

INJ0312AC1-T150

High Speed Switching
Silicon P-channel MOSFET

AEC-Q101 COMPLIANCE

DESCRIPTION

INJ0312AC1 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.
- High drain current $I_D = -1.1A$
- Drive voltage $-4.0V$
- Low on Resistance.
 $R_{DS(on)} = 400m\Omega$ (@ $V_{GS} = -4.5V$) TYP.
 $R_{DS(on)} = 350m\Omega$ (@ $V_{GS} = -10V$) TYP.
- High speed switching.
- Small package for easy mounting.

APPLICATION

Switching

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

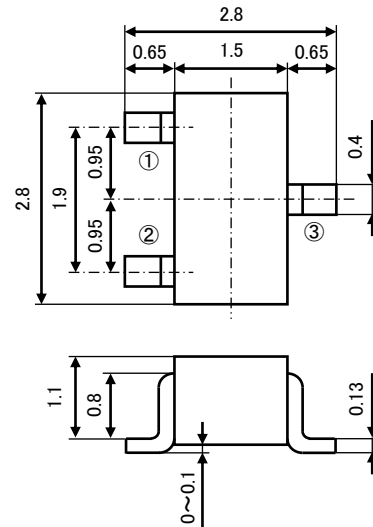
Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	-50	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Drain Current(DC)	-1.1	A
I_{DP}	Drain current(Pulse) ※1	-4.0	A
P_D	Total Power Dissipation ※2	500	mW
T_{ch}	Channel Temperature	+150	$^\circ C$
T_{stg}	Storage temperature	-55~+150	$^\circ C$

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

※2: Package mounted on 45mm × 38mm × 1mm glass-epoxy substrate.

