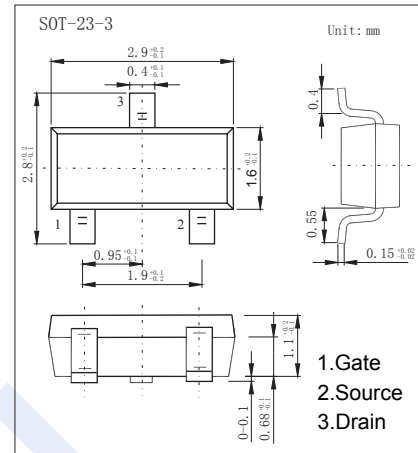
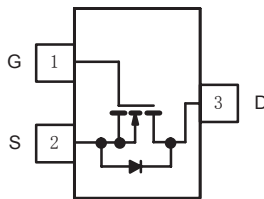


N-Channel MOSFET

KI3305DS

■ Features

- $V_{DS} = 60V$
- $I_D = 2.3 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 156m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 192m\Omega$ ($V_{GS} = 4.5V$)



■ 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	$T_c=25^\circ C$	I_D	2.3	A
	$T_c=70^\circ C$		1.8	
	$T_a=25^\circ C$		1.9	
	$T_a=70^\circ C$		1.5	
Pulsed Drain Current		I_{DM}	8	mJ
Avalanche Current	$L=0.1mH$	I_{AS}	6	
Single-Pulse Avalanche Energy		E_{AS}	1.8	W
Power Dissipation	$T_c=25^\circ C$	P_D	1.66	
	$T_c=70^\circ C$		1.06	
	$T_a=25^\circ C$		1.09	
	$T_a=70^\circ C$		0.7	
Thermal Resistance.Junction- to-Ambient	$t \leq 5s$	R_{thJA}	115	$^\circ C/W$
Thermal Resistance.Junction- to-Foot	Steady State	R_{thJF}	75	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1: Surface Mounted on 1" x 1" FR4 board ($t = 5 s$).

N-Channel MOSFET

KI3305DS

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
		V _{DS} =60V, V _{GS} =0V, T _J =55°C			10	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	1		3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =1.9A (Note.1)		130	156	mΩ
		V _{GS} =4.5V, I _D =1.7A (Note.1)		160	192	
On State Drain Current	I _{D(on)}	V _{GS} =5V, V _{DS} =10V (Note.1)	8			A
Forward Transconductance	g _{FS}	V _{DS} =15V, I _D =1.9A (Note.1)		5		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =30V, f=1MHz		190		pF
Output Capacitance	C _{oss}			26		
Reverse Transfer Capacitance	C _{rss}			15		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	0.6	2.8	5.6	Ω
Total Gate Charge	Q _g	V _{GS} =30V, V _{DS} =10V, I _D =1.9A		4.5	6.8	nC
				2.3	3.5	
Gate Source Charge	Q _{gs}	V _{GS} =30V, V _{DS} =4.5V, I _D =1.9A		0.8		
Gate Drain Charge	Q _{gd}			1		
Turn-On DelayTime	t _{d(on)}	V _{GS} =10V, V _{DS} =30V, R _L =20 Ω, R _G =1 Ω, I _D =1.5A		4	6	ns
Turn-On Rise Time	t _r			10	15	
Turn-Off DelayTime	t _{d(off)}			10	15	
Turn-Off Fall Time	t _f			7	10.5	
Turn-On DelayTime	t _{d(on)}	V _{GS} =4.5V, V _{DS} =30V, R _L =20 Ω, R _G =1 Ω, I _D =1.5A		15	23	
Turn-On Rise Time	t _r			16	24	
Turn-Off DelayTime	t _{d(off)}			11	17	
Turn-Off Fall Time	t _f			11	17	
Body Diode Reverse Recovery Time	t _{rr}	I _F =1.5A, di/dt=100A/μs, T _J =25°C		15	23	nC
Body Diode Reverse Recovery Charge	Q _{rr}			10	15	
Reverse Recovery Fall Time	t _a			12		ns
Reverse Recovery Rise Time	t _b			3		
Maximum Body-Diode Continuous Current	I _S	T _C =25°C			1.39	A
Pulse Diode Forward Current	I _{SM}				8	
Diode Forward Voltage	V _{SD}	I _S =1.5A, V _{GS} =0V		0.8	1.2	V

Note.1: Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.

