

# INJ0303AC1-T150

High Speed Switching  
Silicon P-channel MOSFET

AEC-Q101 Compliance

## 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 (Ta=25°C)

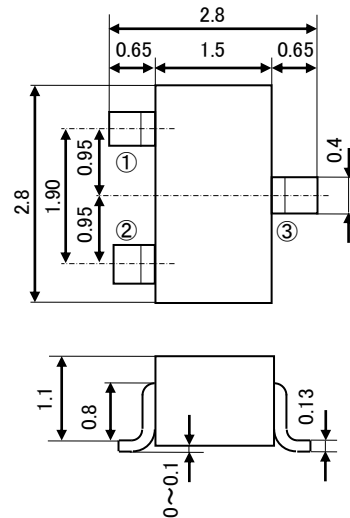
Parameter	Symbol	Rating	Unit
Drain-source voltage	$V_{DSS}$	-12	V
Gate-source voltage	$V_{GSS}$	$\pm 8$	V
Drain current(DC)	$I_D$	-3.0	A
Drain current(Pulse)	$I_{DP}^{*1}$	-6.0	A
Total power dissipation	$P_D$	200	mW
	$P_D^{*2}$	650	mW
Channel temperature	$T_{ch}$	+150	°C
Storage temperature	$T_{stg}$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

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

\*2 Package mounted on 20mm x 20mm x 1mm (Cu pad 100mm<sup>2</sup>)  
glass-epoxy substrate

