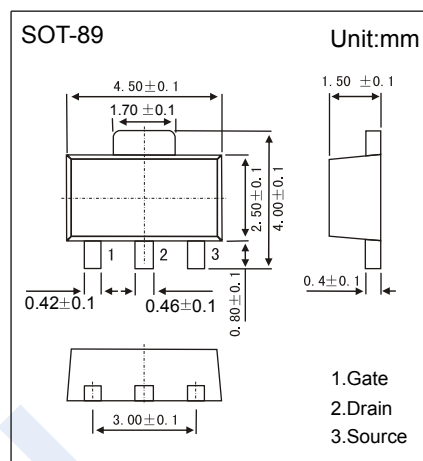
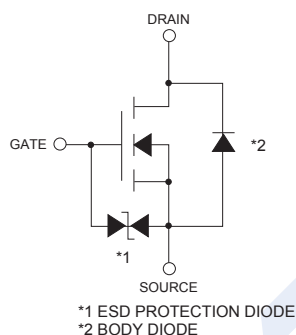


N-Channel MOSFET

RHP020N06 (KHP020N06)

■ Features

- $V_{DS} (V) = 60V$
- $I_D = 2 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 200m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 280m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 340m\Omega$ ($V_{GS} = 4V$)
- High speed switching



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	± 2	A
Pulsed Drain Current	I_{DM}	± 8	
Power Dissipation	P_D	0.5	W
		2	
Thermal Resistance.Junction- to-Ambient	R_{thJA}	250	$^\circ C/W$
		62.5	
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1:When mounted on a 40X40X0.7mm ceramic board

N-Channel MOSFET

RHP020N06 (KHP020N06)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=1\text{ mA}$, $V_{GS}=0\text{V}$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 20\text{V}$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1		2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$, $I_D=2\text{A}$			200	$\text{m}\Omega$
		$V_{GS}=4.5\text{V}$, $I_D=2\text{A}$			280	
		$V_{GS}=4\text{V}$, $I_D=2\text{A}$			340	
Forward Transconductance	g_{FS}	$V_{DS}=10\text{V}$, $I_D=2\text{A}$	2			S
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		140		pF
Output Capacitance	C_{oss}			50		
Reverse Transfer Capacitance	C_{rss}			40		
Total Gate Charge	Q_g	$V_{GS}=10\text{V}$, $V_{DS}=30\text{V}$, $I_D=2\text{A}$		7	14	nC
Gate Source Charge	Q_{gs}			1		
Gate Drain Charge	Q_{gd}			2		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS}=10\text{V}$, $V_{DS}=30\text{V}$, $R_L=30\Omega$, $R_{GEN}=10\Omega$, $I_D=1\text{A}$		7		ns
Turn-On Rise Time	t_r			10		
Turn-Off DelayTime	$t_{d(off)}$			22		
Turn-Off Fall Time	t_f			18		
Maximum Body-Diode Continuous Current	I_S				2	A
Source current Pluse	I_{SP}				8	
Diode Forward Voltage	V_{SD}	$I_S=2\text{A}$, $V_{GS}=0\text{V}$			1.2	V

Note. The static characteristics in Figures 1 to 6 are obtained using <300us pulses, duty cycle 0.5% max.

■ Marking

Marking	LR
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N-Channel MOSFET

RHP020N06 (KHP020N06)

Typical Characteristics

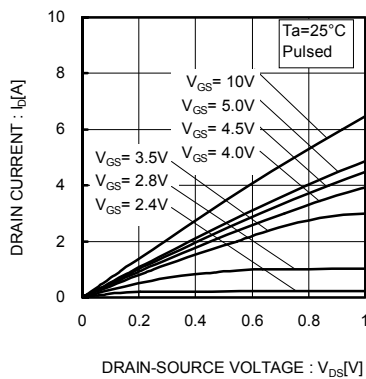


Fig.1 Typical Output Characteristics (I)

