

INJ0103AC1

High Speed Switching
Silicon P-channel MOSFET

DESCRIPTION

INJ0103AC1 is a Silicon P-channel MOSFET.

This product is most suitable for use such as portable machinery, because of low voltage drive and low on resistance.

FEATURE

- Input impedance is high, and not necessary to consider a drive electric current.
- Drive voltage -1.8V
- Low on Resistance.
 $R_{DS(ON)}=0.67\ \Omega(\text{Typ})$ @ $I_D=-400\text{mA}$, $V_{GS}=-4.5\text{V}$
 $R_{DS(ON)}=1.1\ \Omega(\text{Typ})$ @ $I_D=-300\text{mA}$, $V_{GS}=-2.5\text{V}$
 $R_{DS(ON)}=1.6\ \Omega(\text{Typ})$ @ $I_D=-10\text{mA}$, $V_{GS}=-1.8\text{V}$
- High speed switching.
- Small package for easy mounting.

APPLICATION

High speed switching, Analog switching

MAXIMUM RATINGS (Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-20	V
Gate-Source Voltage	V_{GSS}	± 8	V
Drain Current (DC)	I_D	-550	mA
Drain Current (Pulse)	I_{DP}	-2.2^{*1}	A
Total Power Dissipation	PD	200	mW
		600^{*2}	mW
Channel Temperature	T_{ch}	+150	°C
Storage Temperature	T_{stg}	$-55\sim+150$	°C

*1: $P_w \leq 10\ \mu\text{s}$, Duty cycle $\leq 1\%$

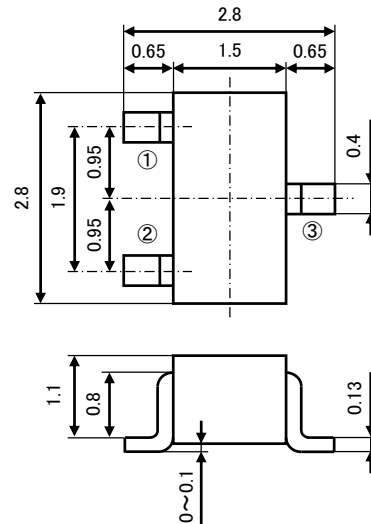
*2: package mounted on glass-epoxy substrate
(20mm × 20mm × 1mm, Cu pad 100mm²)

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test Condition	Limit			Unit
			Min	Typ	Max	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-100\ \mu\text{A}$, $V_{GS}=0\text{V}$	-20	-	-	V
Gate-Source Leak Current	I_{GSS}	$V_{GS}=\pm 5\text{V}$, $V_{DS}=0\text{V}$	-	-	± 0.5	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20\text{V}$, $V_{GS}=0\text{V}$	-	-	-1.0	μA
Gate Threshold Voltage	V_{th}	$I_D=-250\ \mu\text{A}$, $V_{DS}=V_{GS}$	-0.4	-	-1.3	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=-5\text{V}$, $I_D=-200\text{mA}$	-	400	-	mS
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$I_D=-400\text{mA}$, $V_{GS}=-4.5\text{V}$	-	0.67	-	Ω
		$I_D=-300\text{mA}$, $V_{GS}=-2.5\text{V}$	-	1.1	-	
		$I_D=-10\text{mA}$, $V_{GS}=-1.8\text{V}$	-	1.6	-	
Input Capacitance	C_{iss}	$V_{DS}=-10\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	-	57	-	pF
Output Capacitance	C_{oss}		-	20	-	
Switching Time	t_{on}	$V_{DD}=-10\text{V}$, $I_D=-400\text{mA}$	-	42	-	ns
	t_{off}	$V_{GS}=0\sim-5\text{V}$	-	140	-	

OUTLINE DRAWING

UNIT : mm



JEITA : SC-59

JEDEC : Similar to TO-236

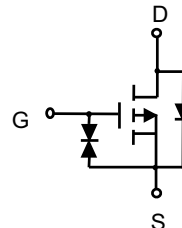
TERMINAL CONNECTOR

① : GATE

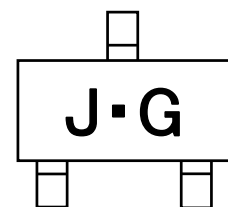
② : SOURCE

③ : DRAIN

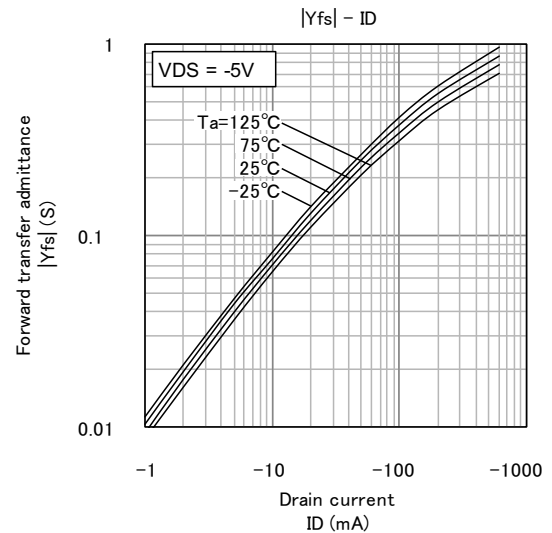
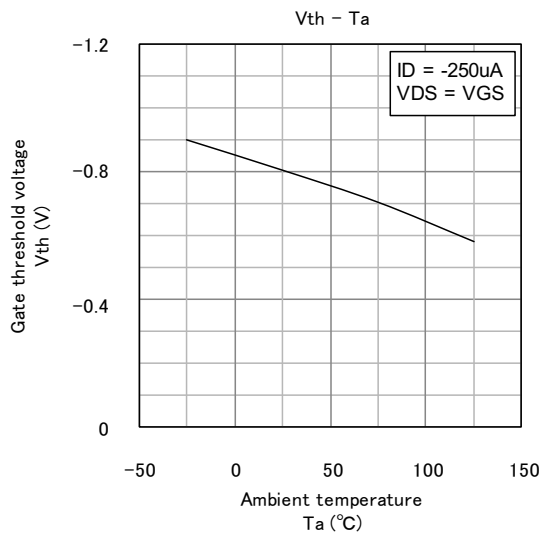
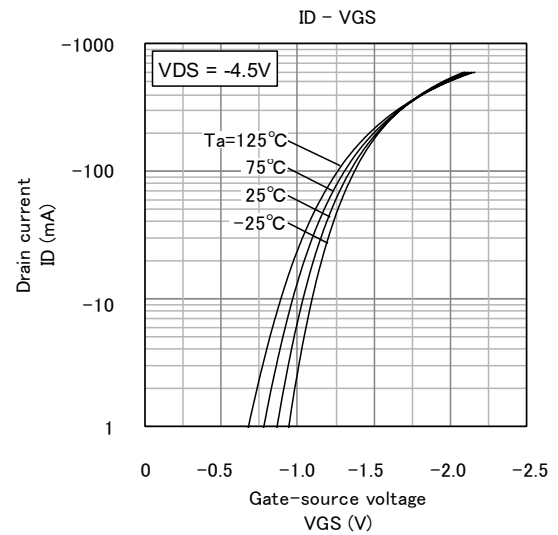
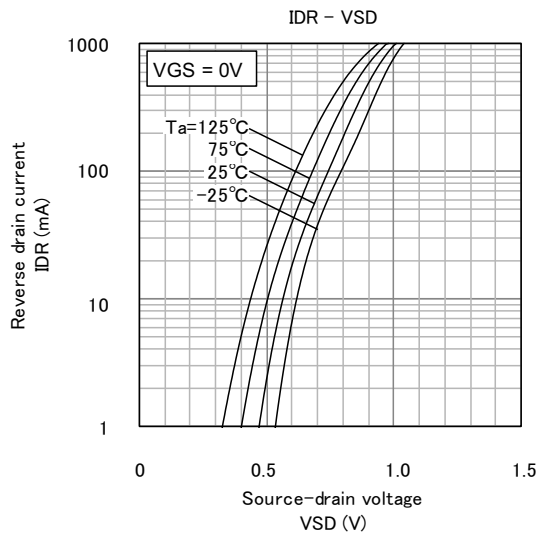
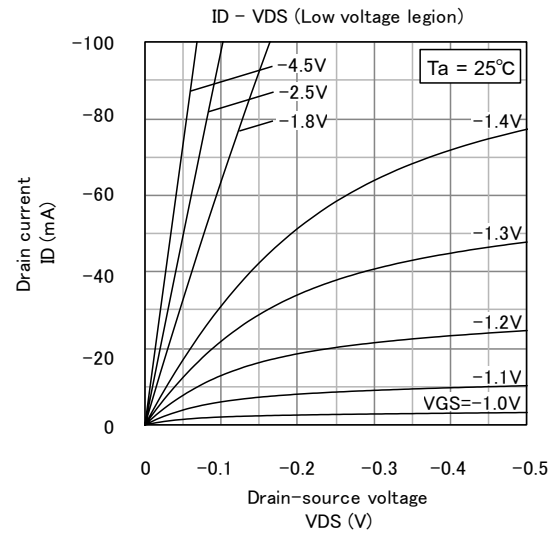
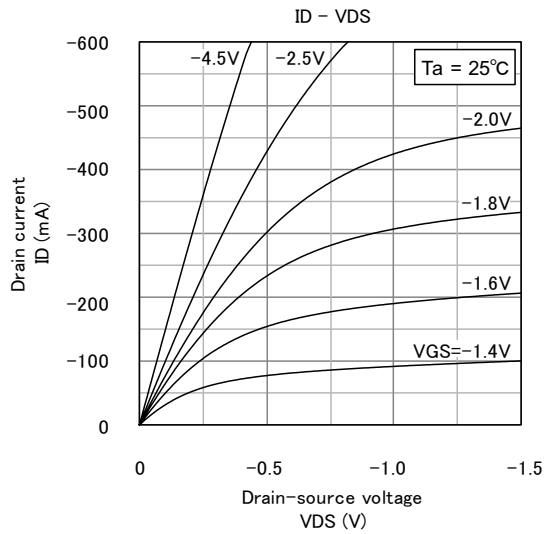
EQUIVALENT CIRCUIT



MARKING

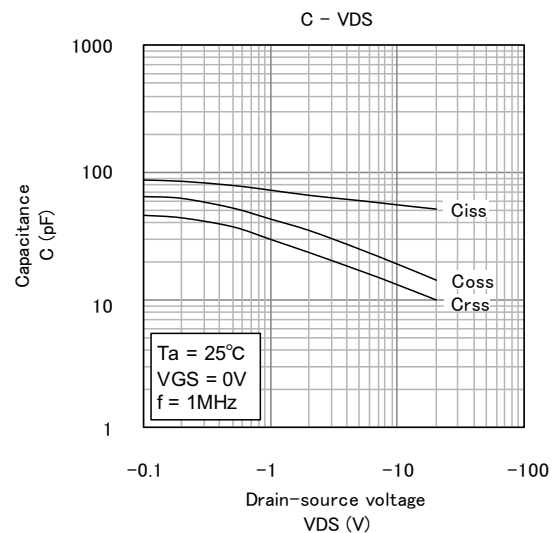
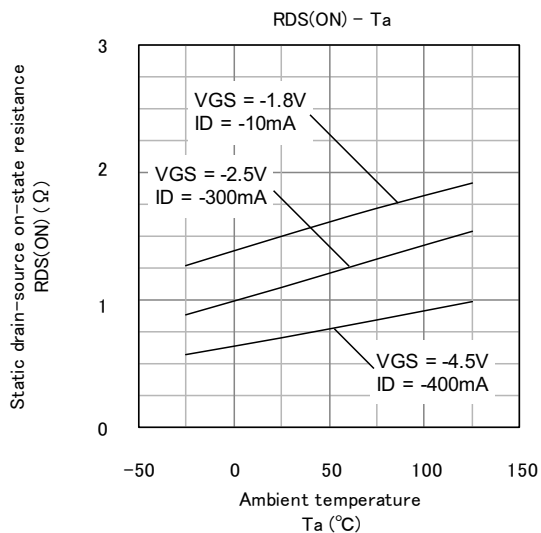
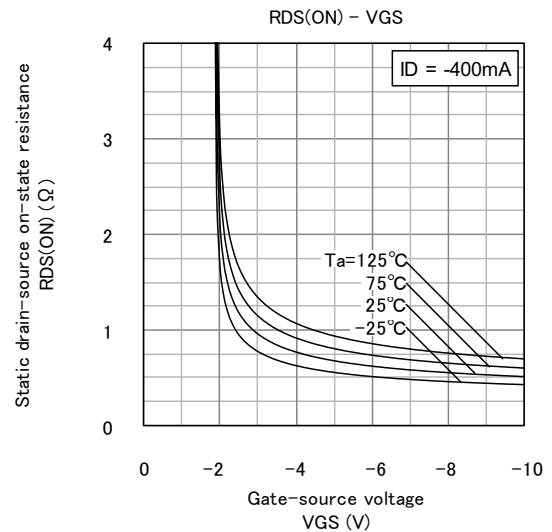
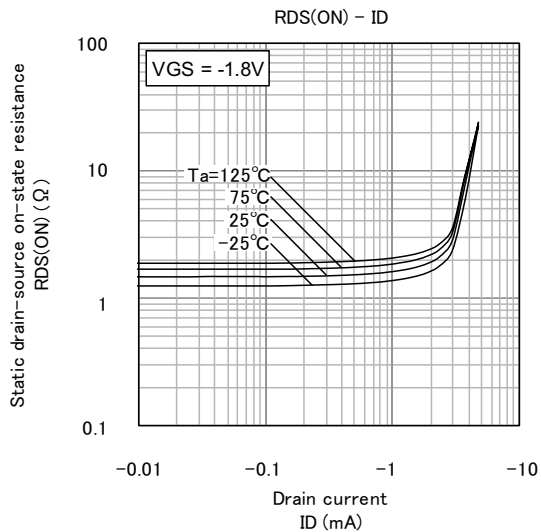
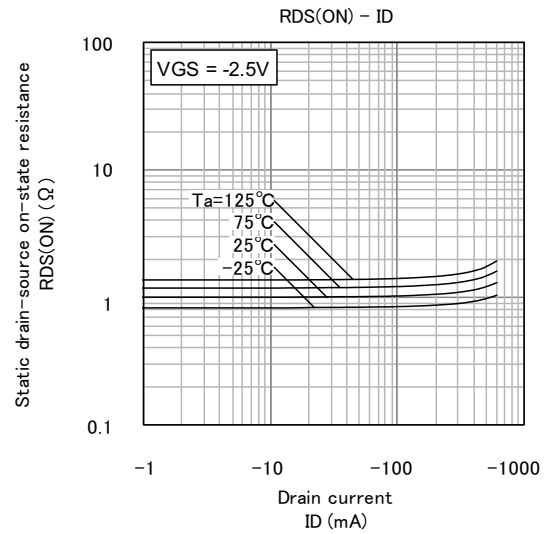
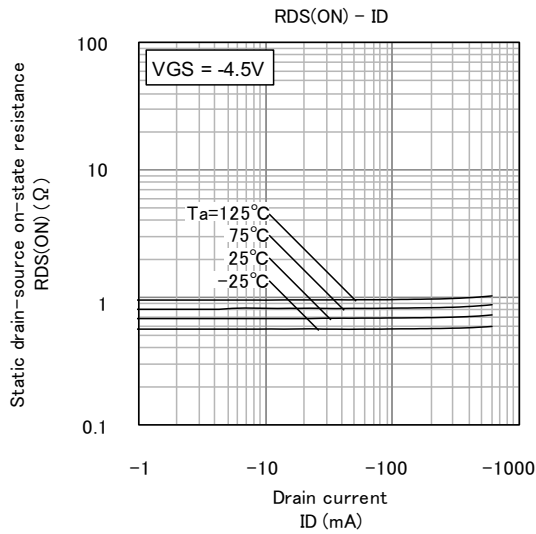


TYPICAL CHARACTERISTICS



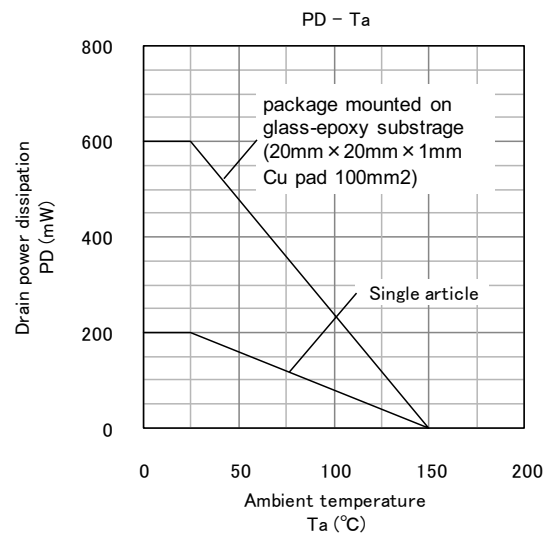
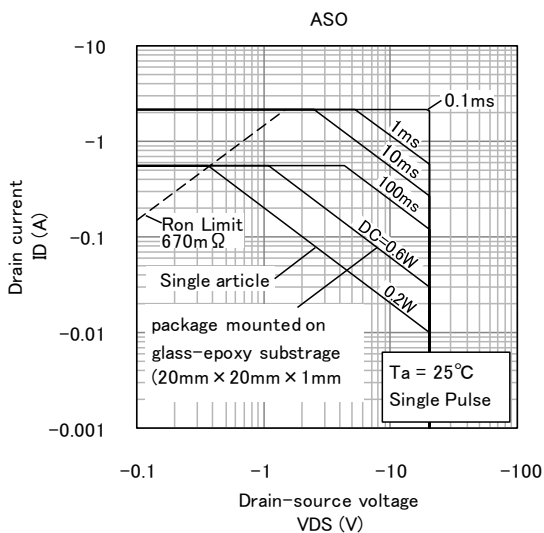
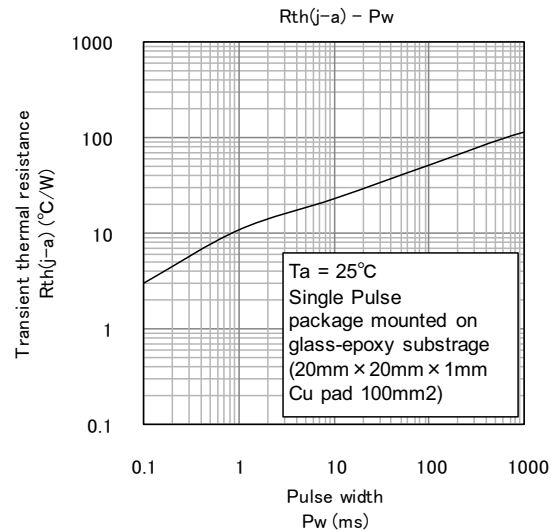
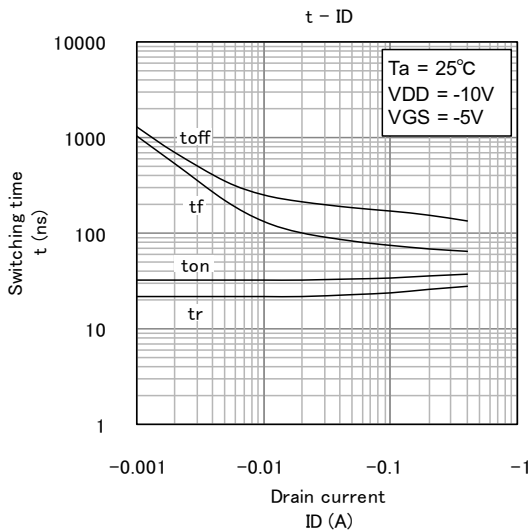
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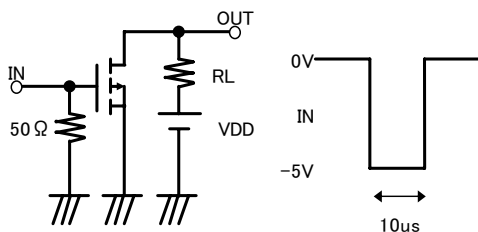


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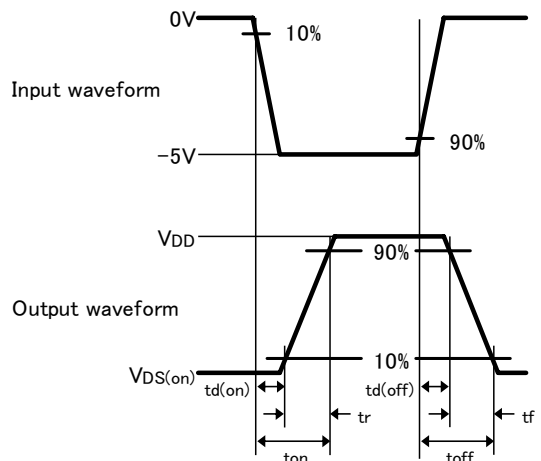
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Switching time test condition



Duty $\leq 1\%$
Input: $t_r, t_f < 10\text{ns}$
 $V_{DD} = -10\text{V}$
Common source
 $T_a = 25^\circ\text{C}$





Keep safety first in your circuit designs!

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