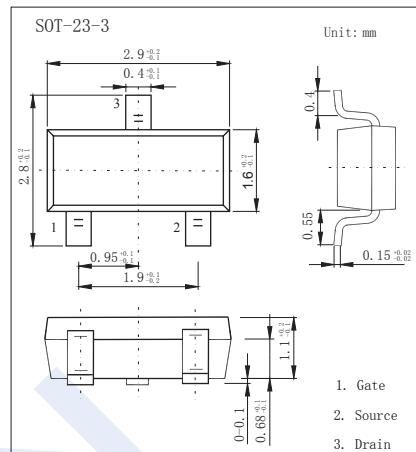
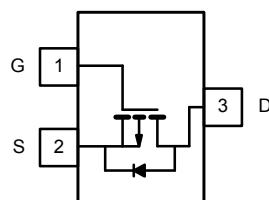


## P-Channel Enhancement MOSFET

### SI2303 (KI2303)

#### ■ Features

- $V_{DS} (V) = -30V$
- $R_{DS(ON)} < 200m\Omega$  ( $V_{GS} = -10V$ )
- $R_{DS(ON)} < 380m\Omega$  ( $V_{GS} = -4.5V$ )



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current $(T_j = 150^\circ C)$ *1	$I_D$	-1.7	A
$T_a = 70^\circ C$		-1.4	
Pulsed Drain Current	$I_{DM}$	-10	
Power Dissipation $T_a = 25^\circ C$	$P_D$	1.25	W
$T_a = 70^\circ C$		0.8	
Thermal Resistance.Junction- to-Ambient (surface mounted on FR4 board)	$R_{thJA}$	100	$^\circ C/W$
		166	
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	

\*1 Surface Mounted on 1" x 1" FR4 Board.

## P-Channel Enhancement MOSFET

### SI2303 (KI2303)

#### ■ 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	-30			V	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>Ds</sub> =-30V, V <sub>GS</sub> =0V			-1	μ A	
		V <sub>Ds</sub> =-30V, 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> =±20V			±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	-1.0		-3.0	V	
Static Drain-Source On-Resistance *1	R <sub>D(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-1.7A			200	mΩ	
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-1.3A			380		
On state drain current *1	I <sub>D(on)</sub>	V <sub>GS</sub> =-10V, V <sub>Ds</sub> ≥-5V	-6			A	
Forward Transconductance *1	g <sub>FS</sub>	V <sub>Ds</sub> =-10V, I <sub>D</sub> =-1.7A		2.4		S	
Input Capacitance *2	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>Ds</sub> =-15V, f=1MHz		226		pF	
Output Capacitance *2	C <sub>oss</sub>			87			
Reverse Transfer Capacitance *2	C <sub>rss</sub>			19			
Total Gate Charge *2	Q <sub>g</sub>	V <sub>GS</sub> =-10V, V <sub>Ds</sub> =-4.5V, I <sub>D</sub> =-1.7A		5.8	10	nC	
Gate Source Charge *2	Q <sub>gs</sub>			0.8			
Gate Drain Charge *2	Q <sub>gd</sub>			1.5			
Turn-On DelayTime *3	t <sub>d(on)</sub>	V <sub>GS</sub> =-10V, V <sub>Ds</sub> =-15V, R <sub>L</sub> =15 Ω ,R <sub>GEN</sub> =6 Ω I <sub>D</sub> =-1.0A		9.0	20	ns	
Turn-On Rise Time *3	t <sub>r</sub>			9.0	20		
Turn-Off DelayTime *3	t <sub>d(off)</sub>			18	35		
Turn-Off Fall Time *3	t <sub>f</sub>			6.0	20		
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-1.25	A	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1.25A, V <sub>GS</sub> =0V			-0.8	-1.2	V

\*1 Pulse test: PW ≤ 300us duty cycle≤ 2%.

\*2 For DESIGN AID ONLY, not subject to production testing.

\*3 Switching time is essentially independent of operating temperature.

