

# INJ0203BC1

Silicon P-channel MOSFET

## DESCRIPTION

INJ0203BC1 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  $-2.5\text{V}$
- Low on Resistance.  $R_{DS(on)}=100\text{m}\Omega$  (TYP).
- Small package for easy mounting.

## APPLICATION

Switching

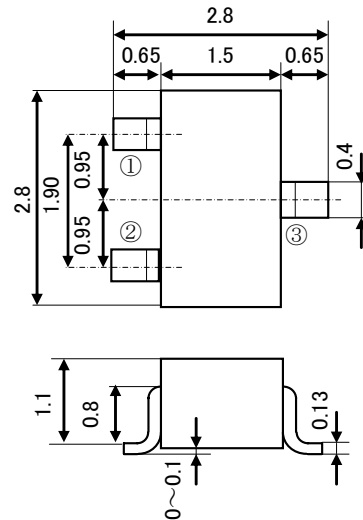
## MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Symbol	Parameter	Rating	Unit
$V_{DSS}$	Drain-Source Voltage	-20	V
$V_{GSS}$	Gate-Source Voltage	-10	V
$I_D$	Drain Current(DC)	-2	A
$I_{DP}$	Drain current(Pulse) ※1	-4	A
PD	Total Power Dissipation	200	mW
$T_{ch}$	Channel Temperature	+150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~+150	$^\circ\text{C}$

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

## OUTLINE DRAWING

Unit: mm



JEITA: SC-59

JEDEC: Similar to TO-236

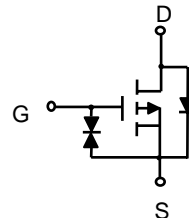
TERMINAL CONNECTER

①: GATE

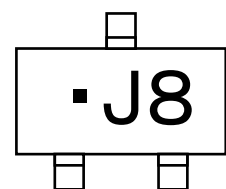
②: SOURCE

③: DRAIN

## EQUIVALENT CIRCUIT



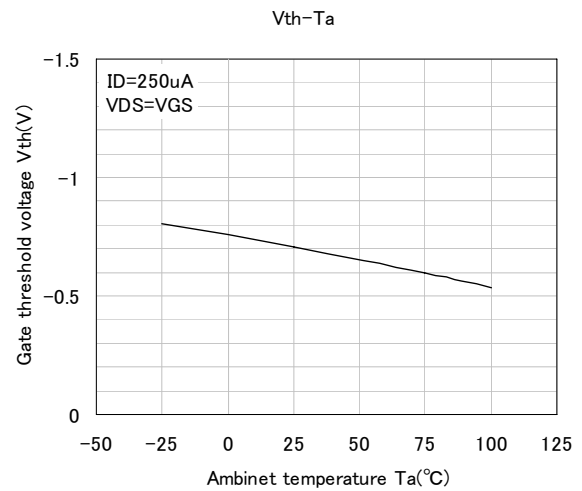
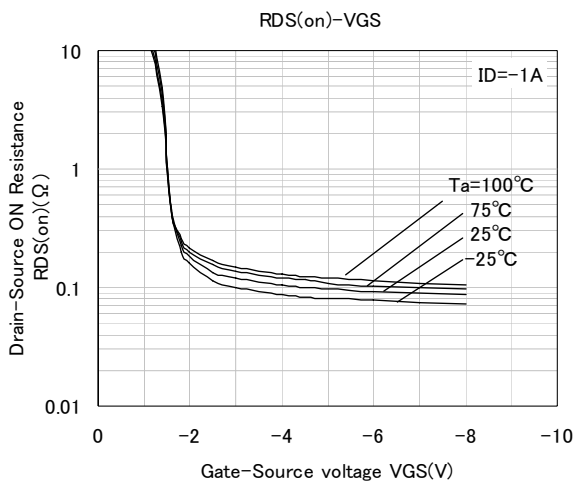
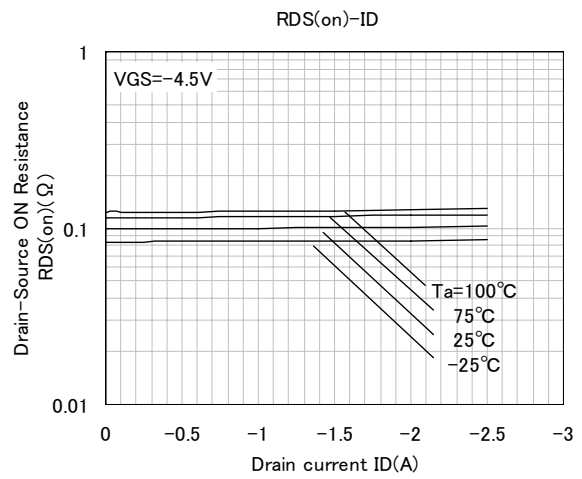
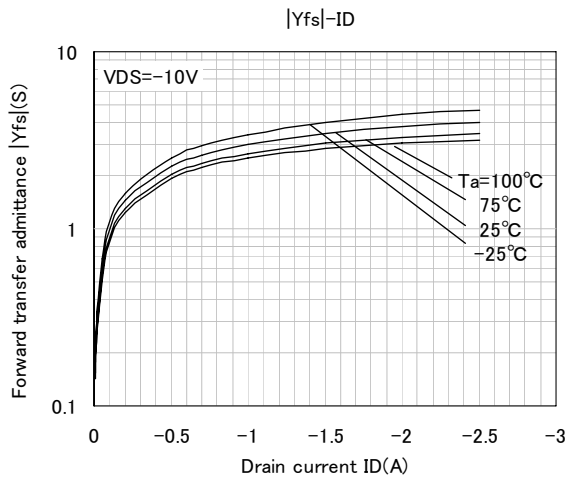
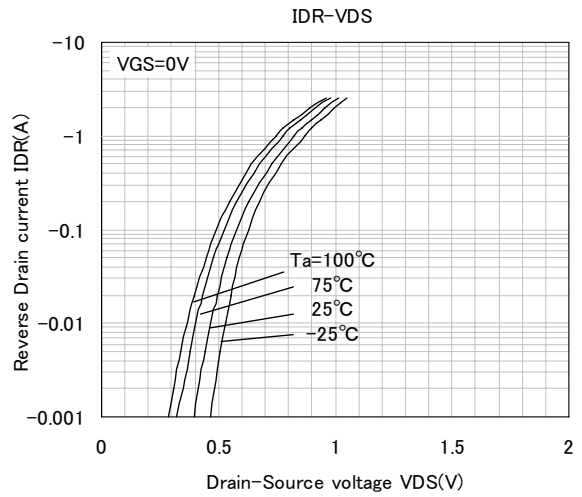
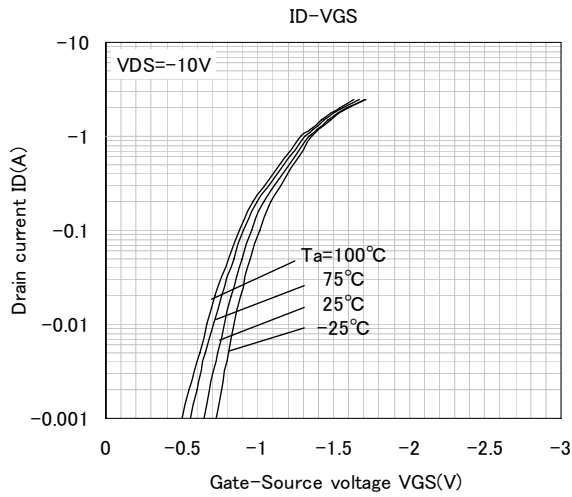
## MARKING



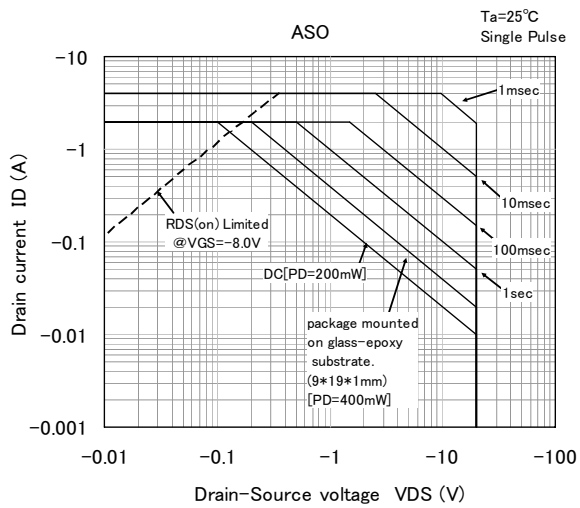
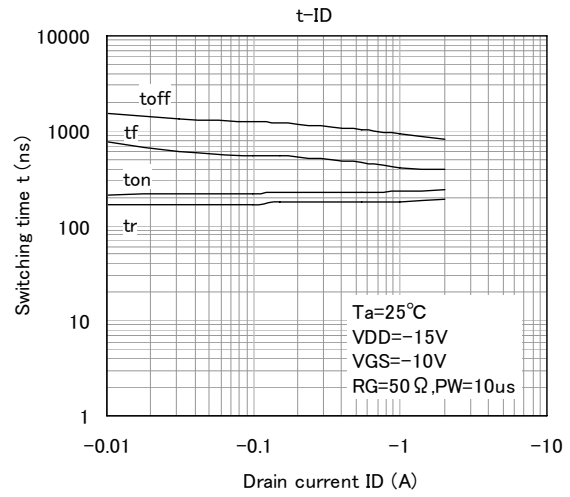
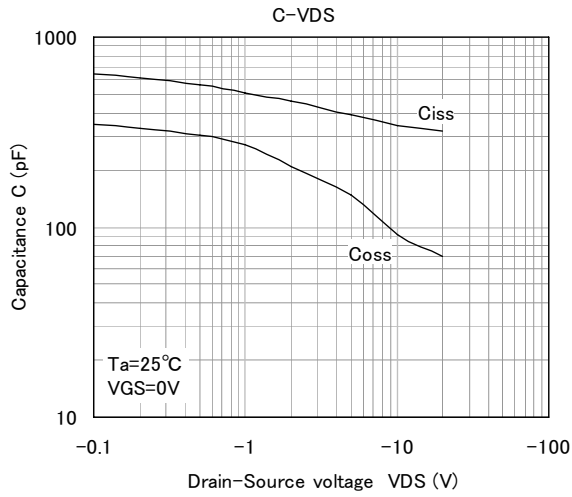
## ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

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	$I_{GSS}$	$V_{GS}=\pm 10\text{V}$ , $V_{DS}=0\text{V}$	-	-	$\pm 10$	$\mu\text{A}$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-20\text{V}$ , $V_{GS}=0\text{V}$	-	-	-10	$\mu\text{A}$
Gate Threshold Voltage	$V_{th}$	$I_D=-250 \mu\text{A}$ , $V_{DS}=V_{GS}$	-0.4	-	-1.2	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=-10\text{V}$ , $I_D=-1\text{A}$	-	3.0	-	S
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$I_D=-1\text{A}$ , $V_{GS}=-4.5\text{V}$	-	100	-	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=-10\text{V}$ , $V_{GS}=0\text{V}$ , $f=1\text{MHz}$	-	340	-	pF
Output Capacitance	$C_{oss}$		-	90	-	pF
Switching Time	$t_{on}$	$V_{DD}=-15\text{V}$ , $I_D=-1\text{A}$	-	230	-	ns
	$t_{off}$	$V_{GS}=0 \sim -10\text{V}$	-	940	-	ns

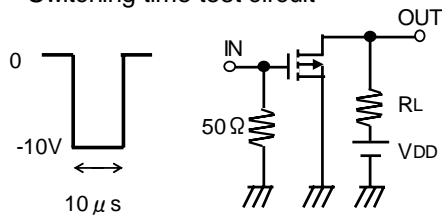
## TYPICAL CHARACTERISTICS



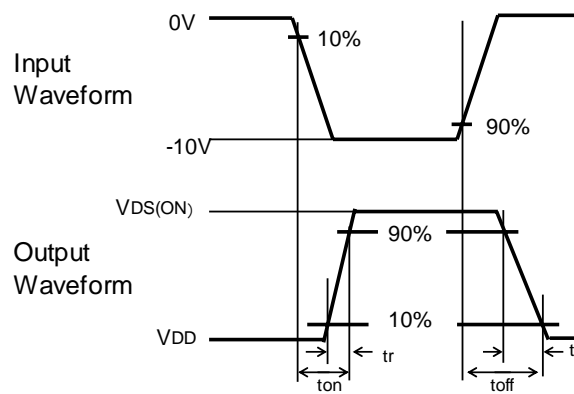
## TYPICAL CHARACTERISTICS



### Switching time test circuit



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





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