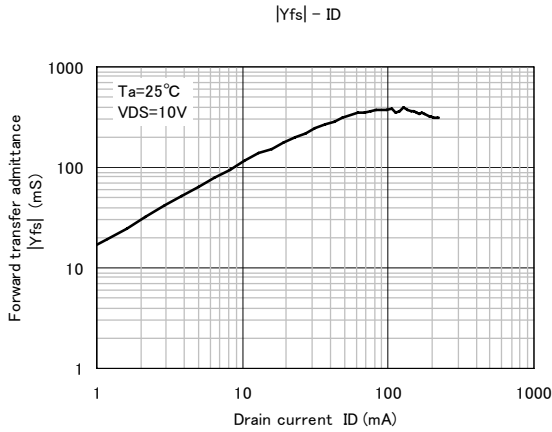
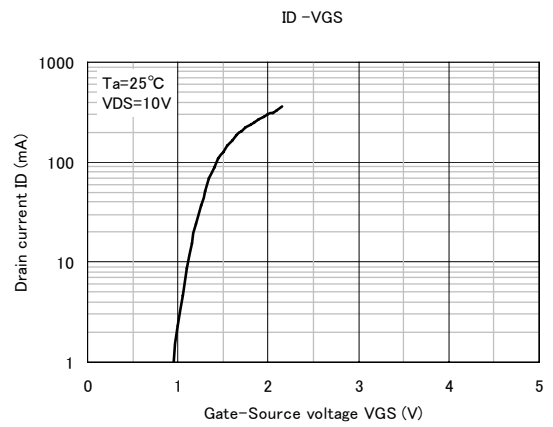
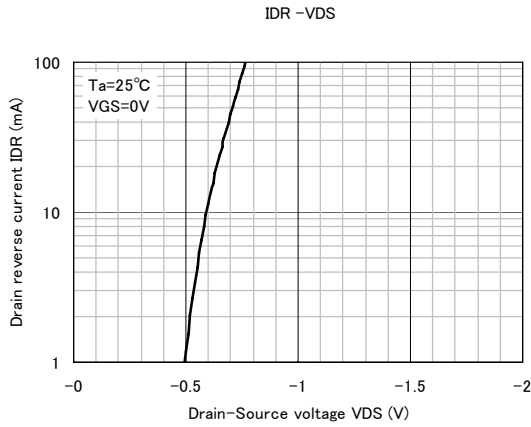
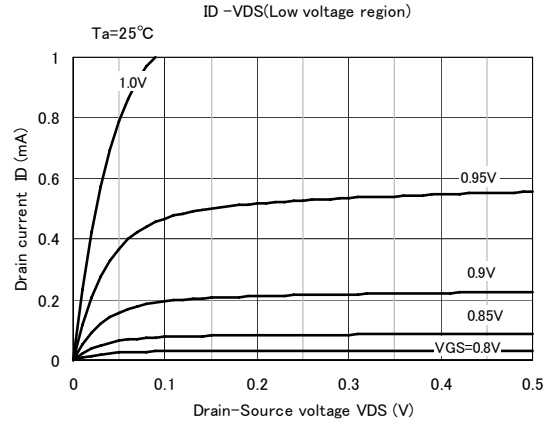
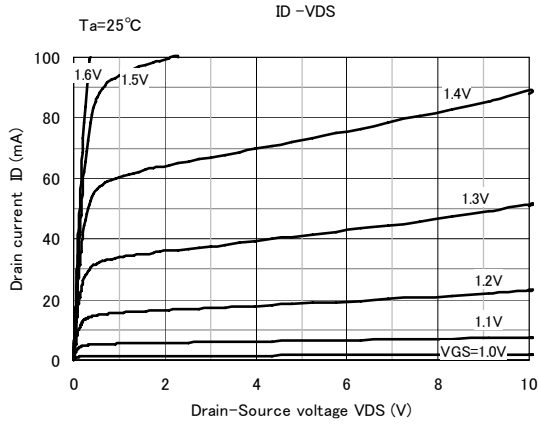
input waveform



