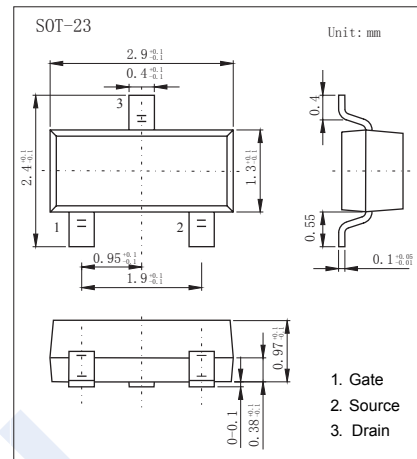
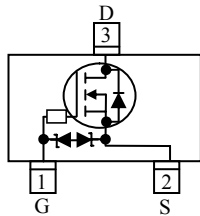


## N-Channel MOSFET 2KK5070

### ■ Features

- $V_{DS} (V) = 20V$
- $I_D = 0.83 A$
- $R_{DS(ON)} < 310m\Omega$  ( $V_{GS} = 4.5V$ )
- $R_{DS(ON)} < 360m\Omega$  ( $V_{GS} = 2.5V$ )
- $R_{DS(ON)} < 460m\Omega$  ( $V_{GS} = 1.8V$ )



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

Parameter		Symbol	10 S	Steady State	Unit
Drain-Source Voltage		$V_{DS}$	20		V
Gate-Source Voltage		$V_{GS}$	$\pm 6$		
Continuous Drain Current	(Note.1)	$I_D$	0.9	0.83	A
			$T_a=25^\circ C$	0.72	
Power Dissipation	(Note.1)	$P_D$	0.38	0.32	W
			$T_a=70^\circ C$	0.24	
Continuous Drain Current	(Note.2)	$I_D$	0.79	0.71	A
			$T_a=70^\circ C$	0.63	
Power Dissipation	(Note.2)	$P_D$	0.29	0.24	W
			$T_a=70^\circ C$	0.19	
Pulsed Drain Current		$I_{DM}$	1.4		A
Thermal Resistance.Junction- to-Ambient		$R_{thJA}$	325	385	$^\circ C/W$
			420	520	
Thermal Resistance.Junction- to-Case		$R_{thJC}$	-	300	$^\circ C/W$
Junction Temperature		$T_J$	150		$^\circ C$
Storage Temperature Range		$T_{stg}$	-55 to 150		

Note.1:Surface mounted on FR4 Board using 1 square inch pad size, 1oz copper

Note.2:Surface mounted on FR4 board using minimum pad size, 1oz copper

Note.3:Repetitive rating, pulse width limited by junction temperature,  $t_p=10\mu s$ , Duty Cycle=1%

## N-Channel MOSFET

### 2KK5070

#### ■ Electrical Characteristics Ta = 25°C

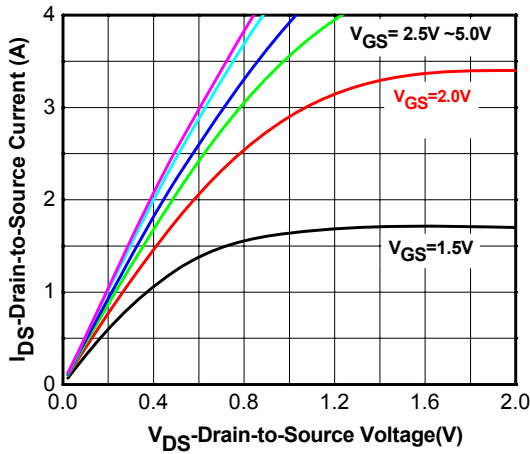
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =250 μ A, V <sub>GS</sub> =0V	20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =16V, V <sub>GS</sub> =0V			1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±5V			±5	μA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μ A	0.45		0.85	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =0.55A			310	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =0.45A			360	
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =0.35A			460	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =0.55A		2		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =10V, f=100KHz		50		pF
Output Capacitance	C <sub>oss</sub>			13		
Reverse Transfer Capacitance	C <sub>rss</sub>			8		
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =10V, I <sub>D</sub> =0.55A		1.15		nC
Threshold Gate Charge	Q <sub>g(th)</sub>			0.06		
Gate Source Charge	Q <sub>gs</sub>			0.15		
Gate Drain Charge	Q <sub>gd</sub>			0.23		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>DD</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =0.55A, R <sub>G</sub> =6Ω		22		ns
Turn-On Rise Time	t <sub>r</sub>			80		
Turn-Off DelayTime	t <sub>d(off)</sub>			700		
Turn-Off Fall Time	t <sub>f</sub>			380		
Maximum Body-Diode Continuous Current	I <sub>S</sub>				0.35	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =0.35A, V <sub>GS</sub> =0V	0.5		1.5	V

#### ■ Marking

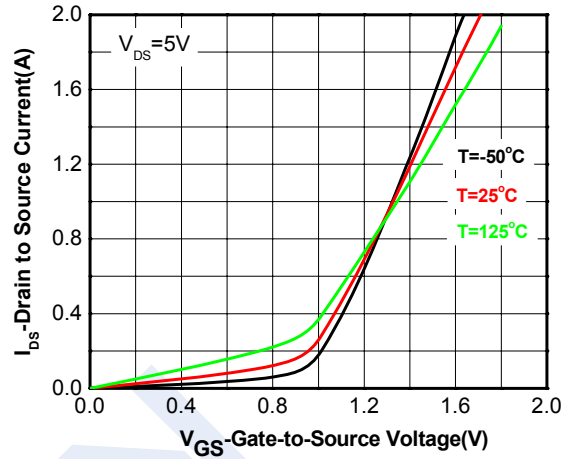
Marking	KAP
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## N-Channel MOSFET 2KK5070

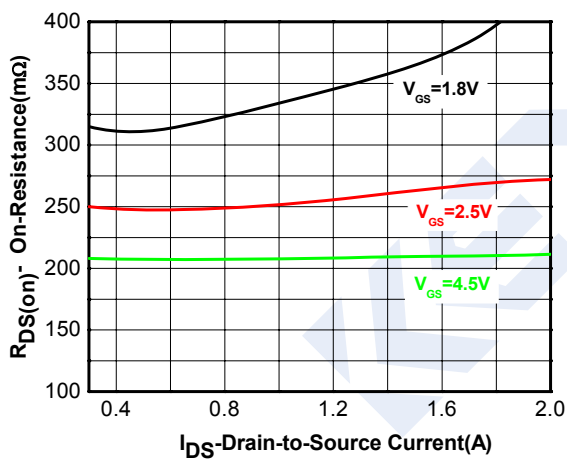
■ Typical Characteristics



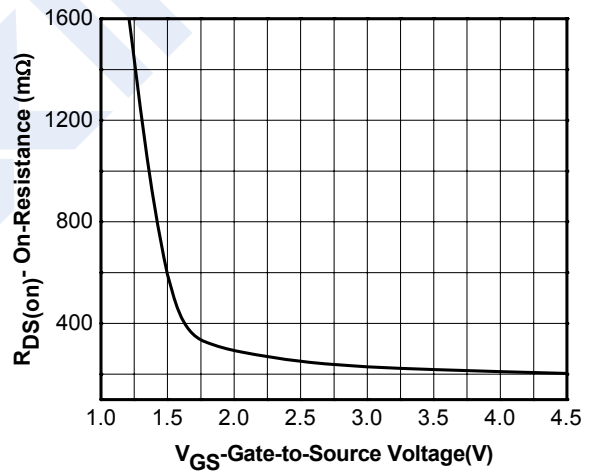
Output characteristics



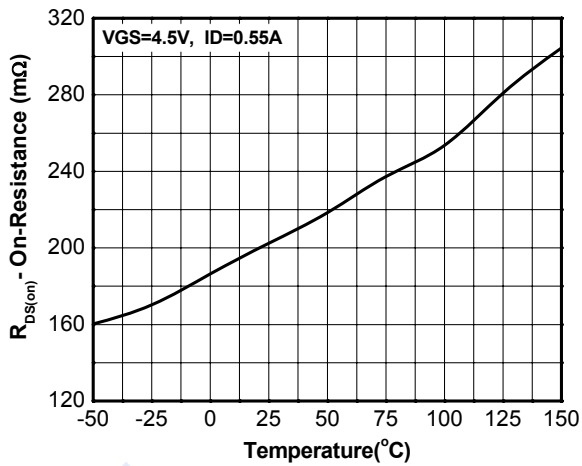
Transfer characteristics



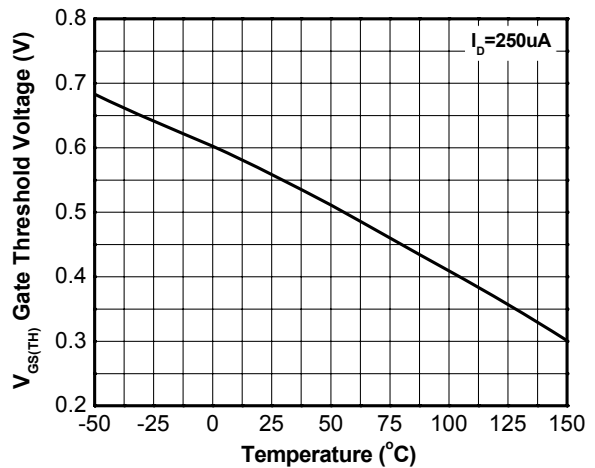
On-Resistance vs. Drain current



On-Resistance vs. Gate-to-Source voltage



On-Resistance vs. Junction temperature



Threshold voltage vs. Temperature

## N-Channel MOSFET 2KK5070

■ Typical Characteristics