#### ■ Marking

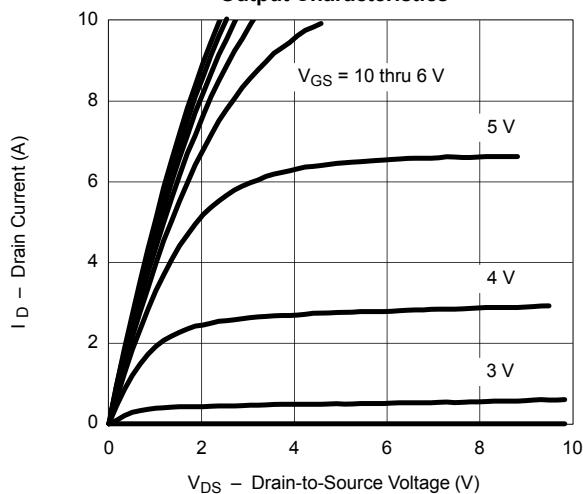
Marking	A3*
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## P-Channel Enhancement MOSFET

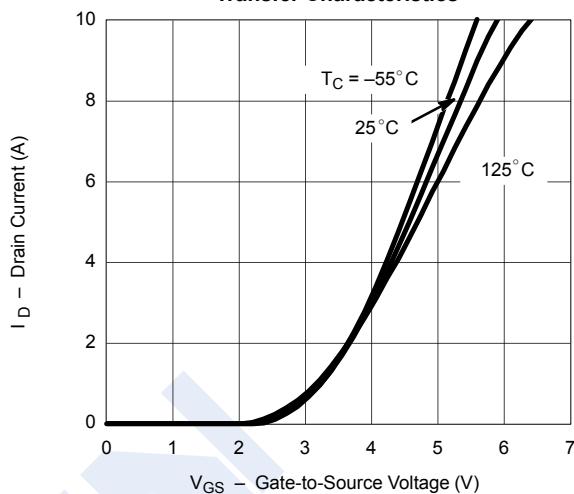
SI2303 (KI2303)

