

INJ0512BC1

High Speed Switching
Silicon P-channel MOSFET

DESCRIPTION

INJ0512BC1 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 $I_D = -4.5A$
- Drive voltage $-4.0V$
- Low on Resistance. $R_{DS(ON)} = 34m\Omega$ typ(@ $V_{GS} = -10V$)
 $R_{DS(ON)} = 49m\Omega$ typ(@ $V_{GS} = -4.5V$)
- High speed switching.

APPLICATION

High speed switching, Analog switching

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current(DC) (※1)	I_D	-4.5	A
Drain Current(Pulse) (※2)	I_{DP}	-12	A
Total Power Dissipation (※1)	P_D	0.9	W
Junction Temperature	T_j	+150	$^\circ C$
Storage Temperature	T_{stg}	-55~+150	$^\circ C$

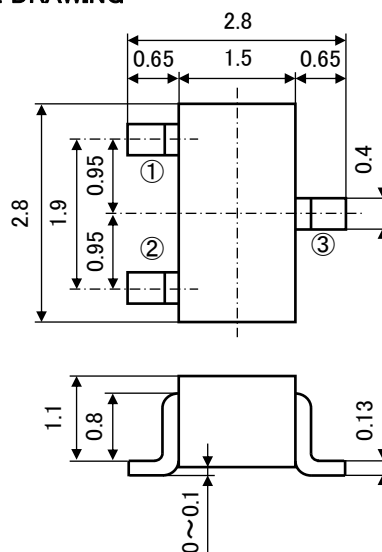
※1 package mounted on glass-epoxy substrate.

(39mm × 39mm × 1.6mm, Cu pad 1500mm²)