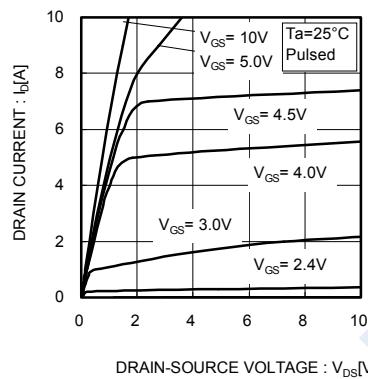


Fig.2 Typical Output Characteristics (II)

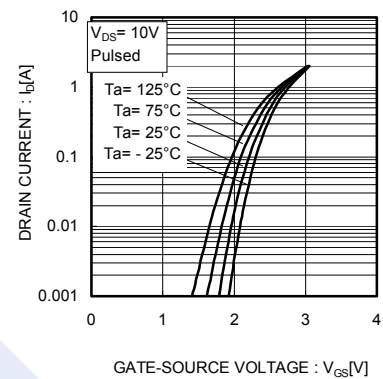


Fig.3 Typical Transfer Characteristics

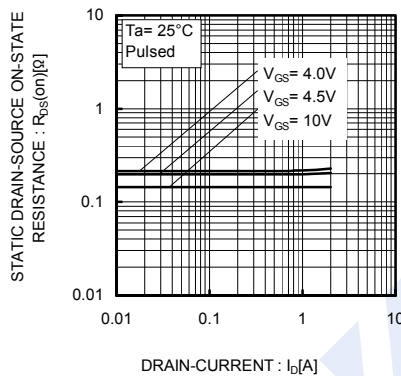


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current (I)

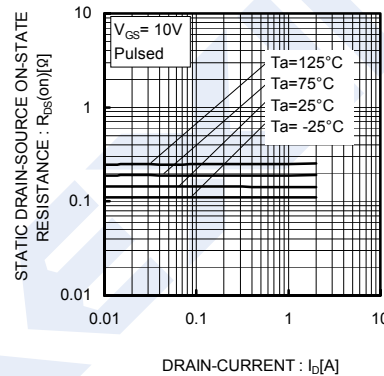


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current (II)

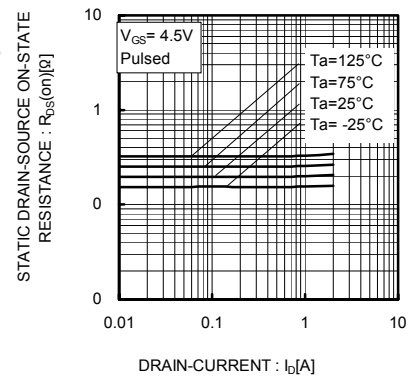


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current (III)

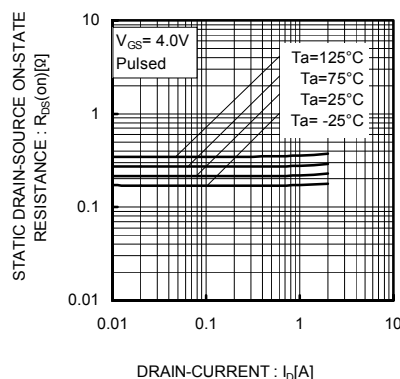


Fig.7 Static Drain-Source On-State Resistance vs. Drain Current (IV)

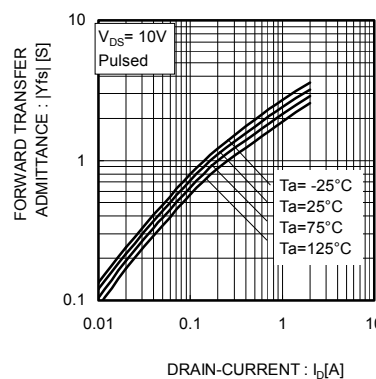


Fig.8 Forward Transfer Admittance vs. Drain Current

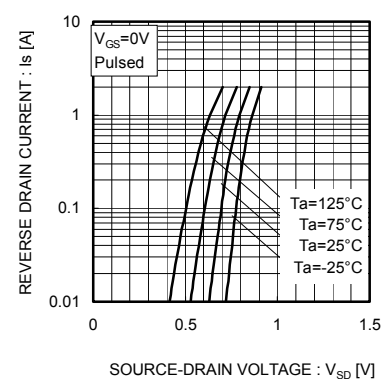


Fig.9 Reverse Drain Current vs. Source-Drain Voltage

N-Channel MOSFET

RHP020N06 (KHP020N06)