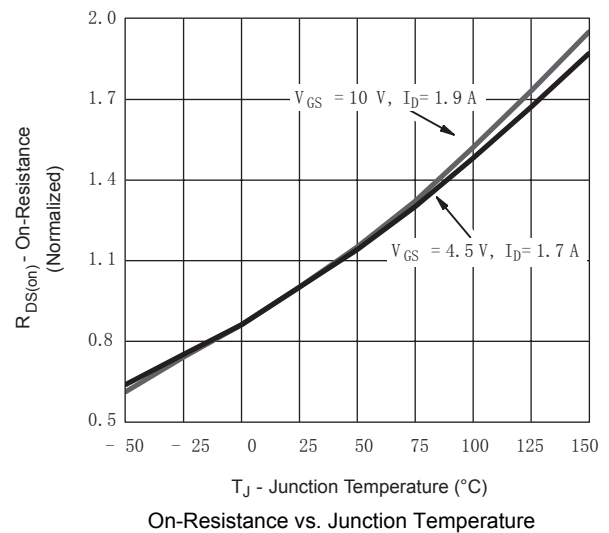
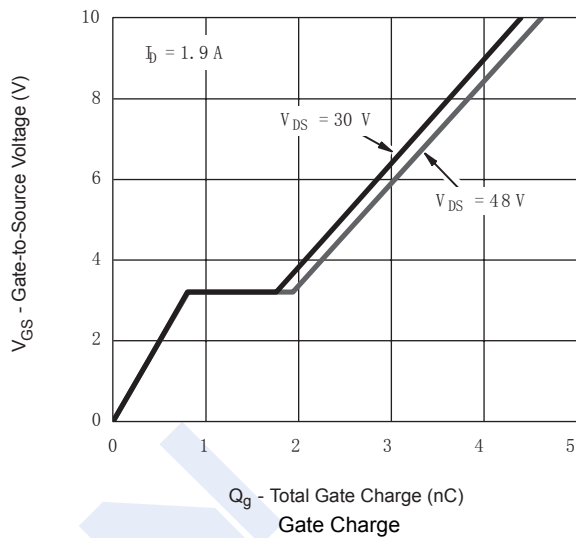
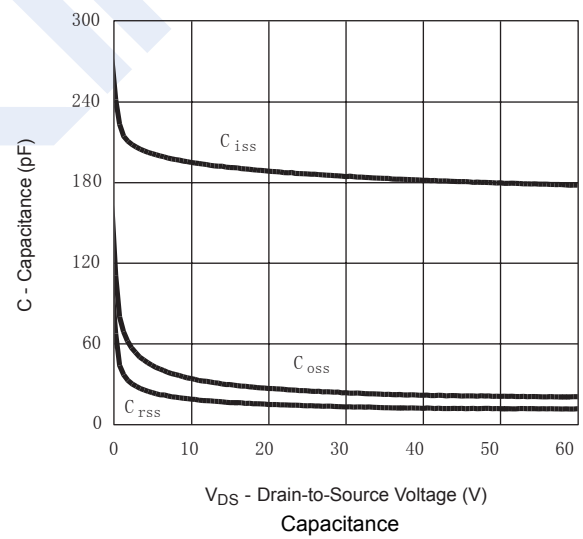