## OUTLINE DRAWING

Unit: mm



JEITA: SC-59

JEDEC: Similar to TO-236

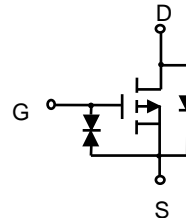
TERMINAL CONNECTOR

①: GATE

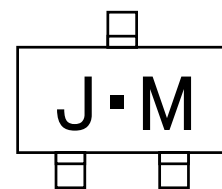
②: SOURCE

③: DRAIN

## EQUIVALENT CIRCUIT



## MARKING



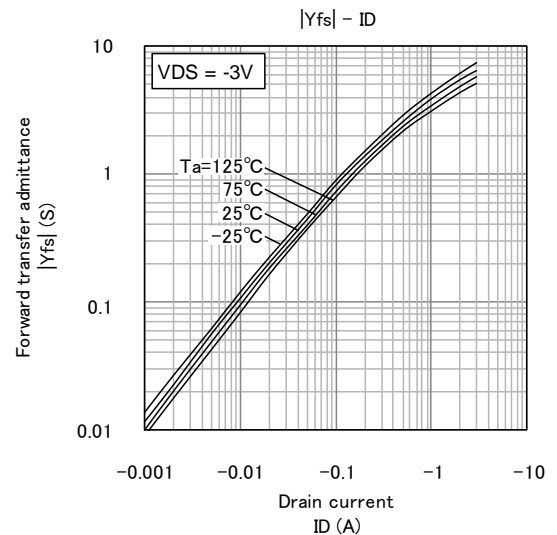
