PRELIMINARY

Notice : This is not a final specification
Some parametric are subject to change.

INJ0710AK1

High Speed Switching
Silicon P-channel MOSFET

DESCRIPTION

INJ0710AK1 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

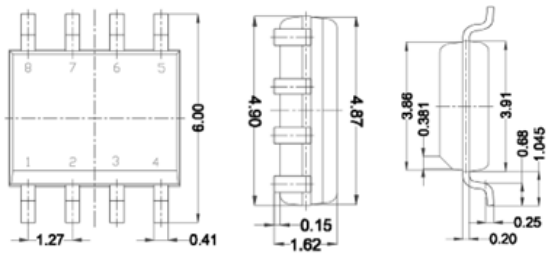
・Low on-resistance RDS(ON) = 27 mΩ (typ @VGS = −10 V)
・High drain current ID=−7A
・Drive voltage −4.0V
・High speed switching.

APPLICATION

Switching Regulator, DC/DC Converter

OUTLINE DRAWING

Unit : mm



TERNIMAL CONNECTOR

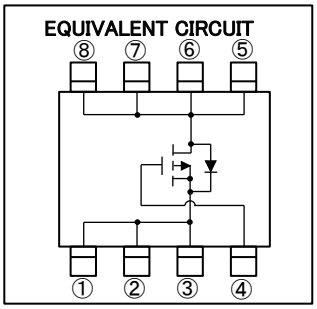
①:SOURCE
②:SOURCE
③:SOURCE
④:GATE
⑤:DRAIN
⑥:DRAIN
⑦:DRAIN
⑧:DRAIN

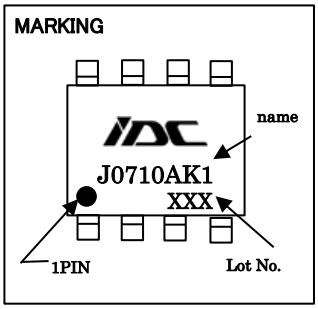
JEITA: SOP8

MAXIMUM RATINGS

Paramete	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-60	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current(DC) (※1)	I_D	-7	A
Drain Current(Pulse) (※2)	I_{DP}	-20	A
Total Power Dissipation (※1)	P_D	2.5	W
Channel Temperature	T_{ch}	+150	℃
Storage Temperature	T_{stg}	−55～+150	℃

※1 package mounted on glass-epoxy substrate.
39mm × 39mm × 1.6mm
Copper foil with an area of 1460 mm² and a thickness of 35 μm
※2 : Pw≦10ms, Duty cycle≦1%



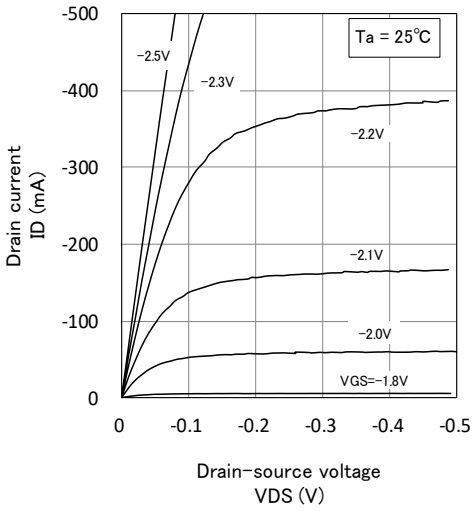


ELECTRICAL CHARACTERISTICS (Ta=25℃)

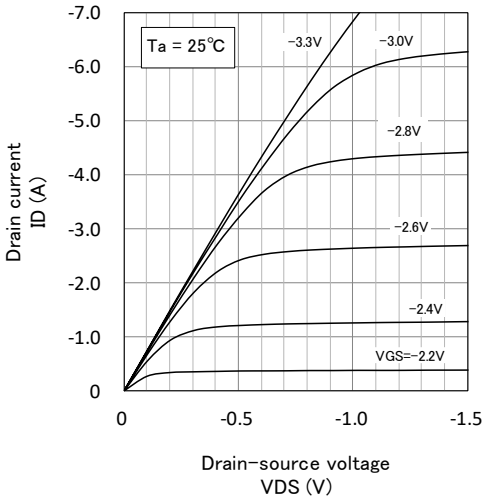
Parameter	Symbol	Test Condition	Limit			Unit
			MIN	TYP	MAX	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−250μA, V_{GS}=0V	−60	−	−	V
Gate-Source Leak Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	−	−	±0.1	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=−60V, V_{GS}=0V	−	−	−1.0	μA
Gate Threshold Voltage	V_{th}	I_D=−250μA, V_{DS}=V_{GS}	−1.0	−	−3.0	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	I_D=−7A, V_{GS}=−10V	−	27	35	mΩ
		I_D=−5A, V_{GS}=−4.5V	−	31	40	
Input Capacitance	C_{iss}	V_{DS}=−10V, V_{GS}=0V, f=1MHz	−	5700	−	pF
Output Capacitance	C_{oss}		−	340	−	
Feedback Capacitance	C_{rss}		−	240	−	
Switching Time	t_{on}	V_{DS}=−20V, V_{GS}=−5V,	−	110	−	ns
	T_{off}	I_D=−200mA,	−	300	−	