Typical Characteristics

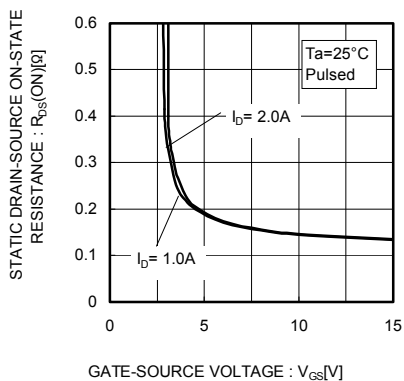


Fig.10 Static Drain-Source On-State Resistance vs. Gate Source Voltage

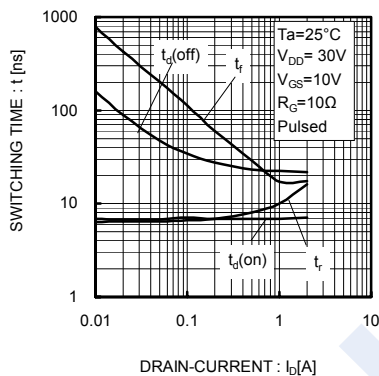


Fig.11 Switching Characteristics

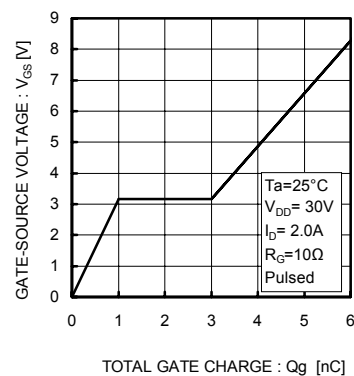


Fig.12 Dynamic Input Characteristics

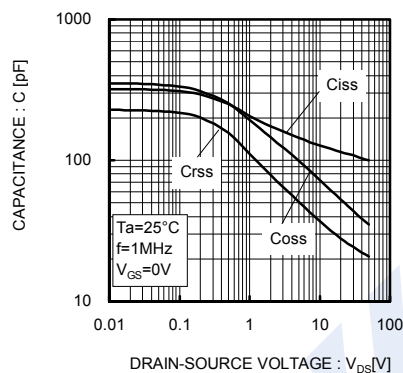


Fig.13 Typical Capacitance vs. Drain-Source Voltage

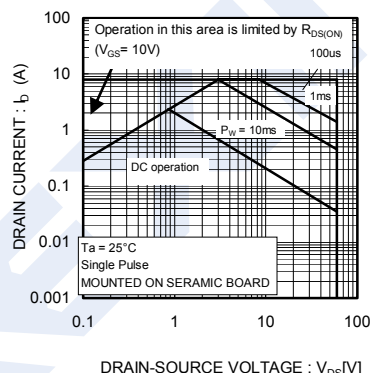


Fig.14 Maximum Safe Operating Area

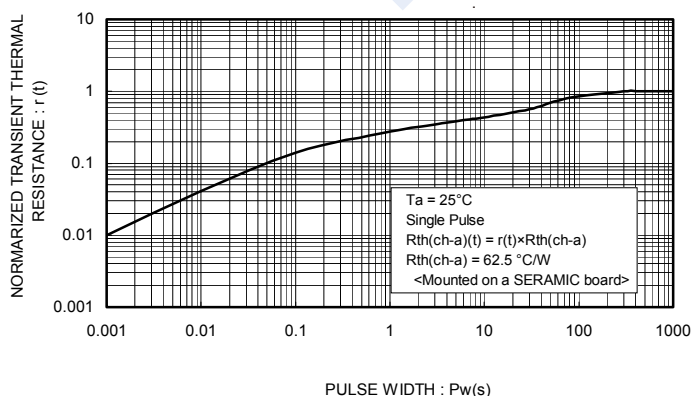


Fig.15 Normalized Transient Thermal Resistance vs. Pulse Width