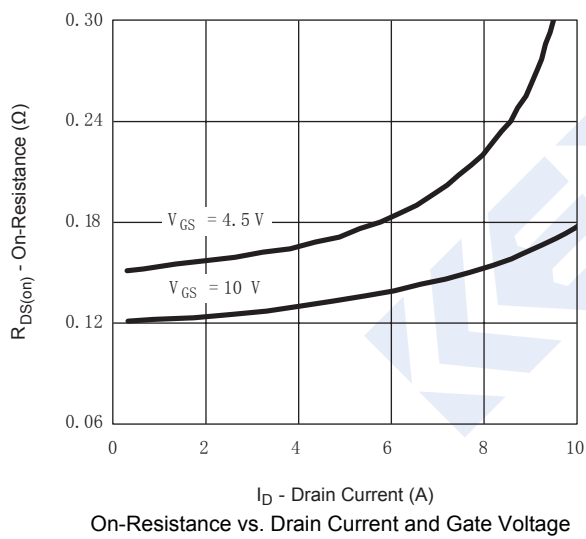
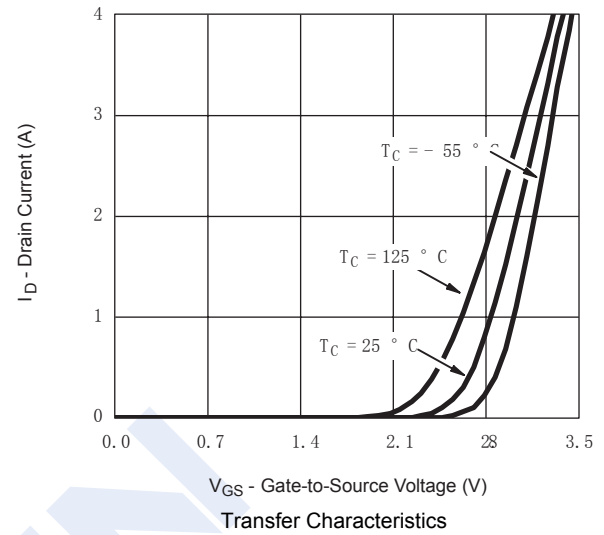
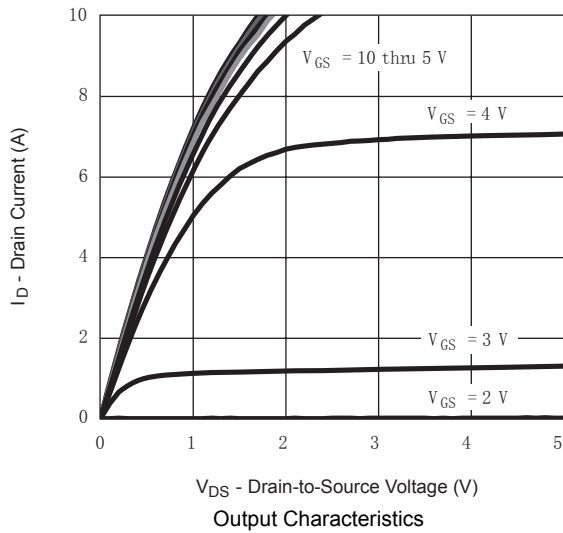
■ Marking