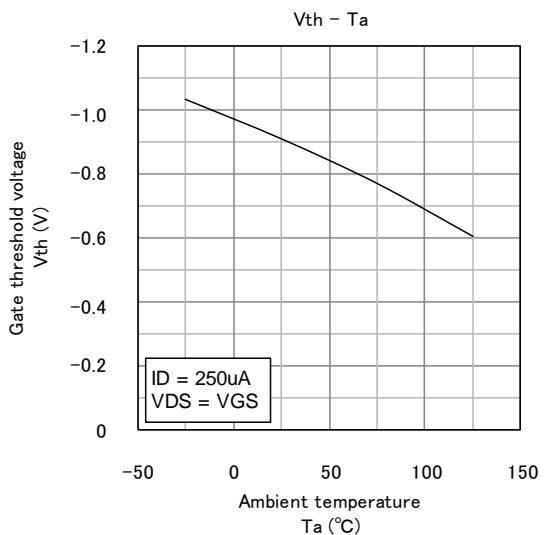
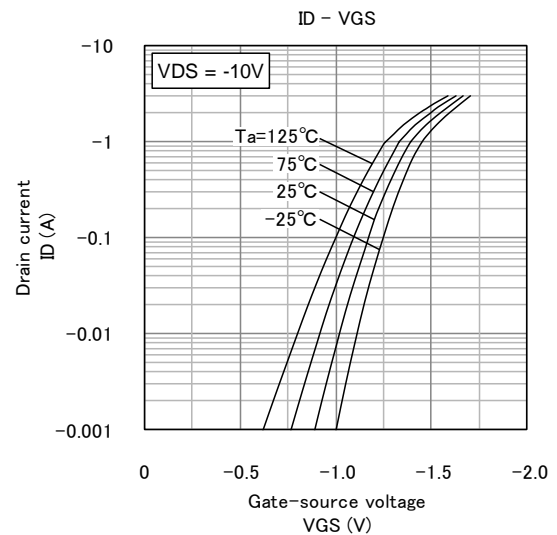
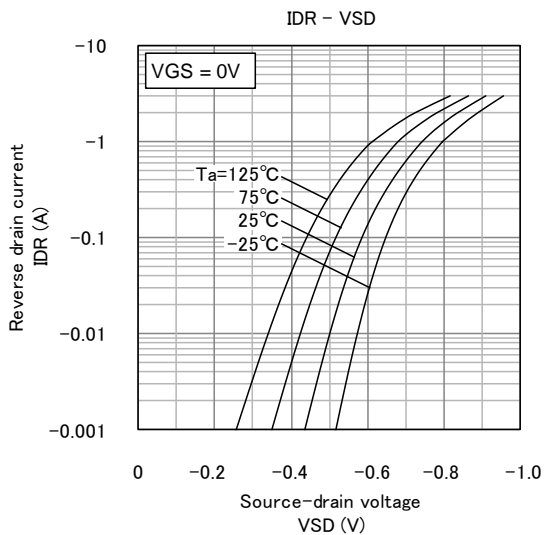
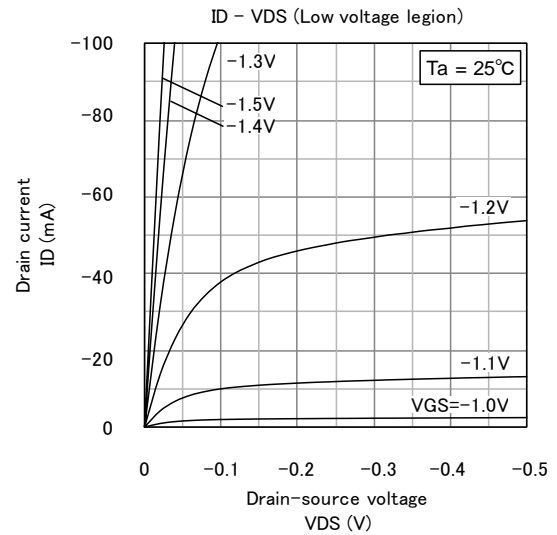
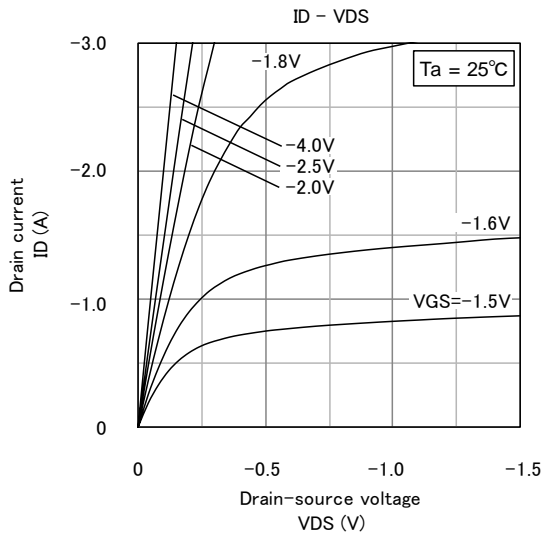
## ELECTRICAL CHARACTERISTICS (Ta=25°C)