## ■ Typical Characteristics

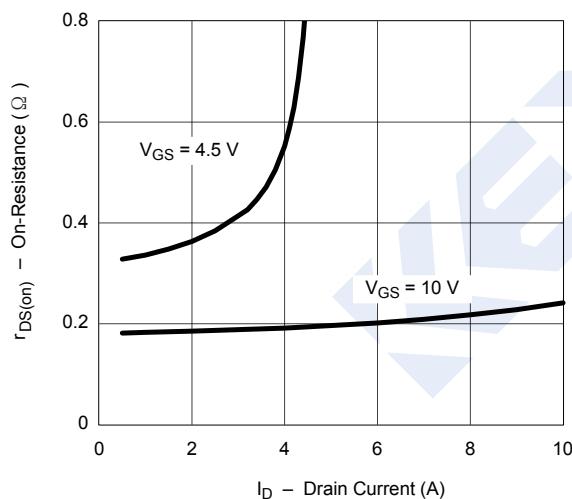
## Output Characteristics



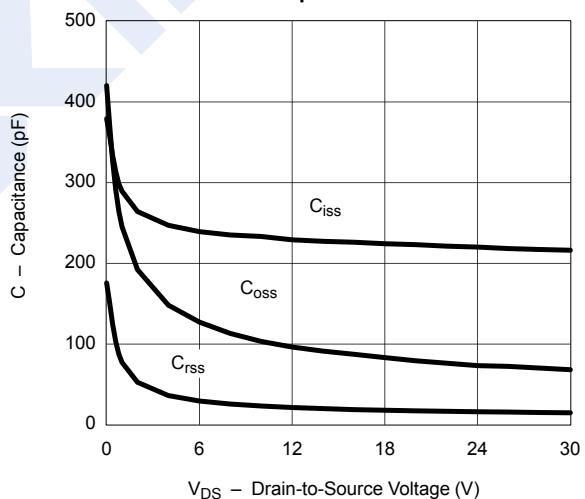
## Transfer Characteristics



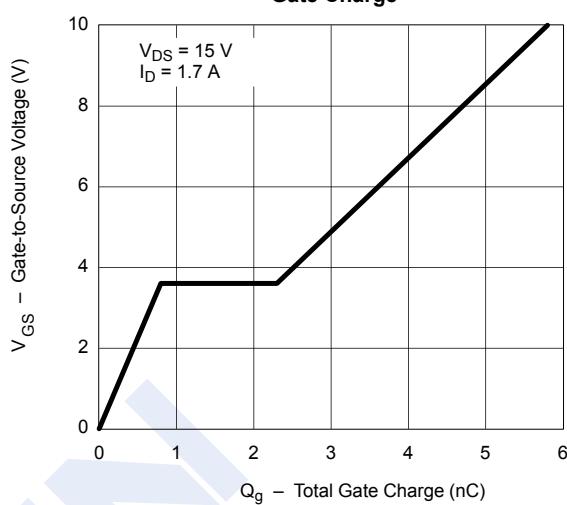
## On-Resistance vs. Drain Current



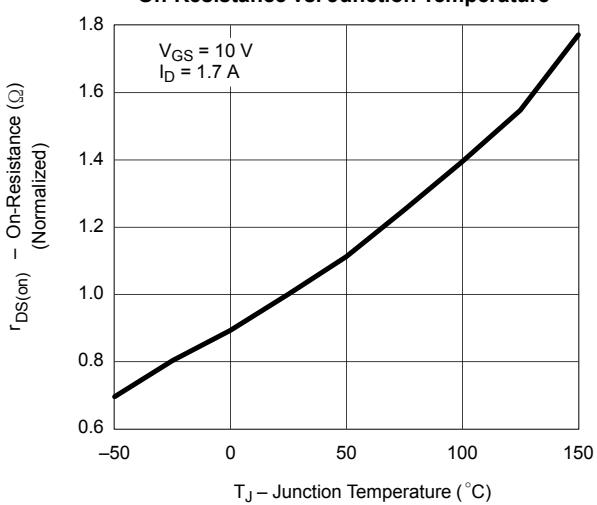
## Capacitance



## Gate Charge



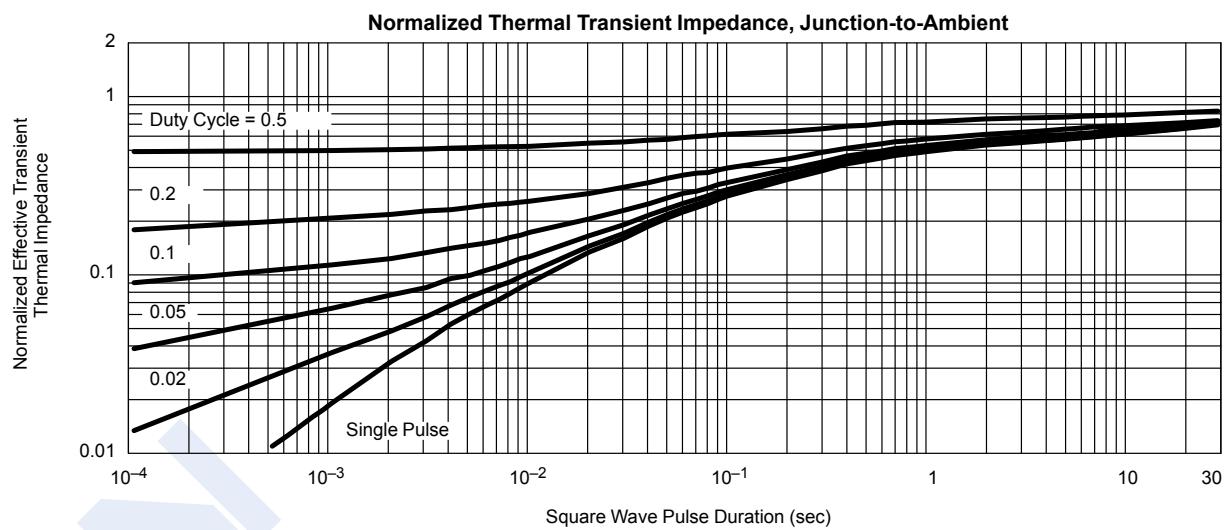
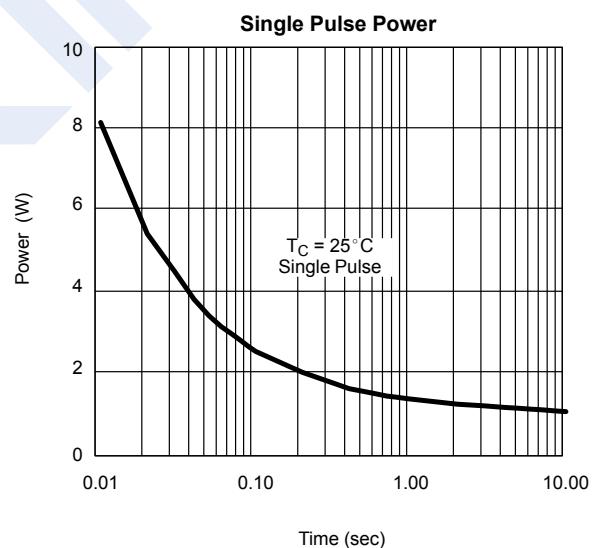
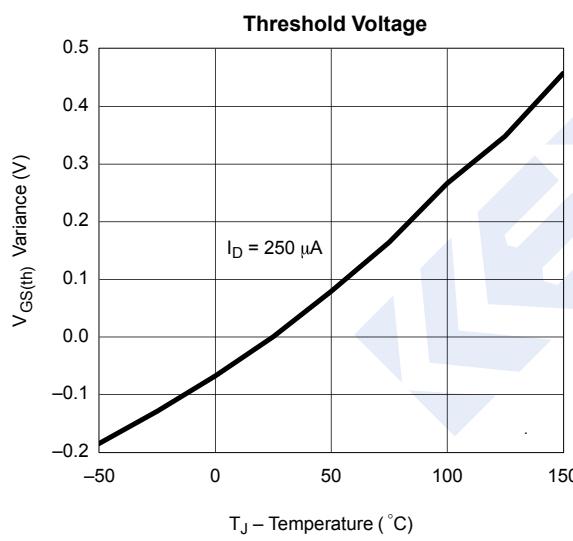
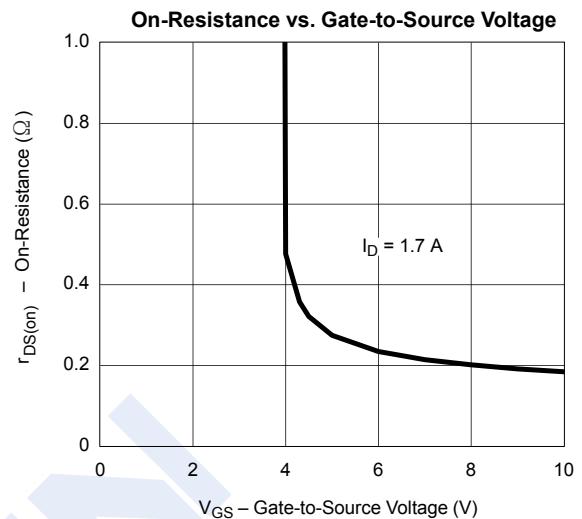
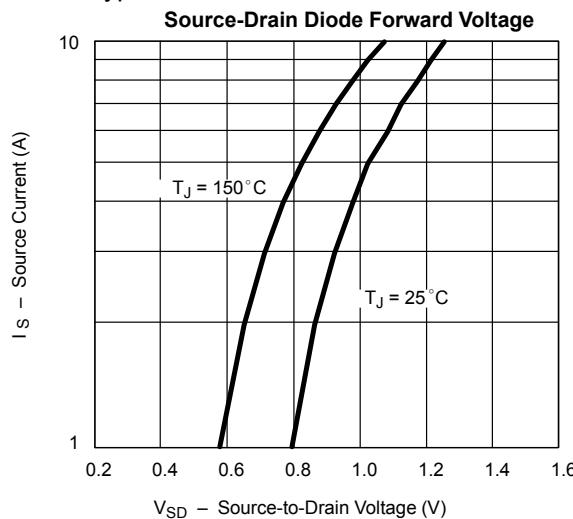
## On-Resistance vs. Junction Temperature



## P-Channel Enhancement MOSFET

SI2303 (K12303)

## ■ Typical Characteristics



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