※2 $P_w \leq 10ms$, Duty cycle $\leq 1\%$

OUTLINE DRAWING

Unit: mm



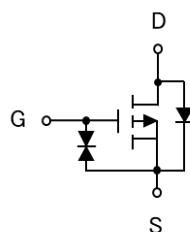
TERMINAL CONNECTOR

- ①: GATE
- ②: SOURCE
- ③: DRAIN

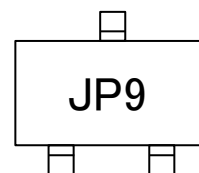
JEITA: SC-59

JEDEC: Similar to TO-236

EQUIVALENT CIRCUIT



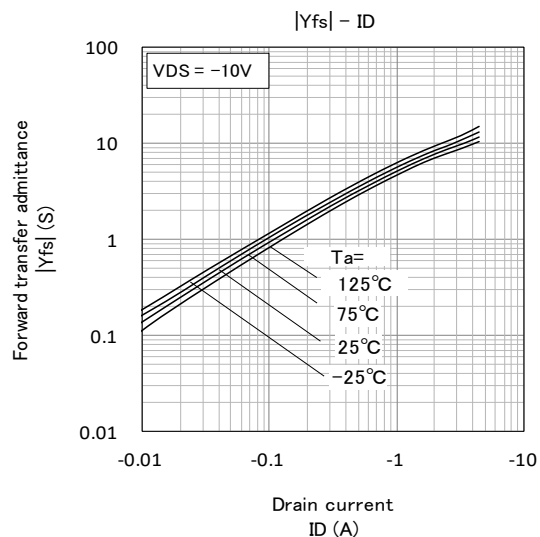
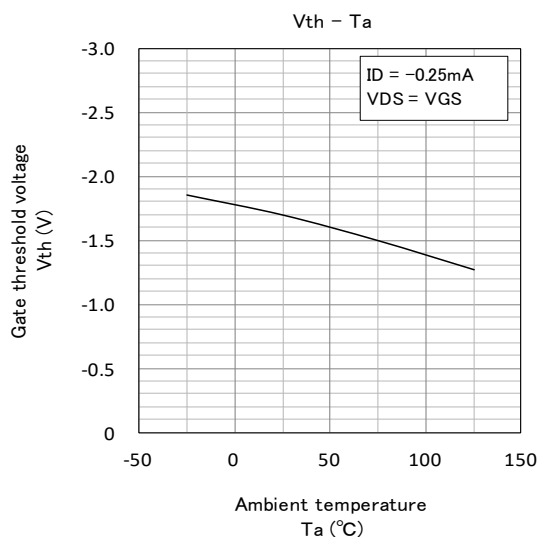
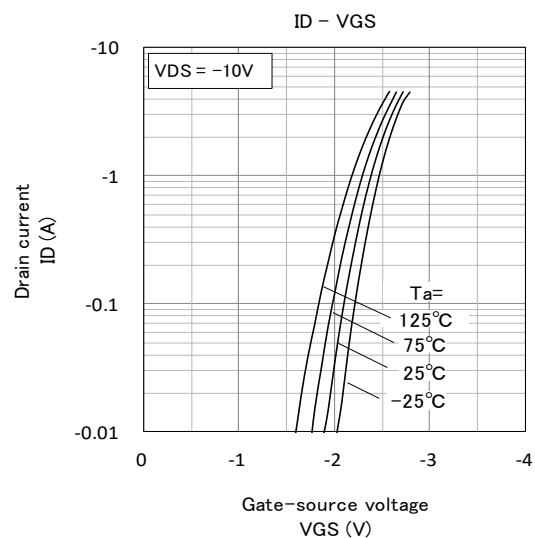
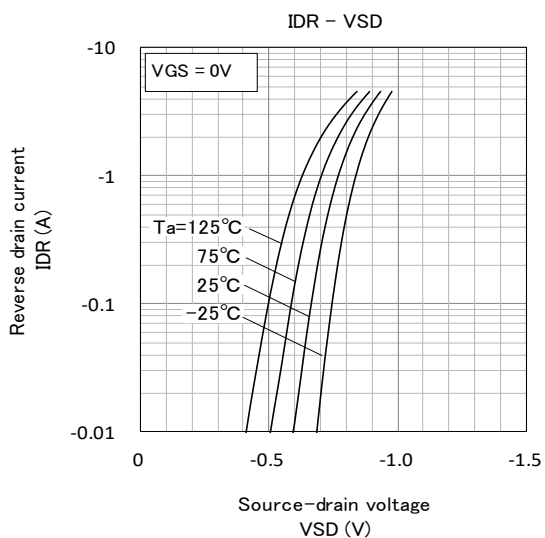
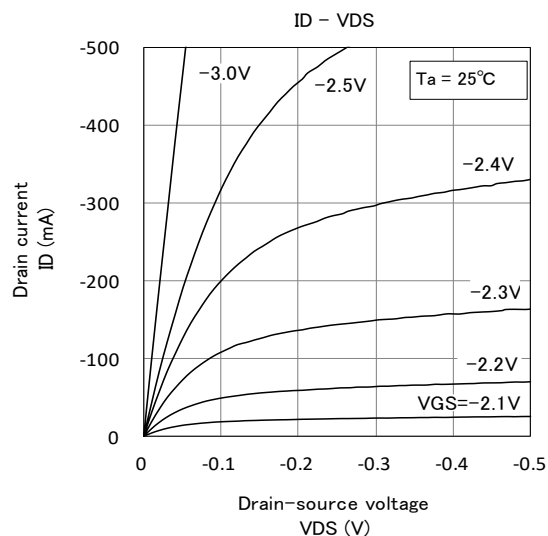
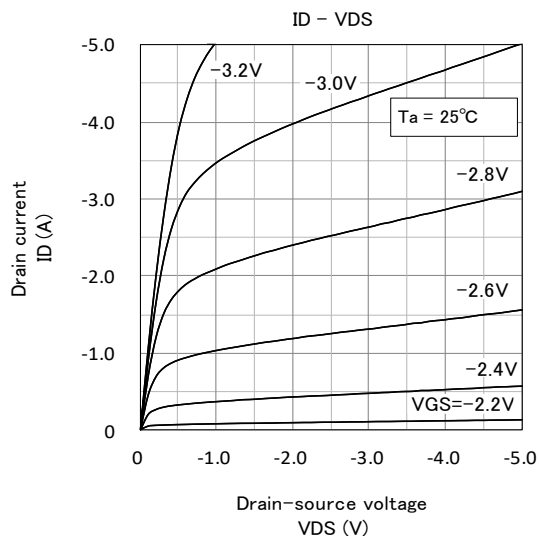
MARKING