Marking	3055
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N-Channel MOSFET

KI3305DS

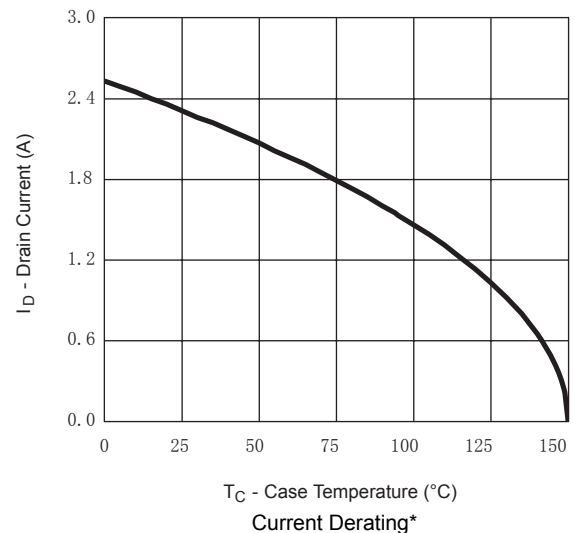
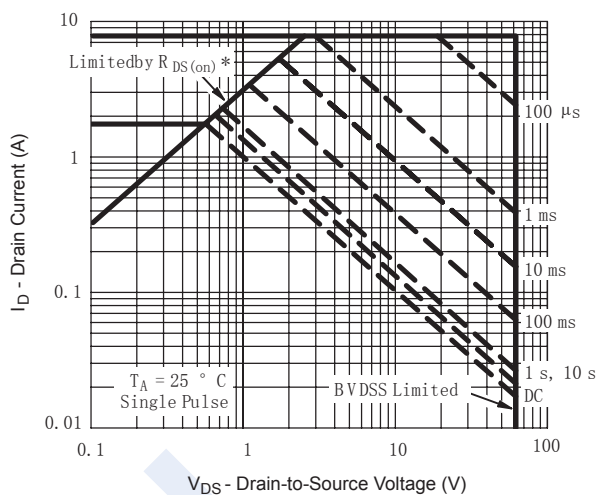