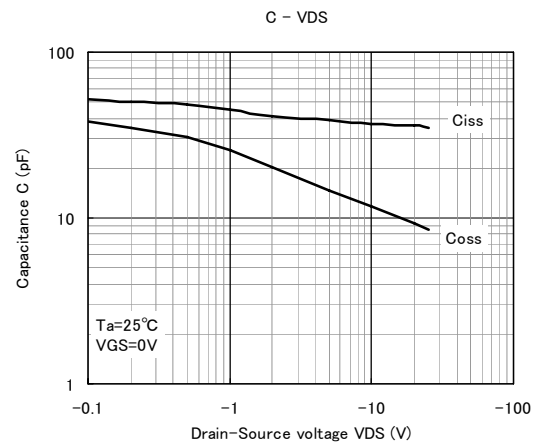
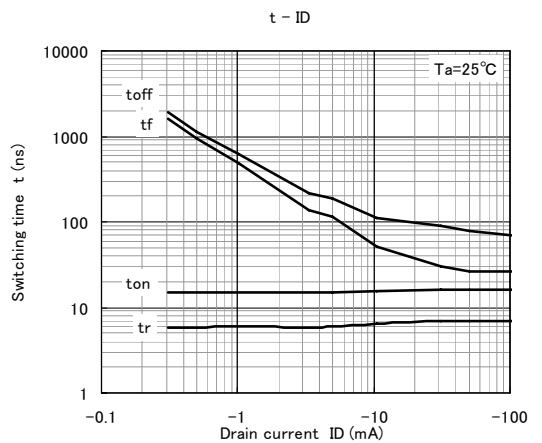
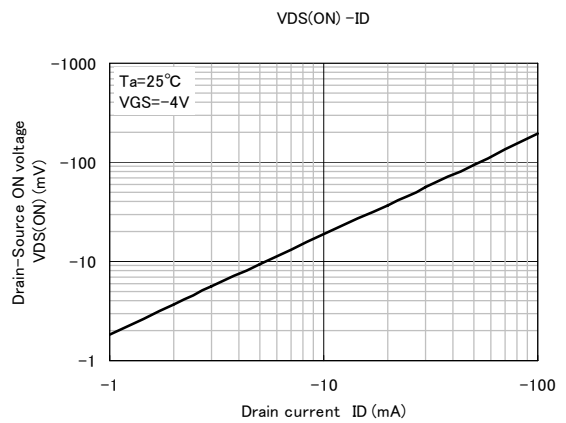
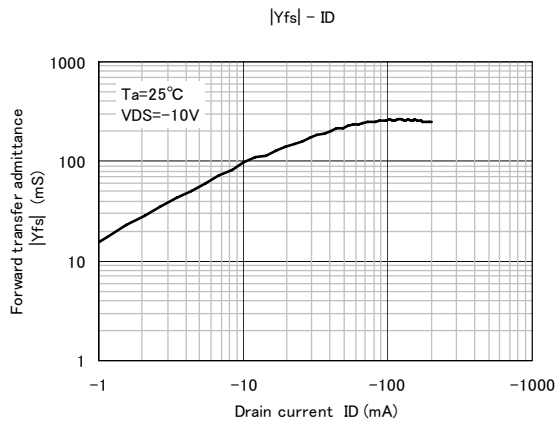
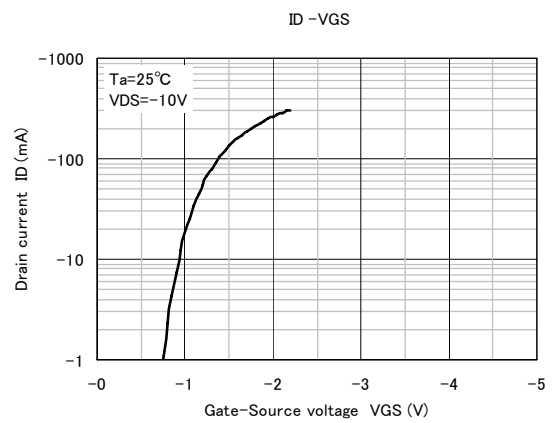
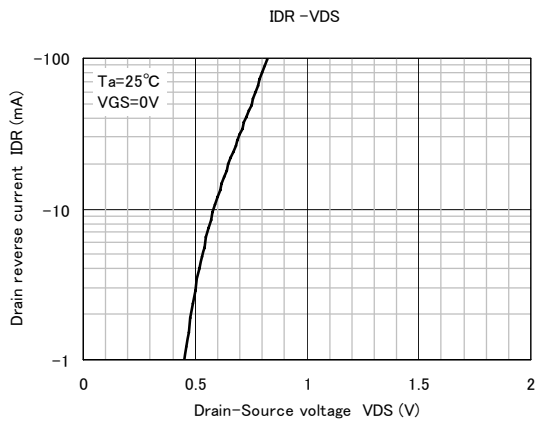
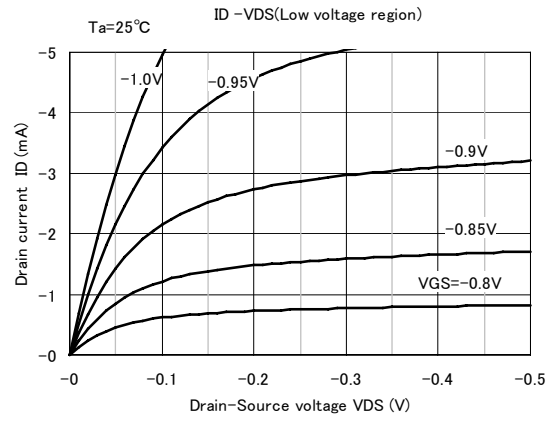
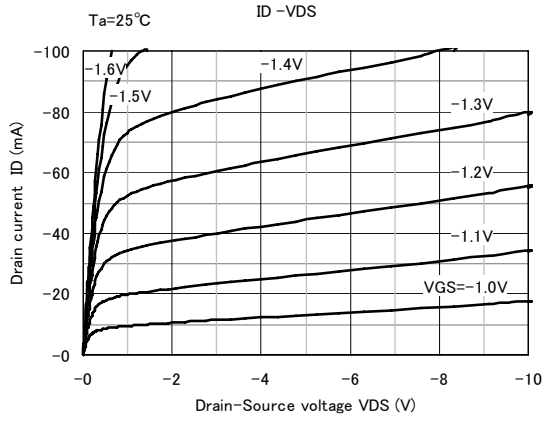
output waveform



TYPICAL CHARACTERISTICS (Tr.1)



TYPICAL CHARACTERISTICS (Tr.2)





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