OUTLINE DRAWING

UNIT:mm



JEITA: SC-59

JEDEC: Similar to TO-236

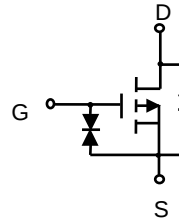
TERMINAL CONNECTER

①: GATE

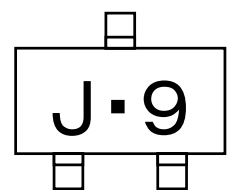
②: SOURCE

③: DRAIN

EQUIVALENT CIRCUIT



MARKING



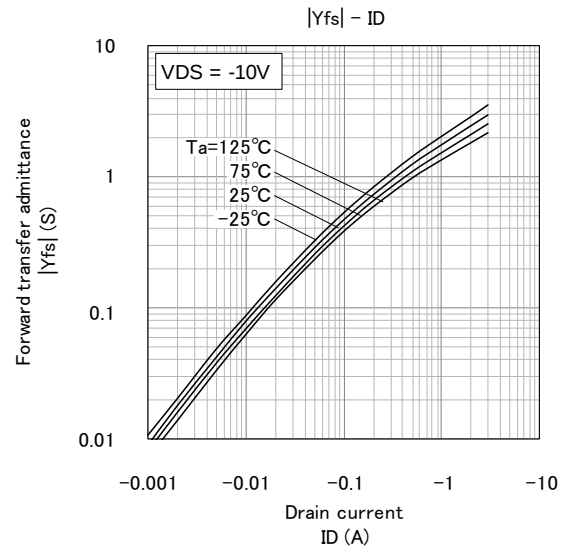
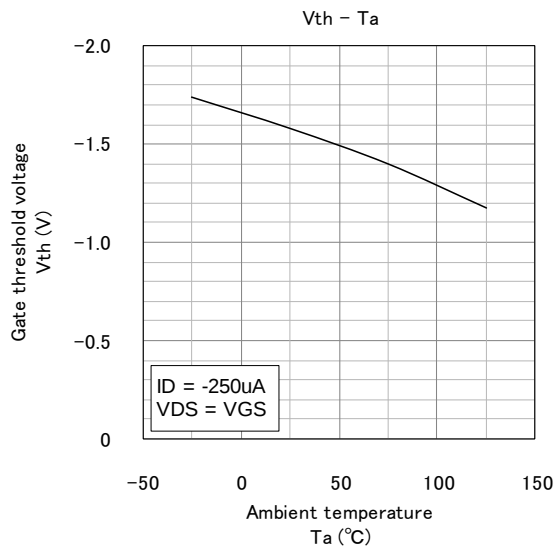
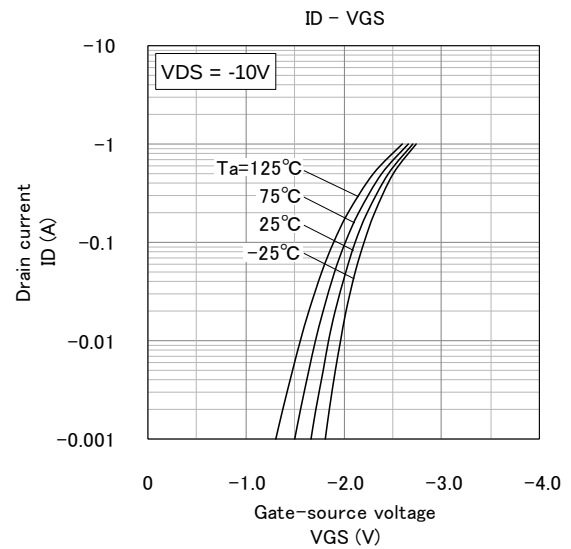
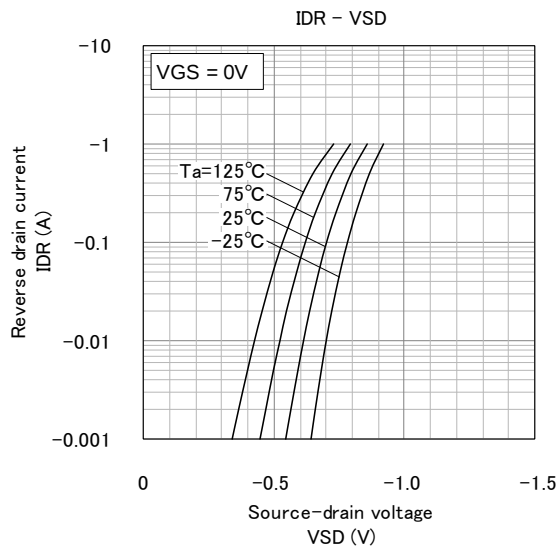
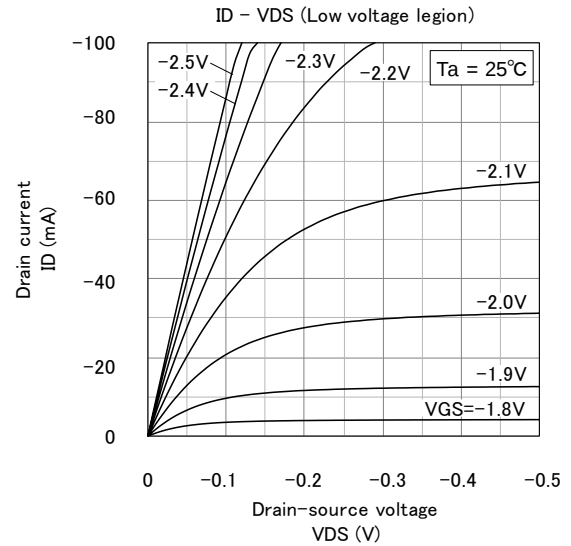
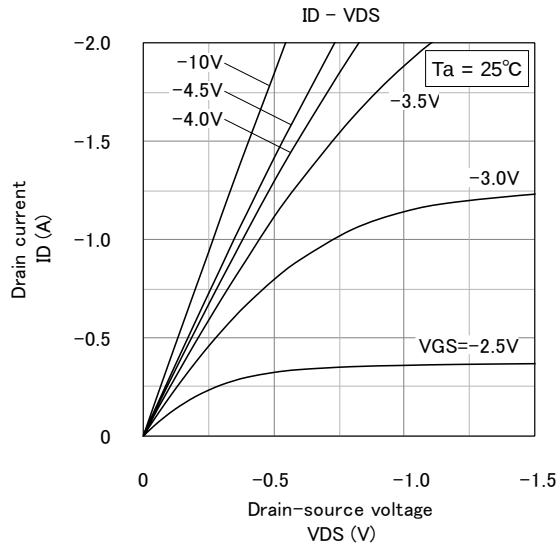
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

