

N-Channel Enhancement Mode MOSFET

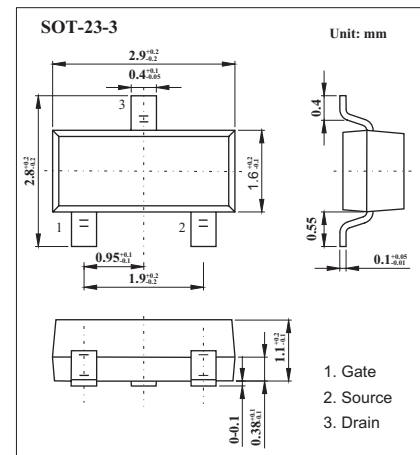
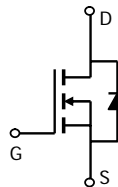
KI2306

Features

$R_{DS(ON)}=0.030$ @ $V_{GS}=10V$

$R_{DS(ON)}=0.035$ @ $V_{GS}=4.5V$

$R_{DS(ON)}=0.052$ @ $V_{GS}=2.5V$



Absolute Maximum Ratings $T_a = 25$ Unless Otherwise Noted

Parameter	Symbol	5sec	Steady State	Unit
Drain-source voltage	V_{DS}	30		V
Gate-source voltage	V_{GS}	± 12		
Continuous drain current @ $T_A=25$	I_D	4	3.16	A
@ $T_A=70$		3.5	2.7	
Pulsed drain current	I_{DM}	20		
Maximum Power dissipation @ $T_A=25$	P_D	1.25	0.75	W
@ $T_A=70$		0.8	0.48	
Maximum Body-Diode Continuous Current	I_S	1.04	0.62	A
Thermal Resistance-Junction to Case (Note 1)	R_{JC}	65		/W
Maximum Junction to Ambient (Note 1) t 10 sec	R_{JA}	70		
Steady State		95		
Operating junction and storage temperature range	T_i, T_{stg}	-55 to +150		