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

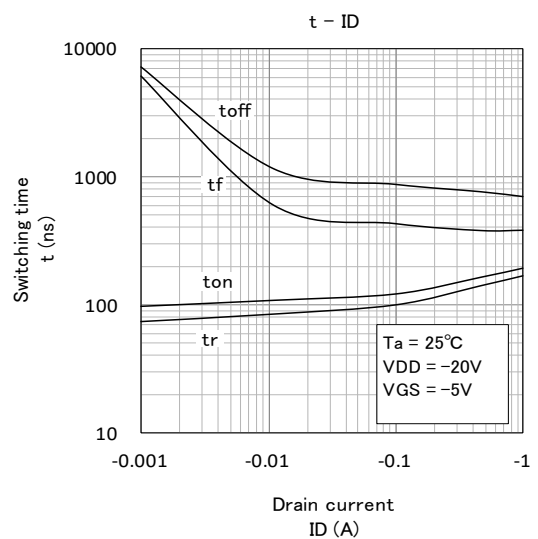
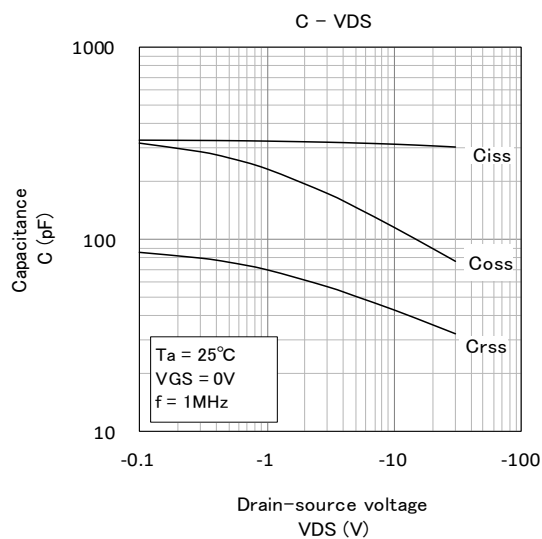
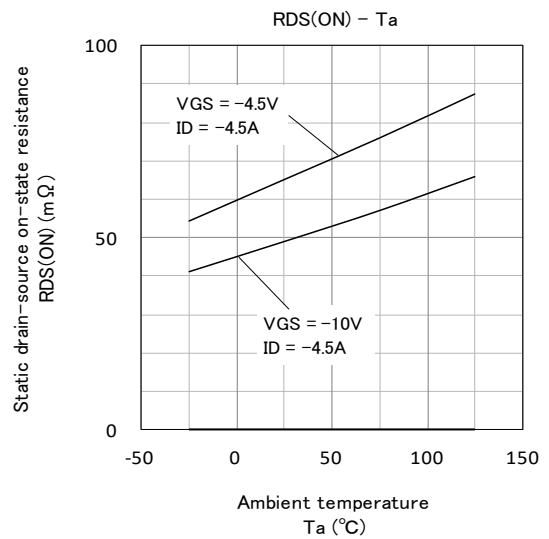
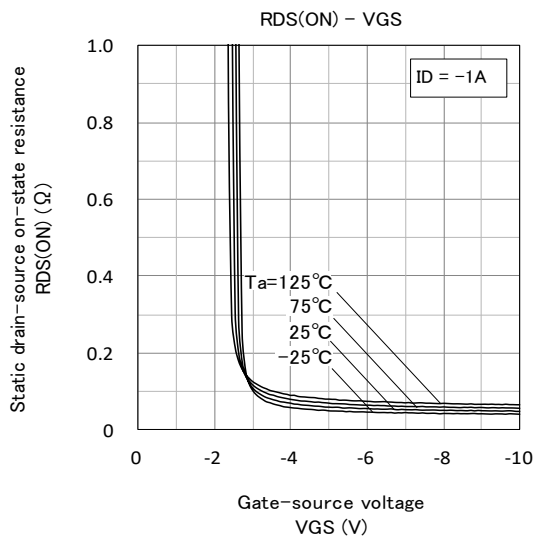
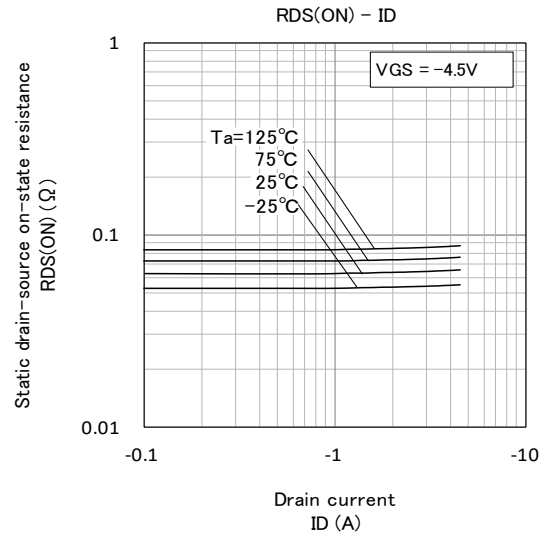
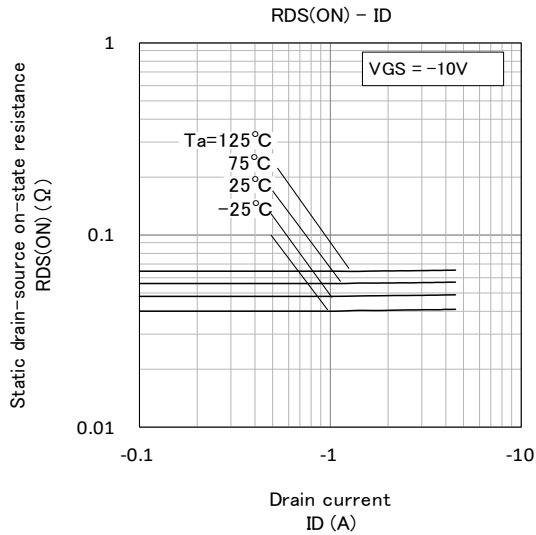
Parameter	Symbol	Test Condition	Limit			Unit
			MIN	TYP	MAX	
Drain-Source Breakdown Voltage	$V_{(BR)DS}$	$I_D = -250\mu A$, $V_{GS} = 0V$	-30	-	-	V
Gate-Source Leak Current	I_{GSS}	$V_{GS} = \pm 20V$, $V_{DS} = 0V$	-	-	± 20	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V$, $V_{GS} = 0V$	-	-	-1.0	μA
Gate Threshold Voltage	V_{th}	$I_D = -250\mu A$, $V_{DS} = V_{GS}$	-1.2	-	-2.5	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$I_D = -4.5A$, $V_{GS} = -4.5V$	-	49	66	$m\Omega$
		$I_D = -4.5A$, $V_{GS} = -10V$	-	34	44	
Input Capacitance	C_{iss}	$V_{DS} = -10V$, $V_{GS} = 0V$, $f = 1MHz$	-	315	-	pF
Output Capacitance	C_{oss}		-	115	-	
Reverse Transfer Capacitance	C_{rss}		-	45	-	
Switching Time	t_{on}	$V_{DD} = -20V$, $I_D = -200mA$, $V_{GS} = -5V$	-	130	-	ns
	t_{off}		-	850	-	