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	$I_{GSS}$	$V_{GS}=\pm 5V$ , $V_{DS}=0V$	-	-	$\pm 0.5$	$\mu A$
Zero gate voltage drain current	$I_{DSS}$	$V_{DS}=-12V$ , $V_{GS}=0V$	-	-	-1.0	$\mu A$
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 $\Omega$
		$I_D=-1.5A$ , $V_{GS}=-2.5V$	-	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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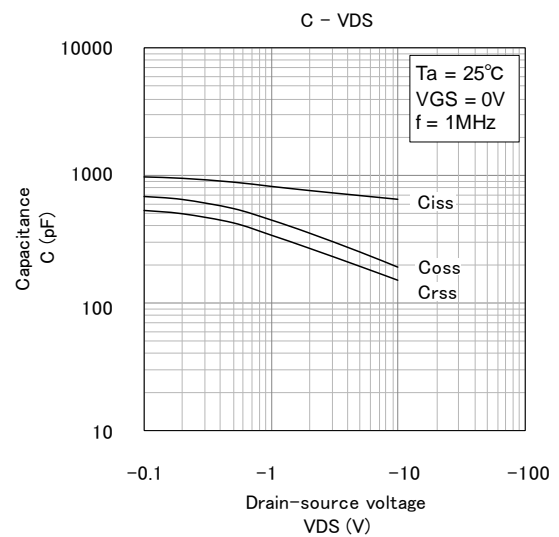
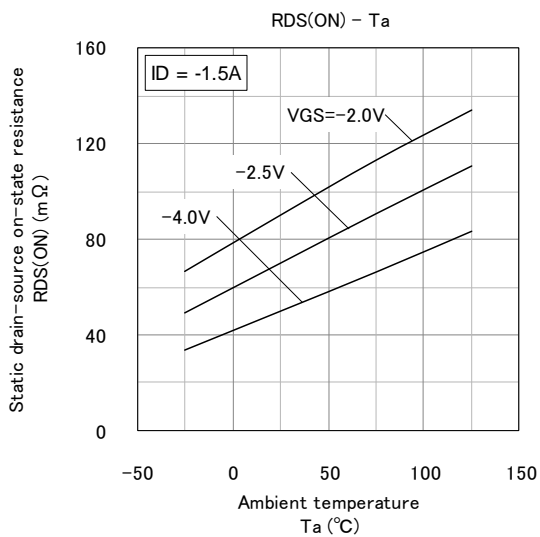
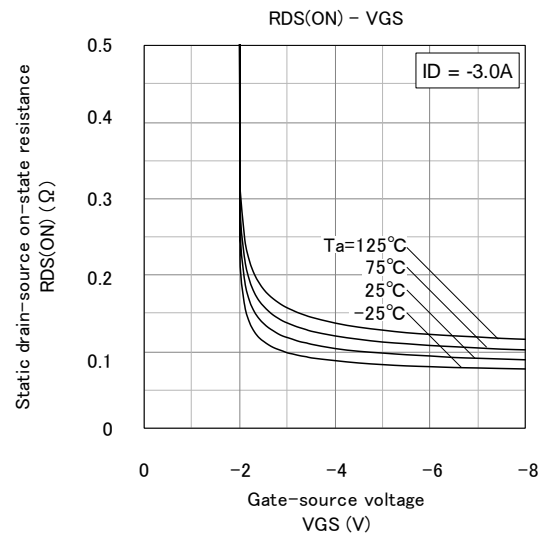
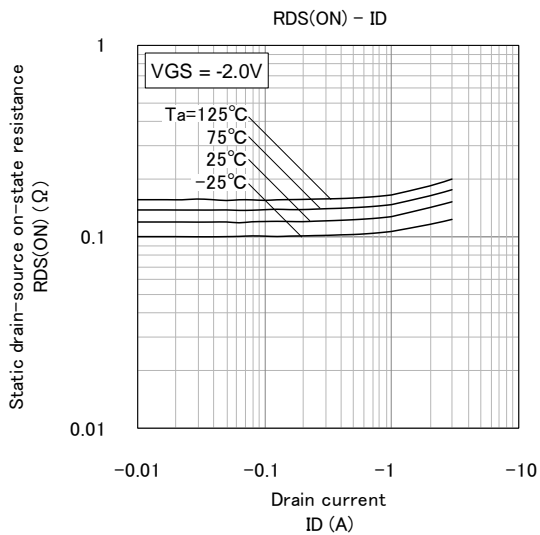
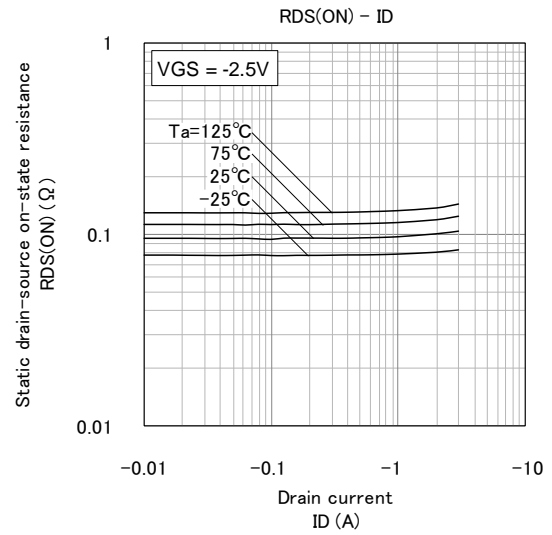
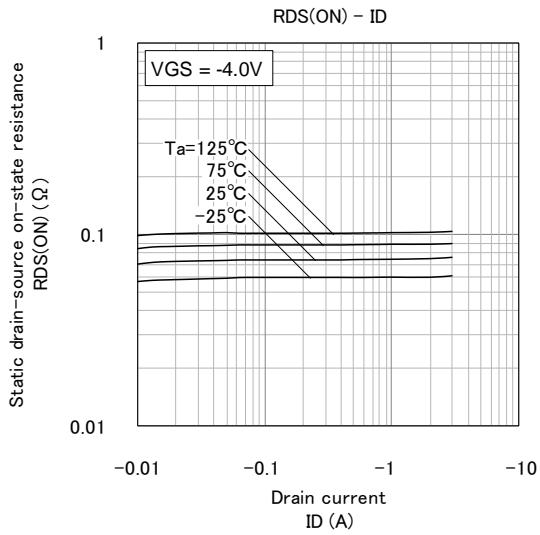
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## TYPICAL CHARACTERISTICS