TYPICAL CHARACTERISTICS

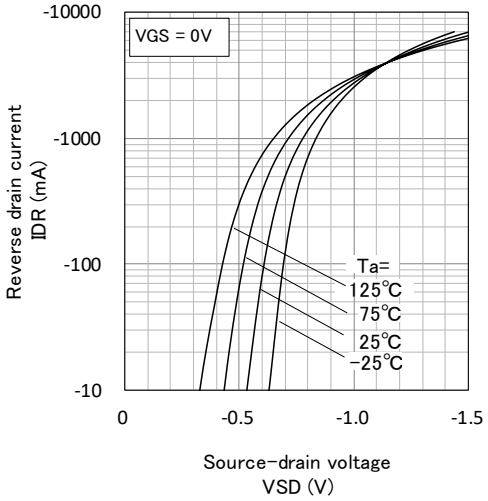
ID – VDS(Low Voltage Area)



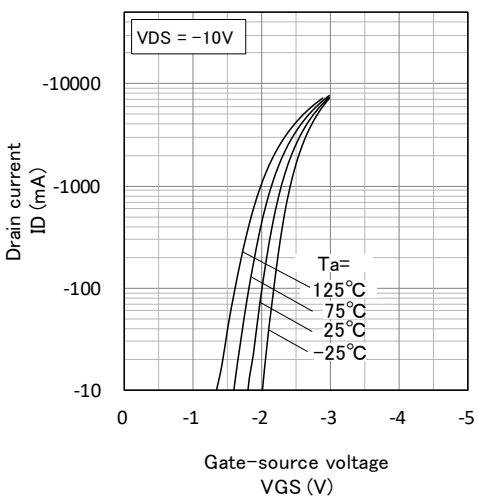
ID – VDS



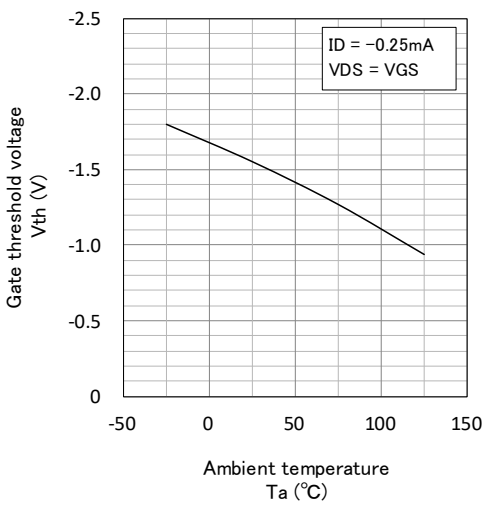
IDR – VSD



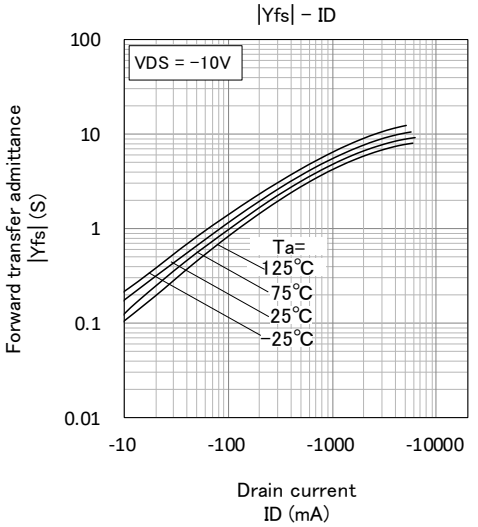
ID – VGS



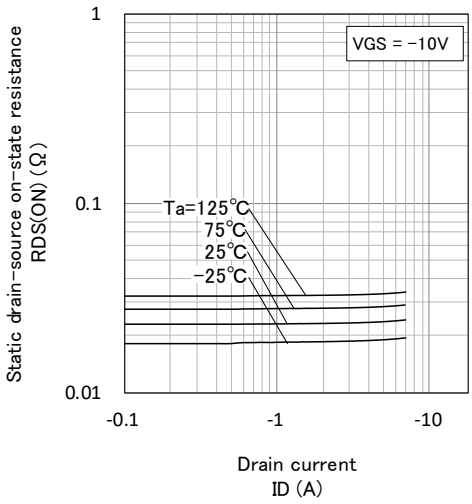
Vth – Ta



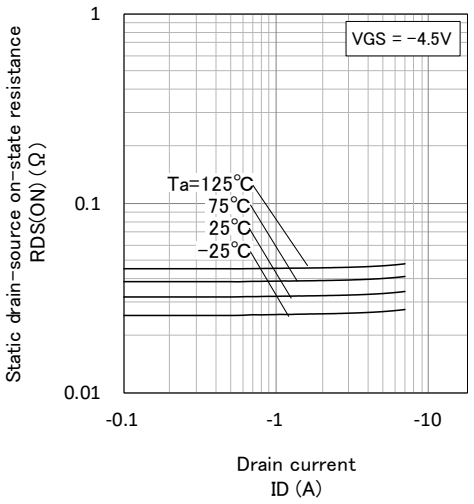
|Yfs| – ID



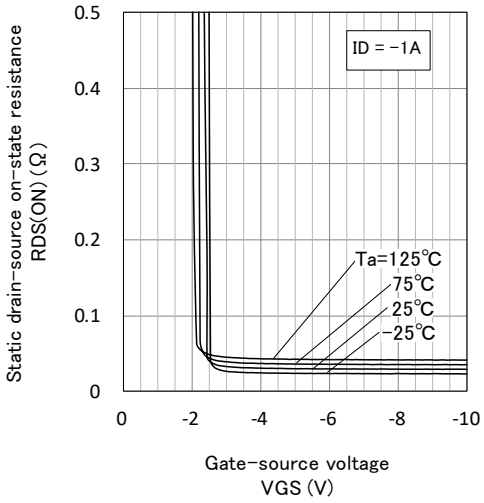
RDS(ON) – ID