Parameter	Symbol	Test Condition	Limit			Unit
			MIN	TYP	MAX	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -100\mu A$, $V_{GS} = 0V$	-50	-	-	V
Gate-Source Leak current	I_{GSS}	$V_{GS} = \pm 20V$, $V_{DS} = 0V$	-	-	± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -50V$, $V_{GS} = 0V$	-	-	-1.0	μA
Gate Threshold Voltage	V_{th}	$I_D = -250\mu A$, $V_{DS} = V_{GS}$	-1.0	-	-2.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = -10V$, $I_D = -1A$	-	1.8	-	S
Static Drain-Source On-State Resistance	$R_{DS(on)}$	$I_D = -1A$, $V_{GS} = -4.5V$	-	400	-	$m\Omega$
		$I_D = -1A$, $V_{GS} = -10V$	-	350	-	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS} = -10V$, $V_{GS} = 0V$, $f = 1MHz$	-	165	-	pF
Output Capacitance	C_{oss}		-	35	-	pF
Switching Time	t_{on}	$V_{DD} = -15V$, $I_D = -1A$	-	80	-	ns
	t_{off}	$V_{GS} = 0 \sim -10V$	-	490	-	ns

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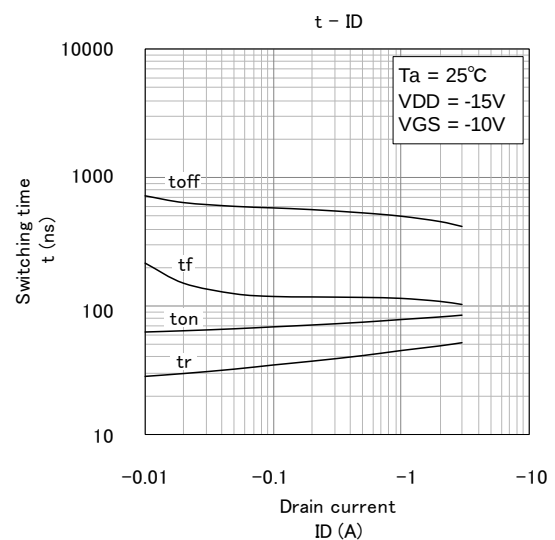
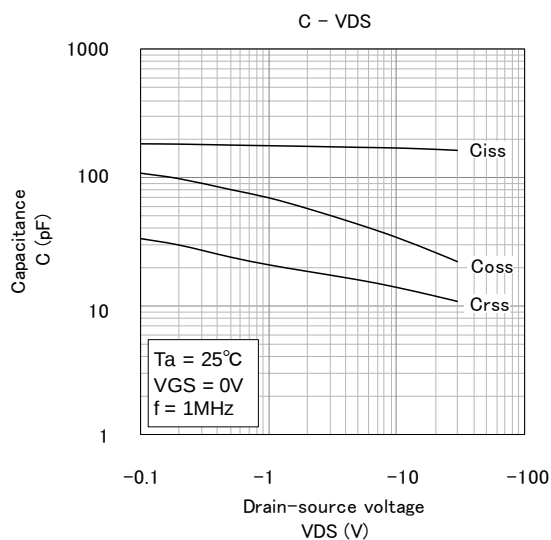
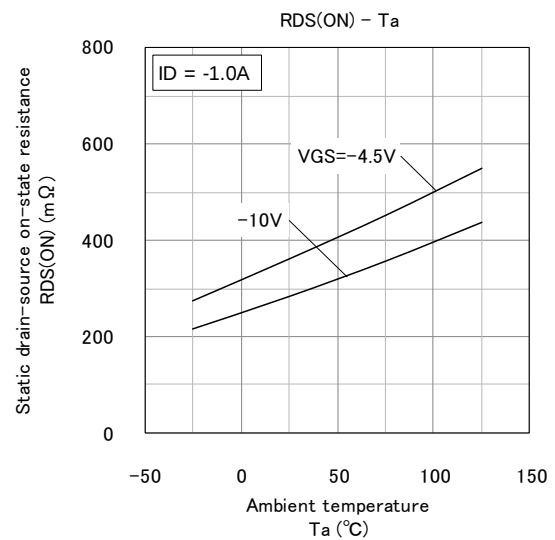
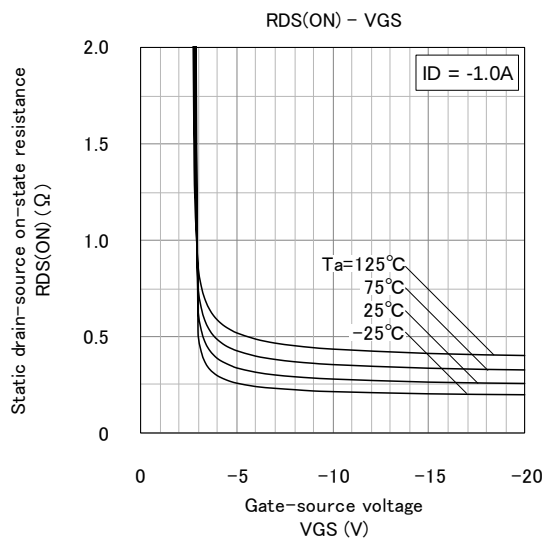
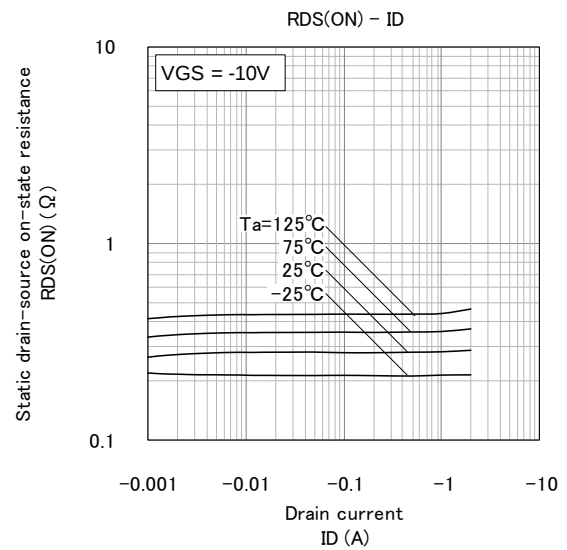
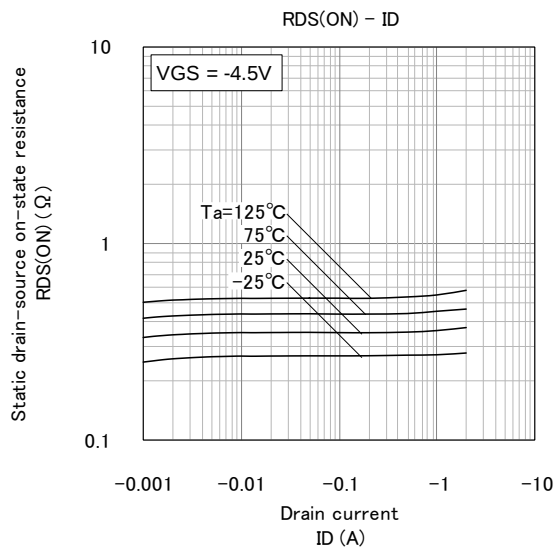
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TYPICAL CHARACTERISTICS