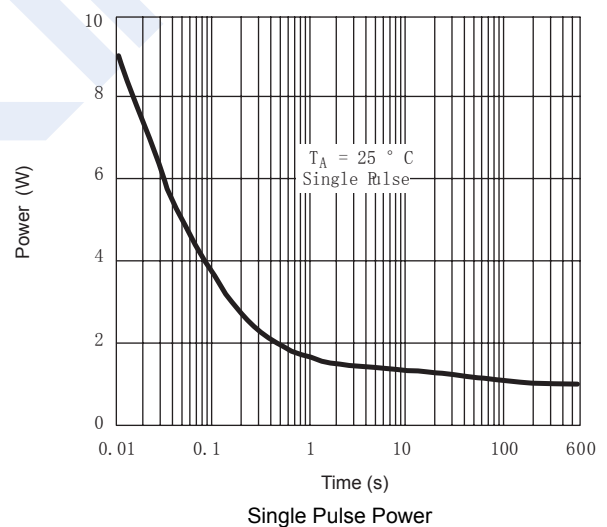
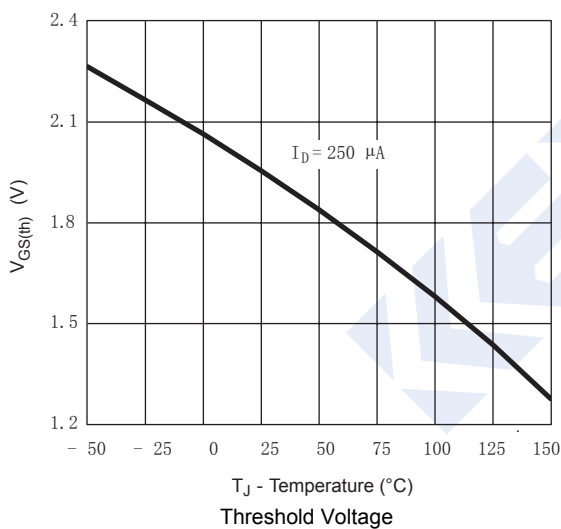
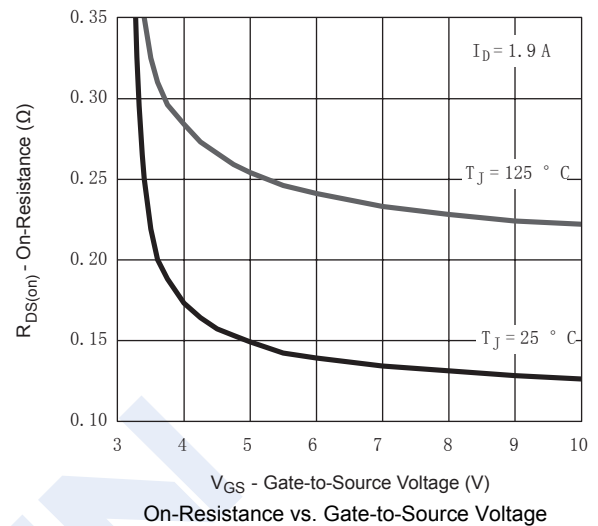
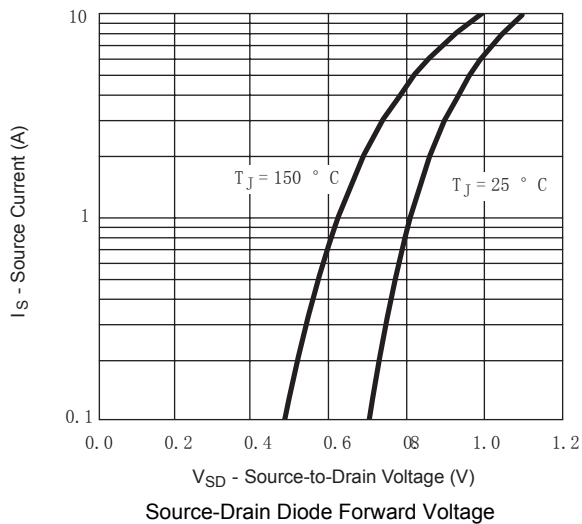
■ Typical Characteristics