TYPICAL CHARACTERISTICS



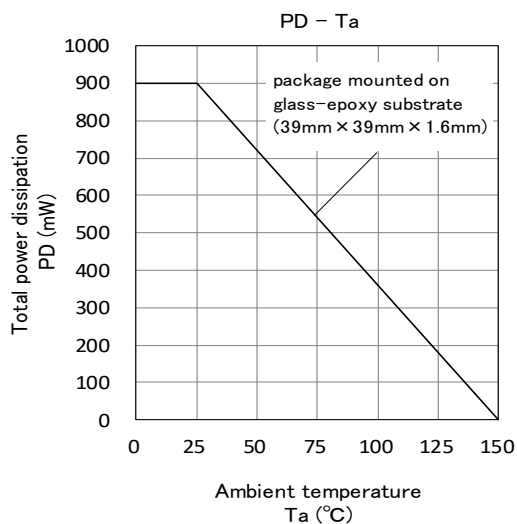
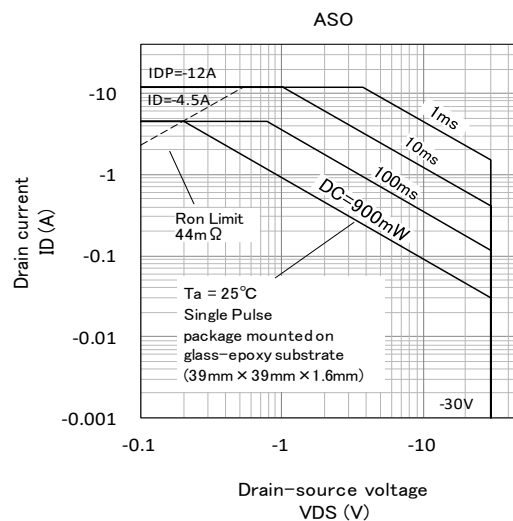
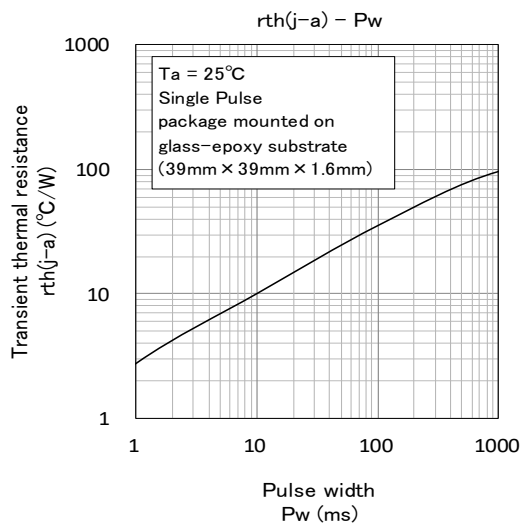
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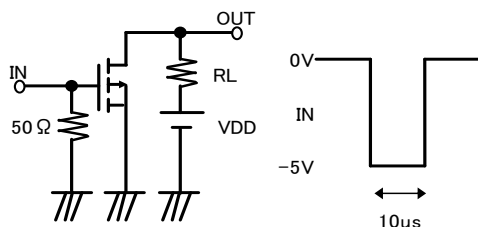


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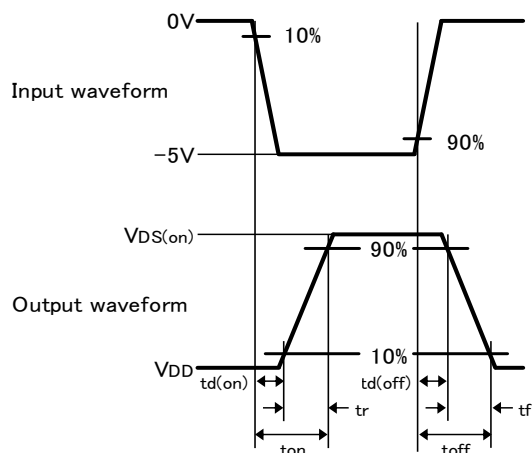
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Switching time test condition



$\text{Duty} \leq 1\%$
 $\text{入力} : t_r, t_f < 10\text{ns}$
 $V_{DD} = -20\text{V}$
 Common source
 $T_a = 25^\circ\text{C}$



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