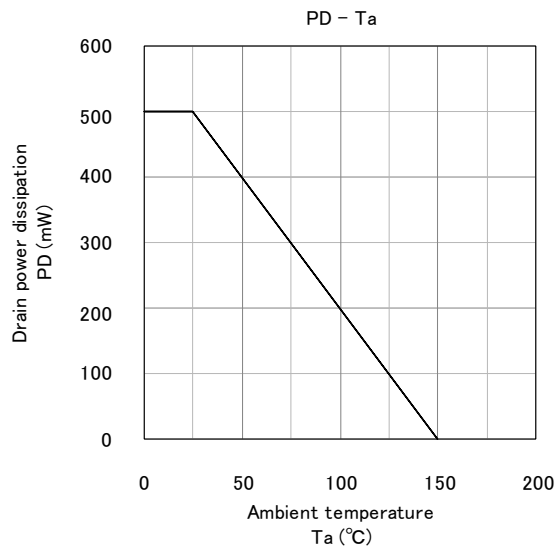
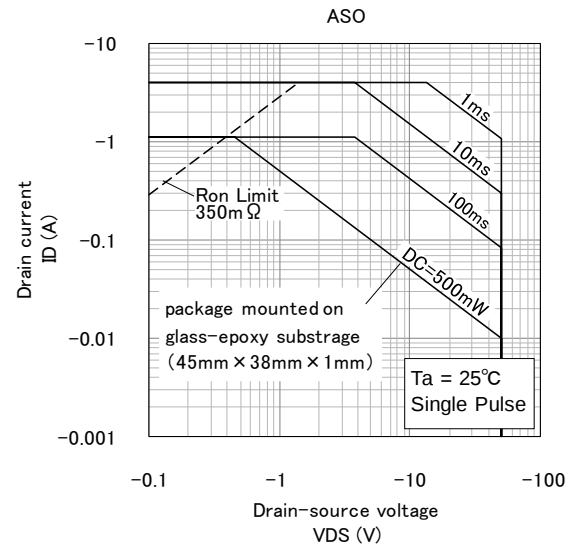
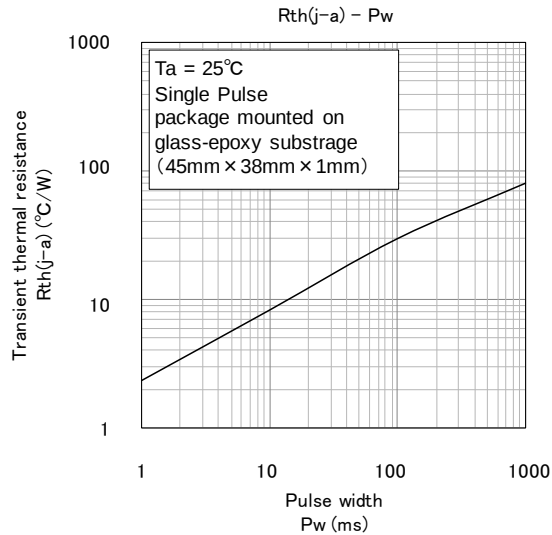
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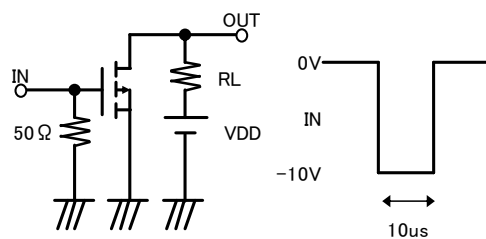


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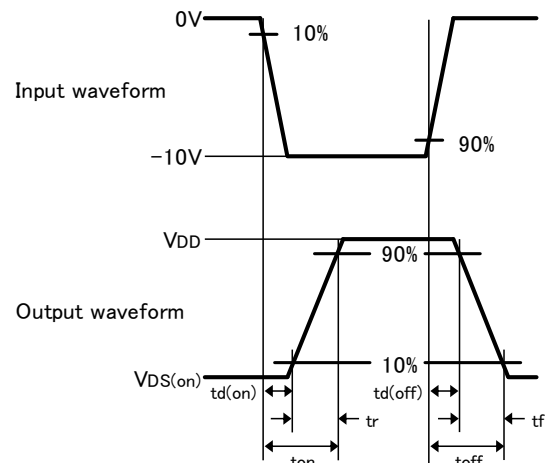
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Switching time test condition



Duty $\leq 1\%$
Input: $t_r, t_f < 10\text{ns}$
 $V_{DD} = -15\text{V}$
Common source
 $T_a = 25^{\circ}\text{C}$



Keep safety first in your circuit designs!

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