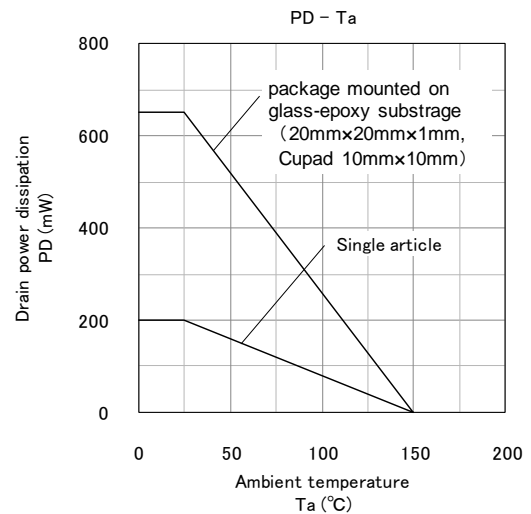
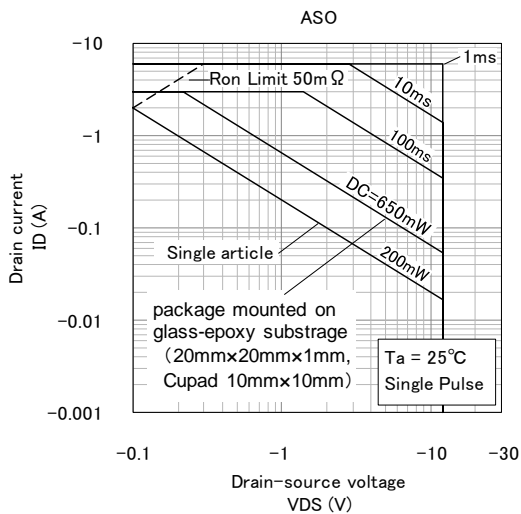
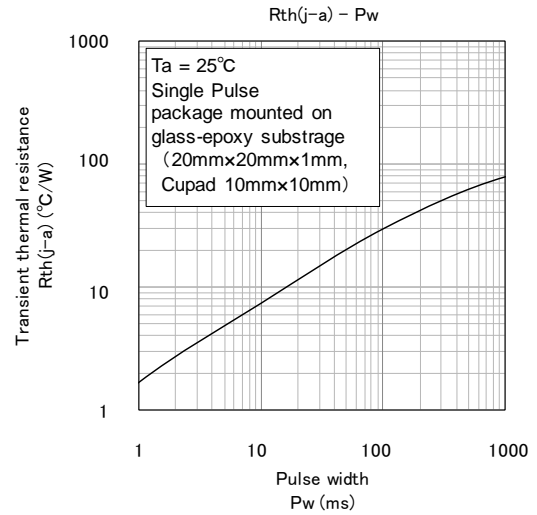
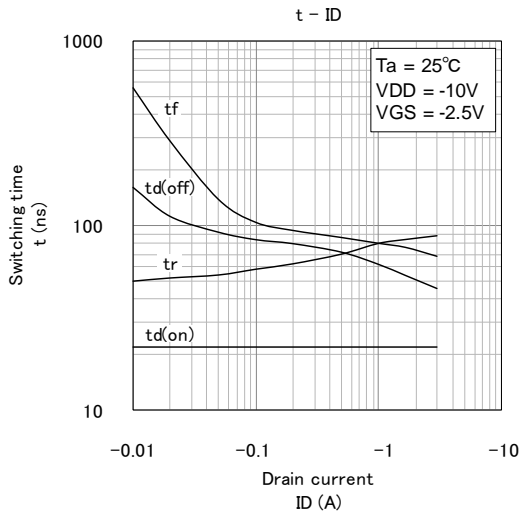
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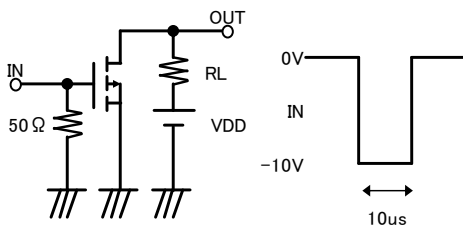


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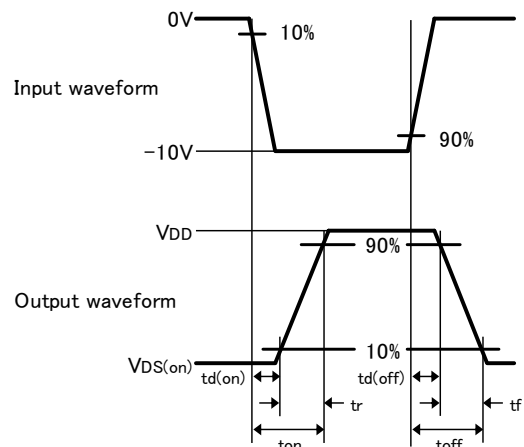
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Switching time test condition



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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