

INJ0303AC1

High Speed Switching
Silicon P-channel MOSFET

DESCRIPTION

INJ0303AC1 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

- Drive voltage $-2.0V$
- Low on resistance.
 $R_{DS(ON)}=50m\Omega$ (TYP) @ $I_D=-1.5A$, $V_{GS}=-4.0V$
 $R_{DS(ON)}=70m\Omega$ (TYP) @ $I_D=-1.5A$, $V_{GS}=-2.5V$
 $R_{DS(ON)}=90m\Omega$ (TYP) @ $I_D=-1.5A$, $V_{GS}=-2.0V$
- High speed switching.
- Small package for easy mounting.

APPLICATION

Switching

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

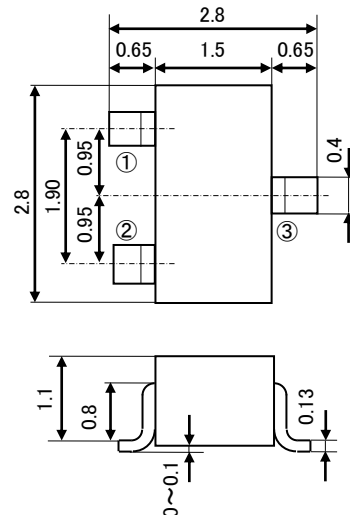
Parameter	Symbol	Rating	Unit
Drain-source voltage	V_{DSS}	-12	V
Gate-source voltage	V_{GSS}	± 8	V
Drain current(DC)	I_D	-3.0	A
Drain current(Pulse)	I_{DP}^{*1}	-6.0	A
Total power dissipation	P_D	200	mW
	P_D^{*2}	650	mW
Channel temperature	T_{ch}	+150	$^\circ C$
Storage temperature	T_{stg}	-55~+150	$^\circ C$

*1 $P_w \leq 10 \mu s$, Duty cycle $\leq 1\%$

*2 Package mounted on $20mm \times 20mm \times 1mm$ (Cu pad $100mm^2$)
glass-epoxy substrate