Note: 1. The device mounted on 1in2 FR4 board with 2 oz copper

KI2306

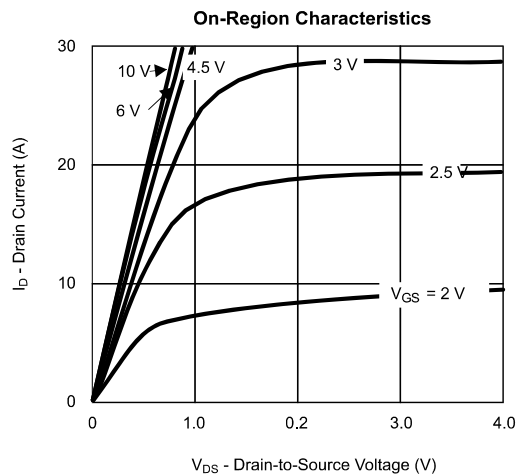
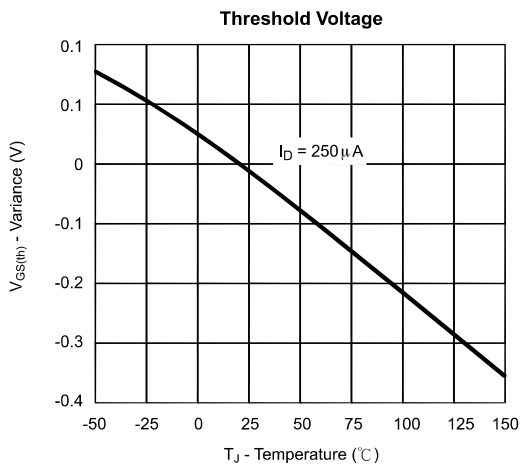
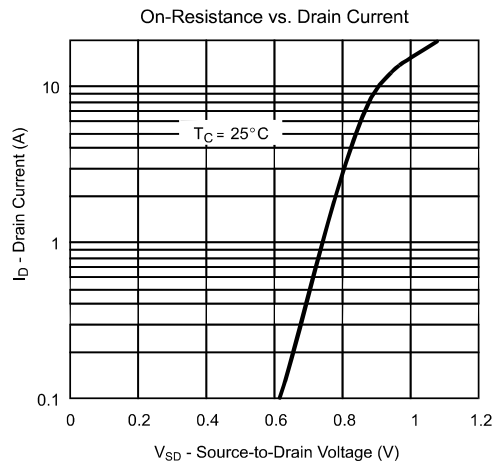
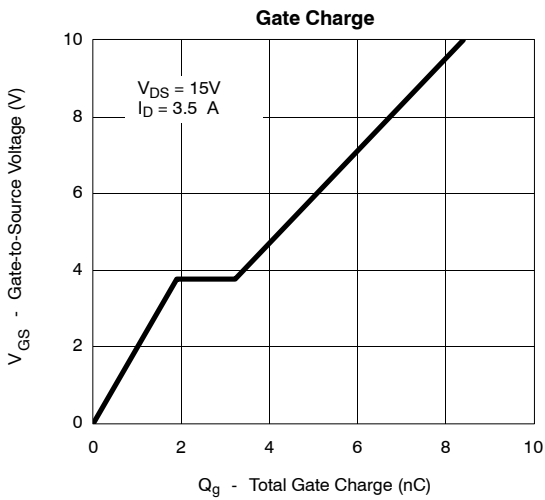
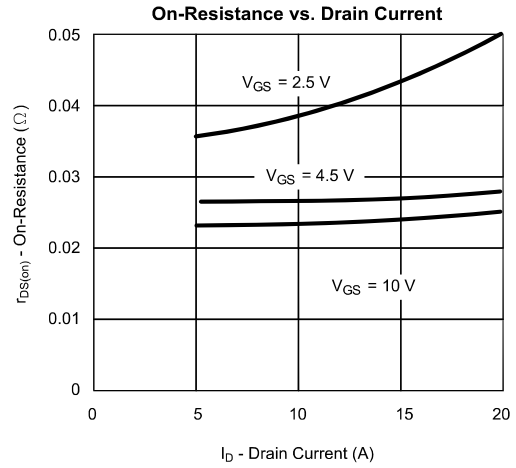
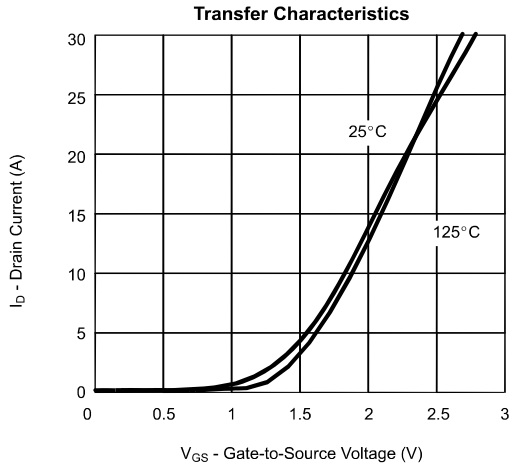
Electrical Characteristics Ta = 25 Unless Otherwise Noted

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-source breakdown voltage	V _{DSS}	V _{GS} = 0 V, I _D = 250 μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0 V			1	μA
		V _{DS} = 30V, V _{GS} = 0 V, T _J = 55			10	
Gate-body leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 12V			± 100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	0.7		1.4	V
Drain-source on-state resistance (Note 2)	R _{DSON}	V _{GS} = 10 V, I _D = 4.0 A		0.024	0.030	
		V _{GS} = 4.5 V, I _D = 3.5 A		0.027	0.035	
		V _{GS} = 2.5V, I _D = 2.8 A		0.037	0.052	
On-state drain current (Note 2)	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	20			A
Forward transconductance	g _{fs}	V _{DS} = 4.5 V, I _D = 4.0 A		6.9		S
gate charge	Q _g	V _{DS} = 15V, V _{GS} = 10V, I _D = 4.0A		13		nC
Total gate charge	Q _g	V _{DS} = 15V, V _{GS} = 4.5 V, I _D = 4.0 A		6.3		nC
Gate-source charge	Q _{gs}			2.9		
Gate-drain charge	Q _{gd}			2.4		
Gate Resistance	R _g	f = 1 MHz		0.6		
Input capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0, f = 1 MHz		380		pF
Output capacitance	C _{oss}			64		
Reverse transfer capacitance	C _{rss}			15		
Turn-on time	t _{d(on)}	V _{DD} = 15V, R _L = 15 Ω, I _D = 1A, V _{GEN} = -10V, R _G = 6		9		ns
	t _r			14		
Turn-off time	t _{d(off)}			33		
	t _f			3		
Diode Forward Voltage	V _{SD}	I _S = 1.25A, V _{GS} = 0V		0.8	1.2	V

Notes: 2. Pulse test: pulse width ≤ 300us, duty cycle ≤ 2%

KI2306

Typical Characteristics



KI2306

Typical Characteristics