N-Channel MOSFET

KI3305DS

■ Typical Characteristics

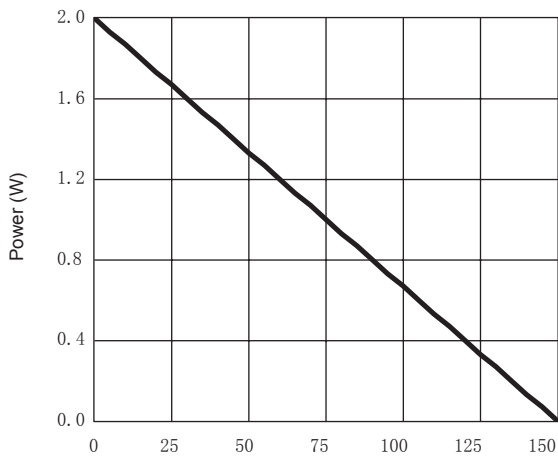


* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified

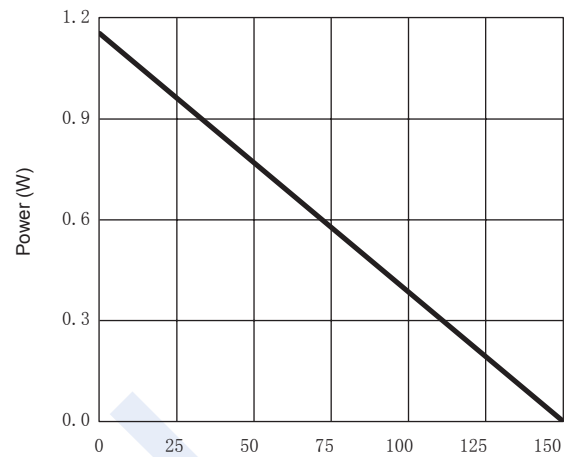
N-Channel MOSFET

KI3305DS

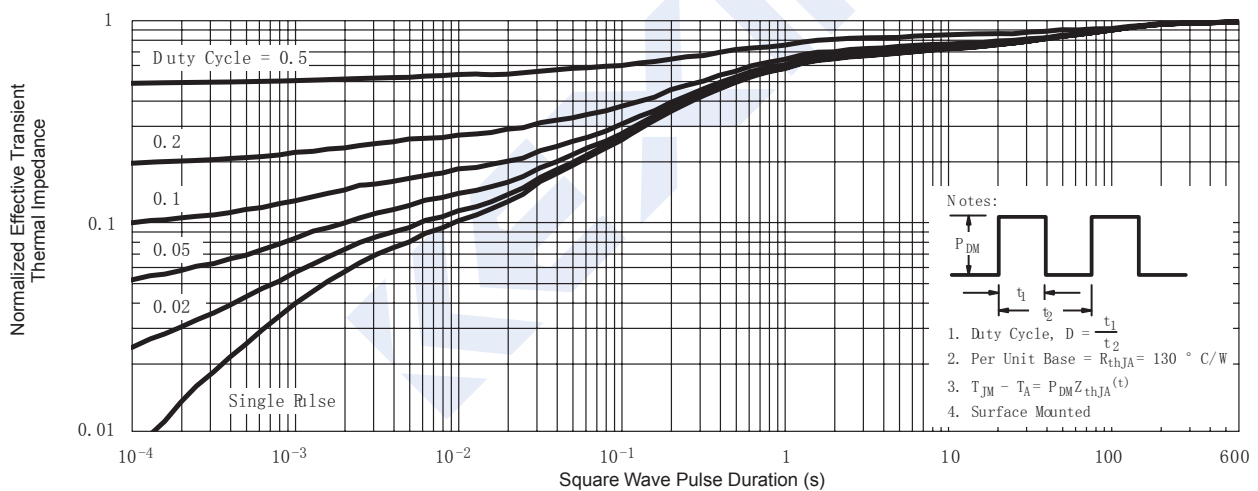
Typical Characteristics



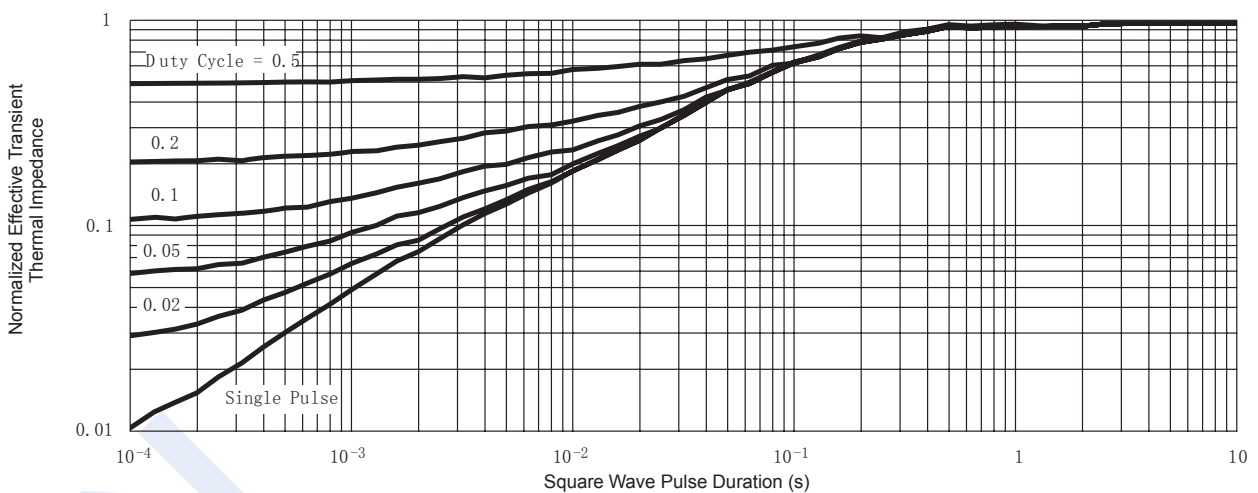
T_C - Case Temperature ($^{\circ}\text{C}$)
Power Derating, Junction-to-Case



T_A - Ambient Temperature ($^{\circ}\text{C}$)
Power Derating, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot