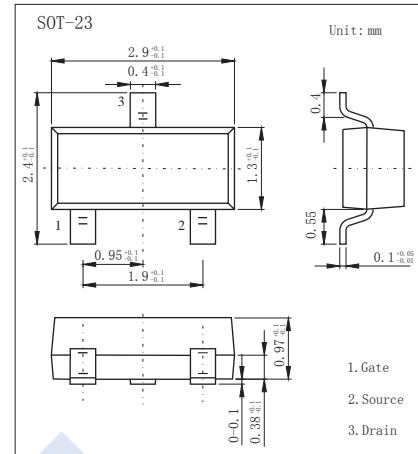
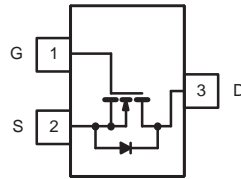


## N-Channel Enhancement MOSFET

### 2KK5002

#### ■ Features

- $V_{DS}=20V$
- $R_{DS(on)} < 50m\Omega @ V_{GS}=4.5V, I_D=3.6A$
- $R_{DS(on)} < 90m\Omega @ V_{GS}=2.5V, I_D=3.1A$



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	
Continuous Drain Current *1	$I_D$	$T_a=25^\circ C$	A
		$T_a=70^\circ C$	
Pulsed Drain Current	$I_{DM}$	10	
Power Dissipation	$P_D$	$T_a=25^\circ C$	W
		$T_a=70^\circ C$	
Thermal Resistance.Junction- to-Ambient *1	$R_{thJA}$		$^\circ C/W$
		*2	
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	

Notes:

\*1.Surface Mounted on FR4 Board,  $t \leq 5$  sec.

\*2.Surface Mounted on FR4 Board.

## N-Channel Enhancement MOSFET

### 2KK5002

#### ■ 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>D</sub> =20V, V <sub>GS</sub> =0V			1	μ A	
		V <sub>D</sub> =20V, V <sub>GS</sub> =0V, T <sub>J</sub> =55 °C			10		
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA	
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μ A	0.62		1.2	V	
Static Drain-Source On-Resistance	R <sub>Ds(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =3.6A		25	50	mΩ	
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =3.1A		40	90		
Forward Transconductance *	g <sub>fs</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =3.6A		8		S	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =10V, f=1MHz		300		pF	
Output Capacitance	C <sub>oss</sub>			120			
Reverse Transfer Capacitance	C <sub>rss</sub>			80			
Total Gate Charge	Q <sub>g</sub>			4	10		nC
Gate-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =3.6A		0.65			
Gate-Drain Charge	Q <sub>gd</sub>			1.5			
Turn-On DelayTime	t <sub>d(on)</sub>		V <sub>GS</sub> =4.5V, V <sub>DS</sub> =10V, R <sub>L</sub> =5.5 Ω, R <sub>GEN</sub> =6 Ω		7	15	ns
Turn-On Rise Time	t <sub>r</sub>			55	80		
Turn-Off DelayTime	t <sub>d(off)</sub>	I <sub>D</sub> =3.6A			16	60	
Turn-Off Fall Time	t <sub>f</sub>				10	25	
Continuous Source Current (Diode Conduction)	I <sub>S</sub>			1.6		A	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.6A, V <sub>GS</sub> =0V		0.76	1.2	V	

\* Pulse test: PW ≤ 300us duty cycle ≤ 2%

#### ■ Marking

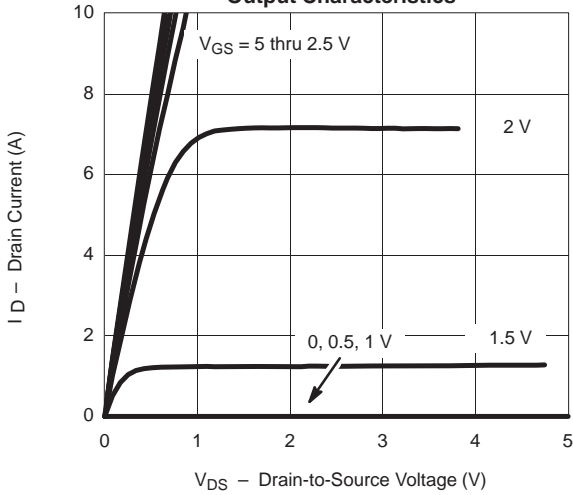
Marking	KA2
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# N-Channel Enhancement MOSFET

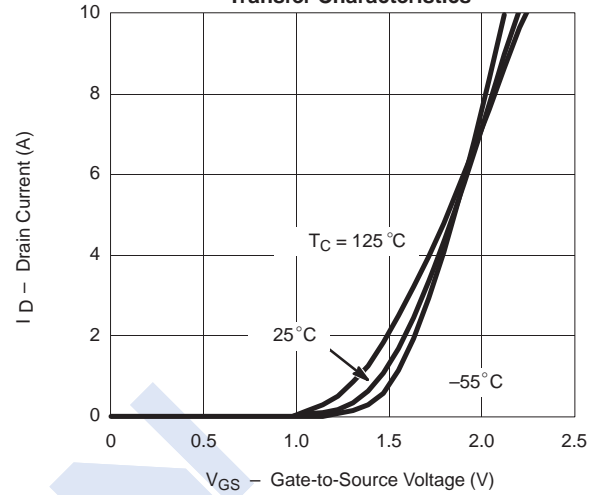
## 2KK5002

■ Typical Characteristics

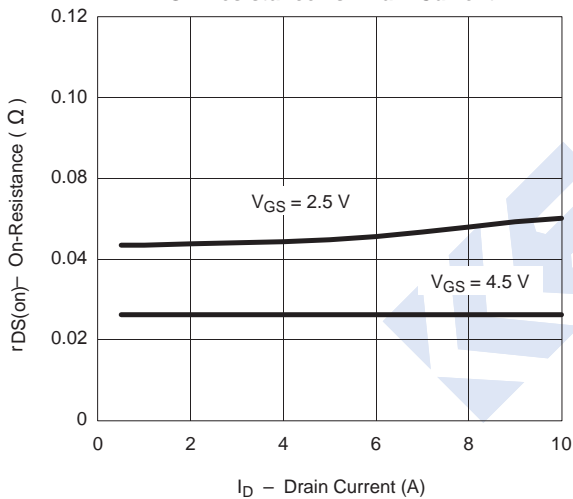
Output Characteristics



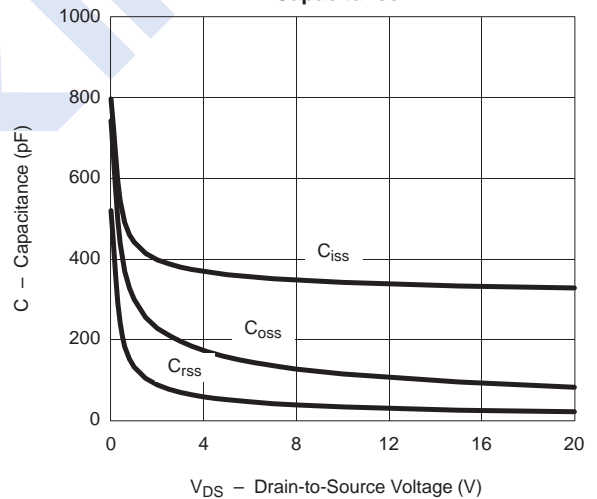
Transfer Characteristics



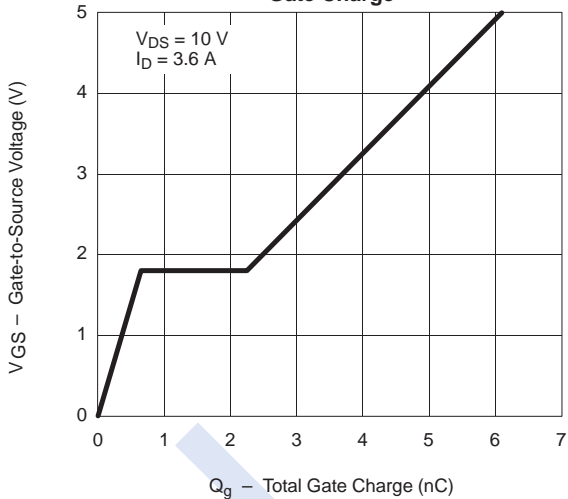
On-Resistance vs. Drain Current



Capacitance



Gate Charge



On-Resistance vs. Junction Temperature