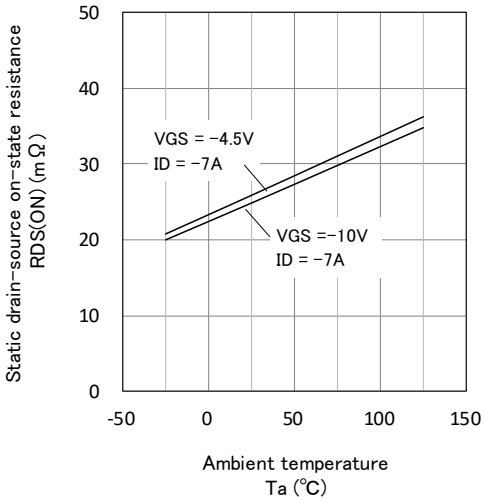
RDS(ON) – ID



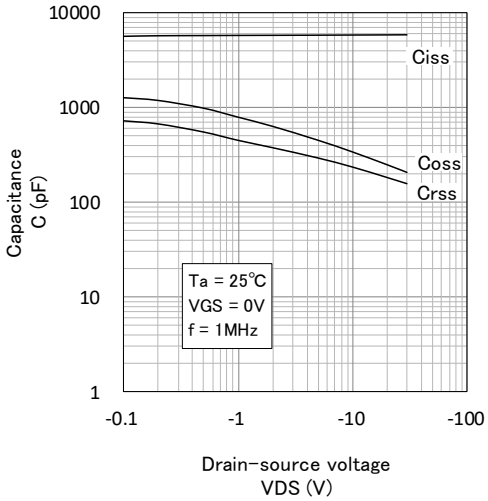
RDS(ON) – VGS



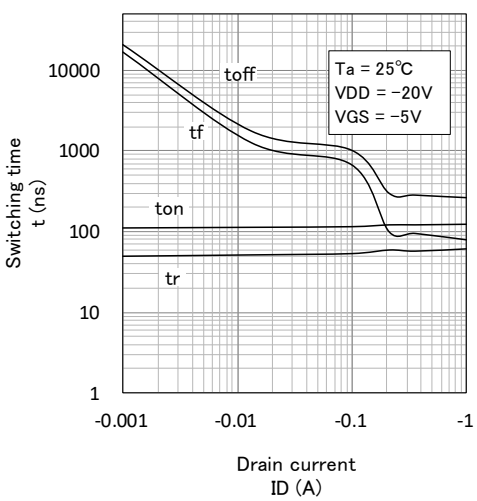
RDS(ON) – Ta



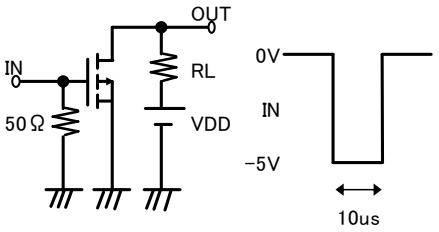
C – VDS



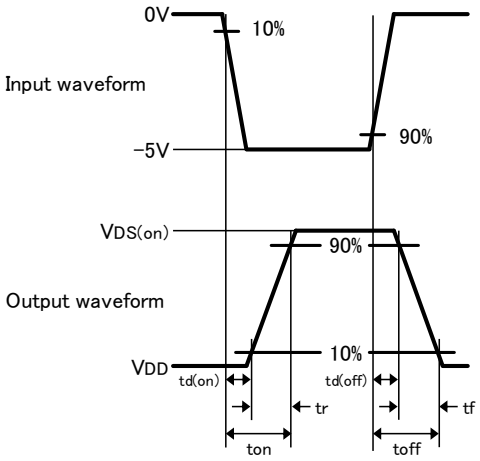
t – ID



Switching time test condition



Duty ≦ 1%
Input : tr, tf < 10ns
VDD = −20V
Common source
Ta = 25℃



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