OUTLINE DRAWING

Unit: mm



JEITA: SC-59

JEDEC: Similar to TO-236

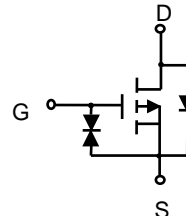
TERMINAL CONNECTOR

①: GATE

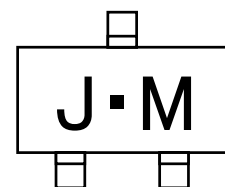
②: SOURCE

③: DRAIN

EQUIVALENT CIRCUIT



MARKING



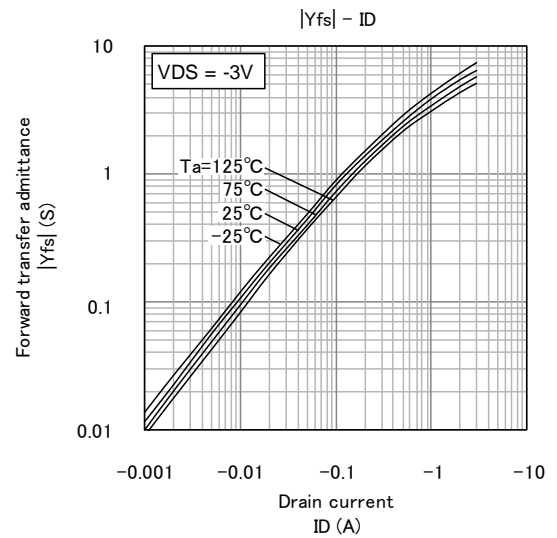
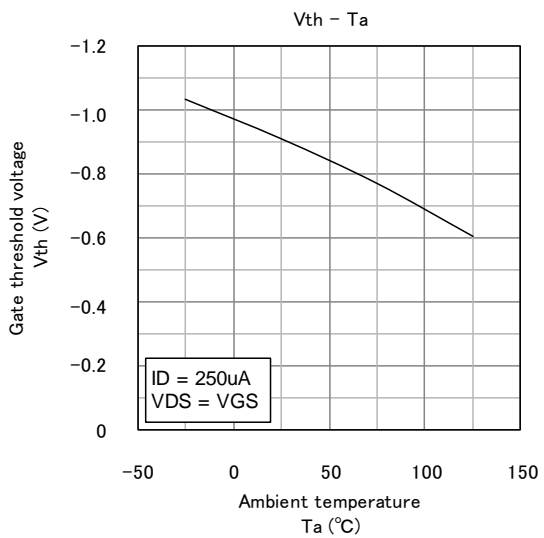
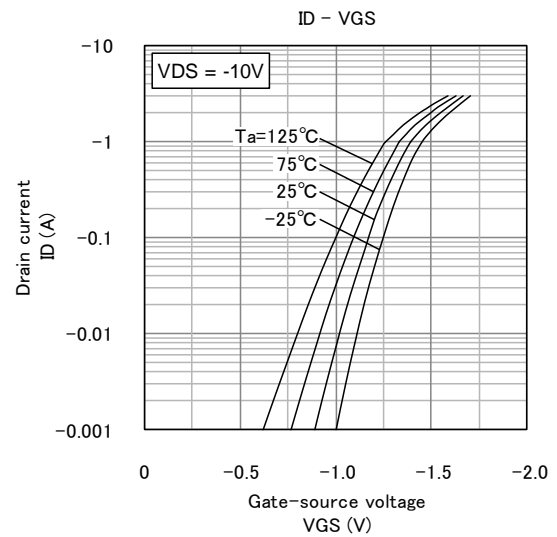
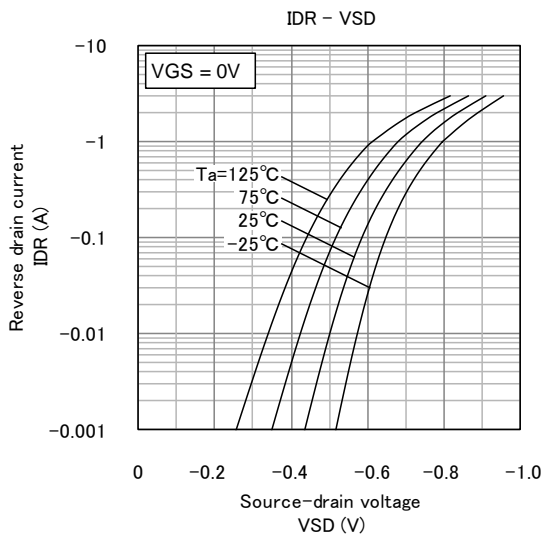
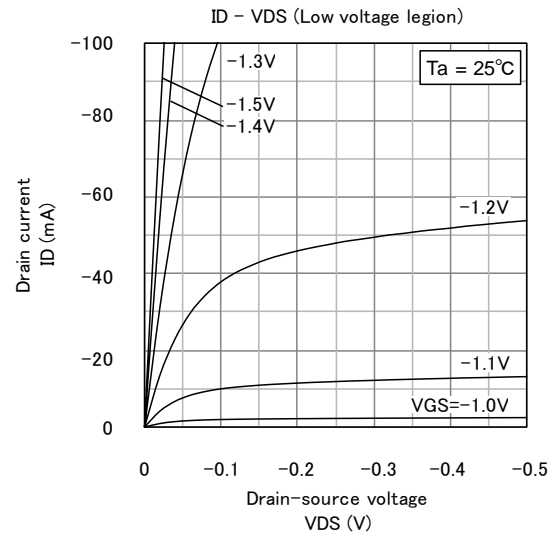
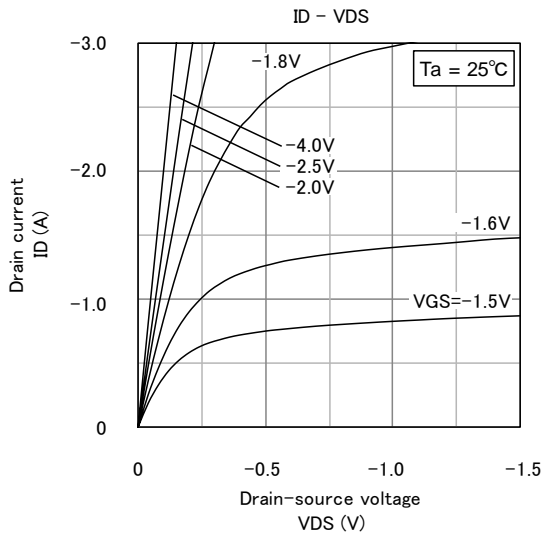
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

Parameter	Symbol	Test condition	Limit			Unit
			MIN	TYP	MAX	
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D=-100 \mu A$, $V_{GS}=0V$	-12	-	-	V
Gate-source leak current	I_{GSS}	$V_{GS}=\pm 5V$, $V_{DS}=0V$	-	-	± 0.5	μA
Zero gate voltage drain current	I_{DSS}	$V_{DS}=-12V$, $V_{GS}=0V$	-	-	-1.0	μA
Gate threshold voltage	V_{th}	$I_D=-250 \mu A$, $V_{DS}=V_{GS}$	-0.4	-	-1.2	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=-3V$, $I_D=-1.5A$	3.6	-	-	S
Static drain-source on-state resistance	$R_{DS(ON)}$	$I_D=-1.5A$, $V_{GS}=-4.0V$	-	50	70	m Ω
		$I_D=-1.5A$, $V_{GS}=-2.5V$	-	70	95	
		$I_D=-1.5A$, $V_{GS}=-2.0V$	-	90	180	
Input capacitance	C_{iss}	$V_{DS}=-10V$, $V_{GS}=0V$, $f=1MHz$	-	650	-	pF
Output capacitance	C_{oss}		-	190	-	
Reverse transfer capacitance	C_{rss}		-	150	-	
Switching time (turn on time)	t_{on}	$V_{DD}=-10V$, $I_D=-1A$	-	100	-	ns
Switching time (turn off time)	t_{off}	$V_{GS}=0 \sim -2.5V$	-	145	-	

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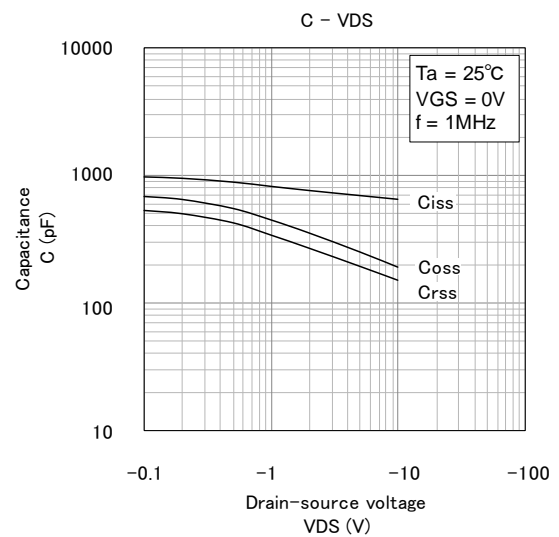
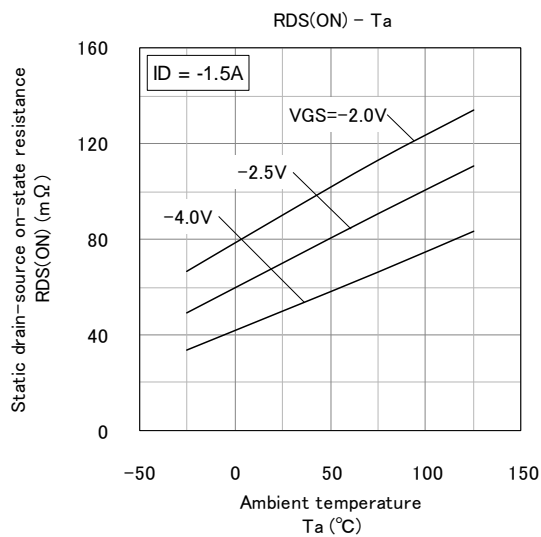
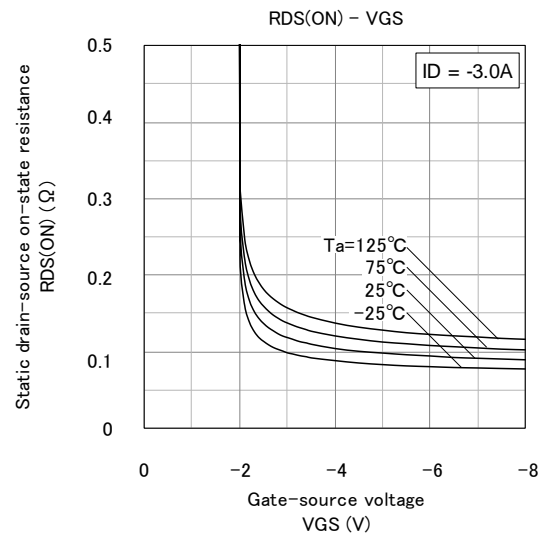
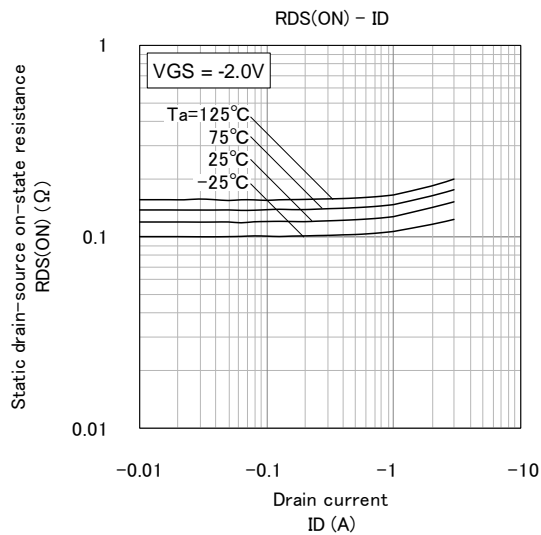
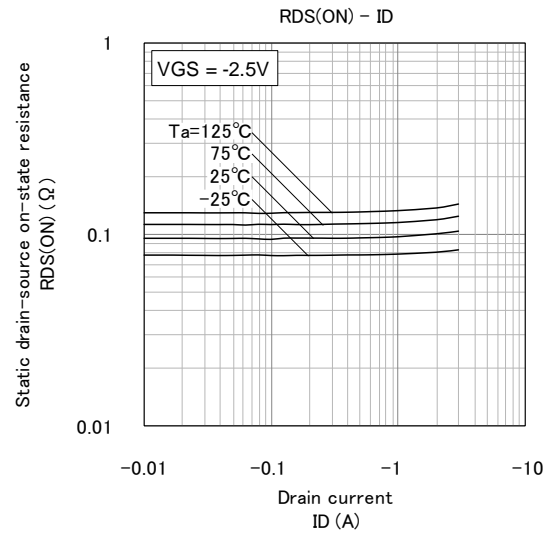
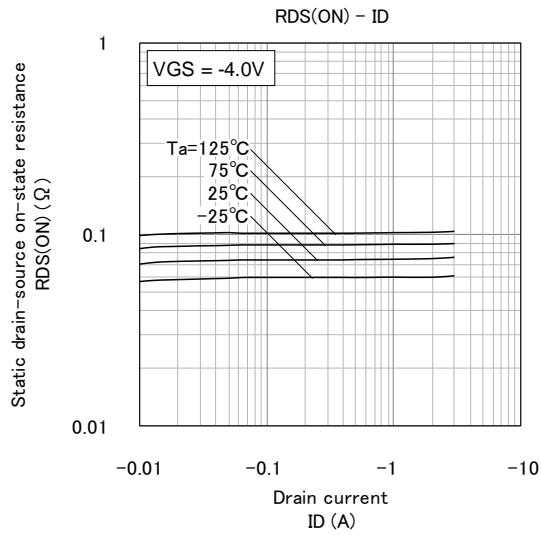
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TYPICAL CHARACTERISTICS



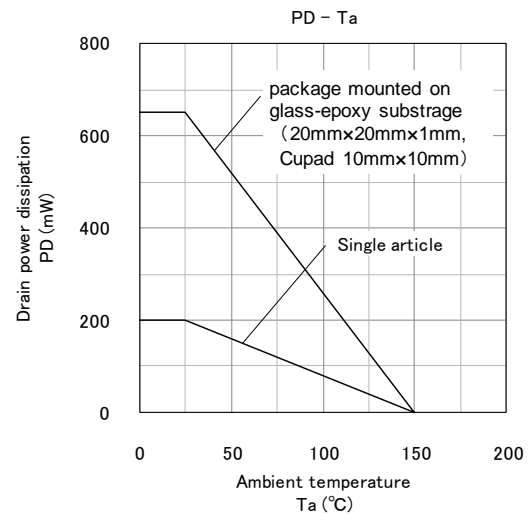
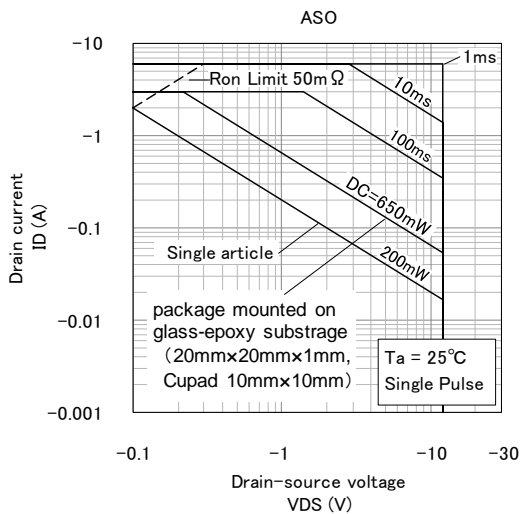
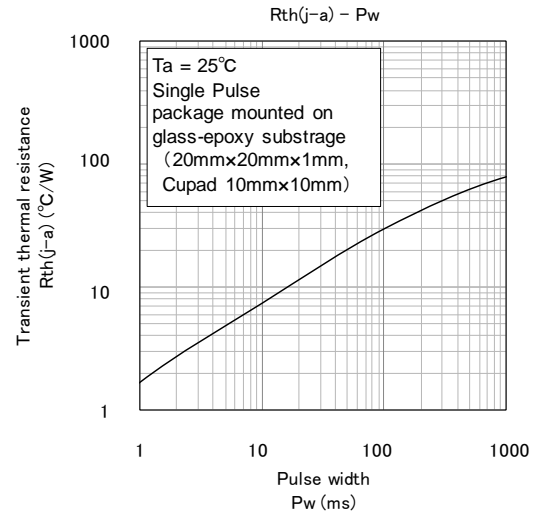
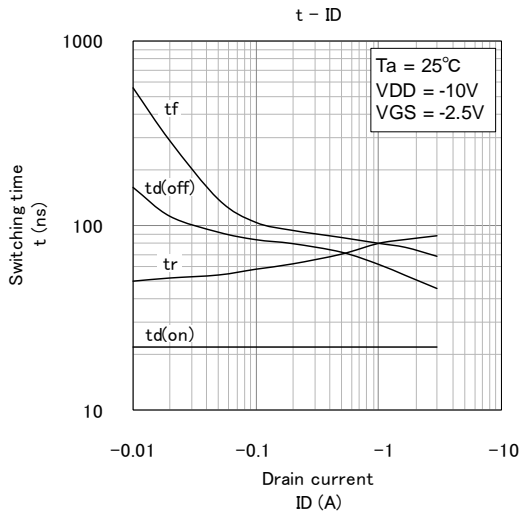
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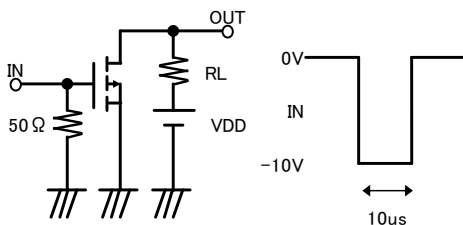


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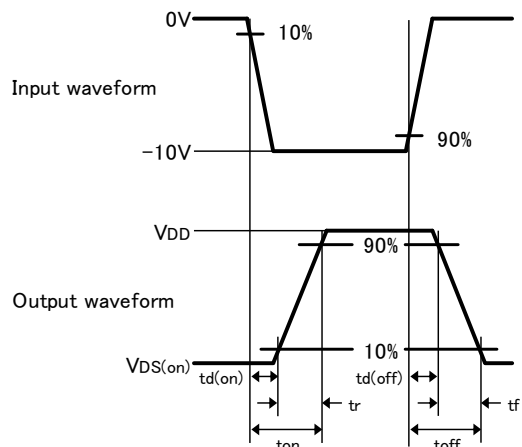
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Switching time test condition



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



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