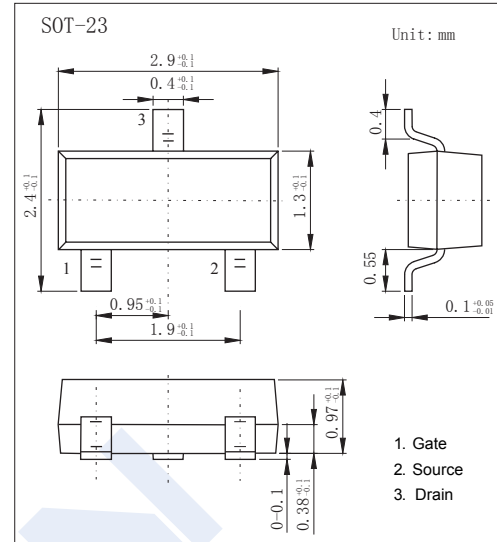


P-Channel MOSFET

SI2369DS (K12369DS)

■ Features

- $V_{DS} = -30V$
- $I_D = -7.6A$ ($V_{GS} = \pm 20V$)
- $R_{DS(ON)} < 29m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 34m\Omega$ ($V_{GS} = -6V$)
- $R_{DS(ON)} < 40m\Omega$ ($V_{GS} = -4.5V$)



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ C$)	$T_C = 25^\circ C$	I_D	-7.6	A
	$T_C = 72^\circ C$		-6.1	
	$T_A = 25^\circ C^{*1*2}$		-5.4	
	$T_A = 70^\circ C^{*1*2}$		-4.3	
Pulsed Drain Current ($t = 100\mu s$)		I_{DM}	-80	
Power Dissipation	$T_C = 25^\circ C$	P_D	2.5	W
	$T_C = 70^\circ C$		1.6	
	$T_A = 25^\circ C^{*1*2}$		1.25	
	$T_A = 70^\circ C^{*1*2}$		0.8	
Thermal Resistance.Junction- to-Ambient ^{*1*3}	$t \leq 5S$	R_{thJA}	100	$^\circ C/W$
Thermal Resistance.Junction- to-Foot		R_{thJC}	50	
Junction Temperature		T_J	150	$^\circ C$
Junction Storage Temperature Range		T_{stg}	-55 to 150	

Notes:

*1. Surface mounted on 1" x 1" FR4 board.

*2. $t = 5s$.

*3. Maximum under steady state conditions is $166^\circ C/W$.

P-Channel MOSFET

SI2369DS (KI2369DS)

■ 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	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
		V _{DS} =-30V, V _{GS} =0V, T _J =55°C			-5	
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	-1.2		-2.5	V
Static Drain-Source On-Resistance *1	R _{DS(on)}	V _{GS} =-10V, I _D =-5.4A			29	mΩ
		V _{GS} =-6V, I _D =-5A			34	
		V _{GS} =-4.5V, I _D =-4.6A			40	
On State Drain Current *1	I _{D(on)}	V _{GS} =-10V, V _{DS} ≤-5V	-25			A
Forward Transconductance *1	g _{FS}	V _{DS} =-15V, I _D =-5.4A		18		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		1295		pF
Output Capacitance	C _{oss}			150		
Reverse Transfer Capacitance	C _{rss}			130		
Gate Resistance	R _g	f=1MHz	1.5		15.4	Ω
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-5.4A			36	nC
Gate Source Charge	Q _{gs}	V _{GS} =-4.5V, V _{DS} =-15V, I _D =-5.4A			17	
Gate Drain Charge	Q _{gd}			3.4		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-10V, V _{DS} =-15V, R _L =3.5Ω, R _{GEN} =1Ω I _D ≤-4.3A			20	ns
Turn-On Rise Time	t _r				8	
Turn-Off DelayTime	t _{d(off)}				57	
Turn-Off Fall Time	t _f				12	
Turn-On DelayTime	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-15V, R _L =3.5Ω, R _{GEN} =1Ω I _D ≤-4.3A			42	
Turn-On Rise Time	t _r				24	
Turn-Off DelayTime	t _{d(off)}				45	
Turn-Off Fall Time	t _f				20	
Body Diode Reverse Recovery Time	t _{rr}	I _F =-4.3A, di/dt=100A/μs, T _J =25°C			23	nC
Body Diode Reverse Recovery Charge	Q _{rr}				14	
Reverse Recovery Fall Time	t _a			8		ns
Reverse Recovery Rise Time	t _b			7		
Maximum Body-Diode Continuous Current	I _S	T _C =25°C			-2.1	A
Pulse Diode Forward Current (t = 100 μs)	I _{SM}				-80	
Diode Forward Voltage	V _{SD}	I _S =-4.3A, V _{GS} =0V			-1.2	V

NOTES:

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

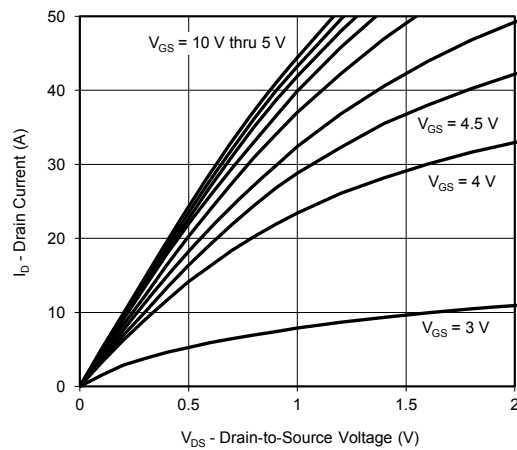
■ Marking

Marking	H9**
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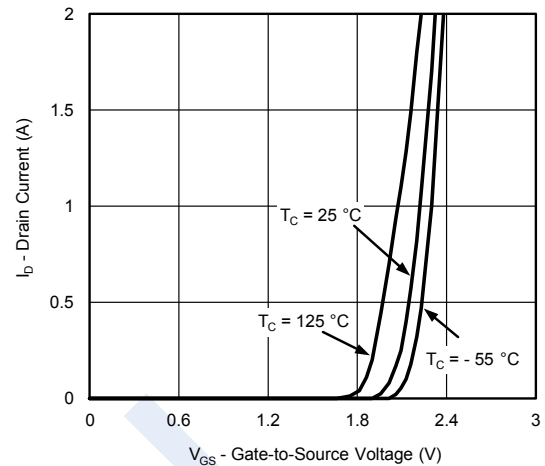
P-Channel MOSFET

SI2369DS (KI2369DS)

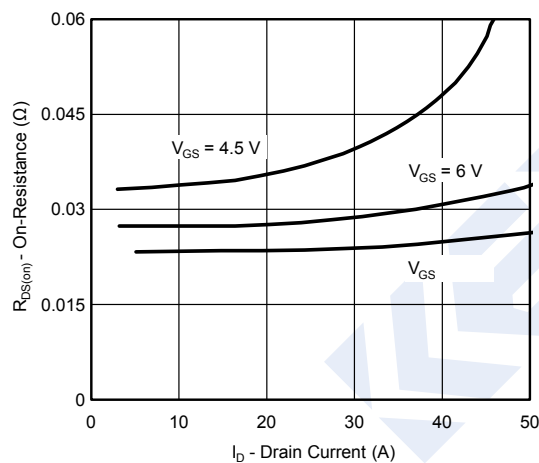
■ Typical Characteristics



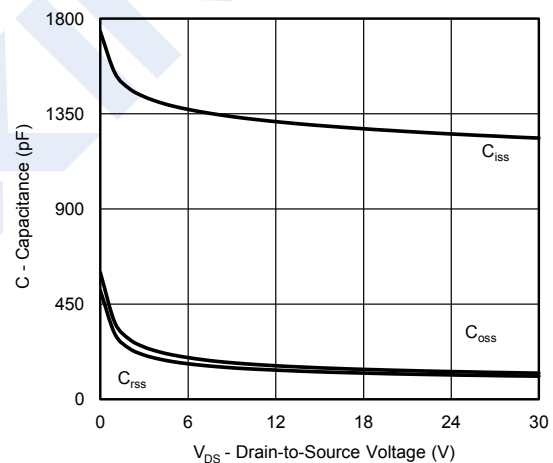
Output Characteristics



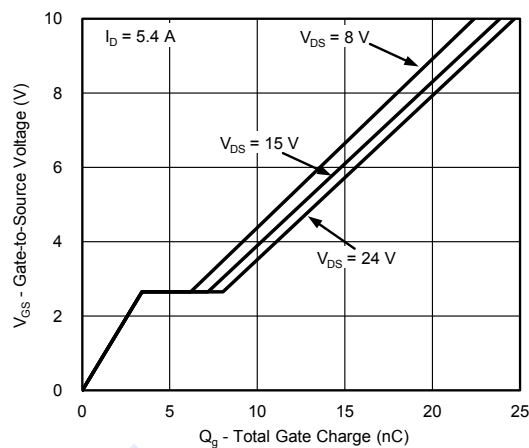
Transfer Characteristics



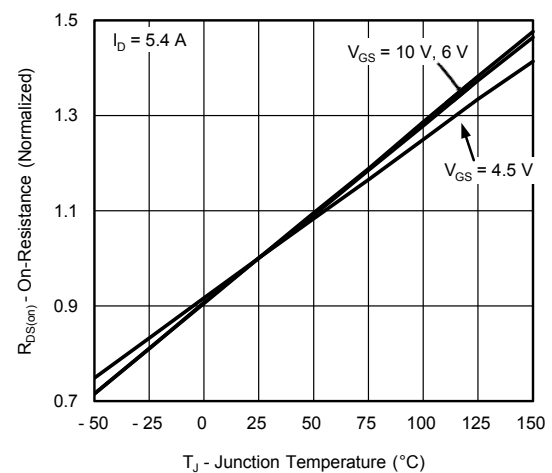
On-Resistance vs. Drain Current



Capacitance



Gate Charge

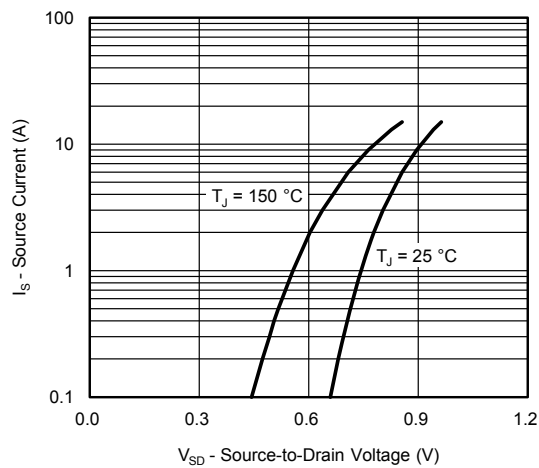


On-Resistance vs. Junction Temperature

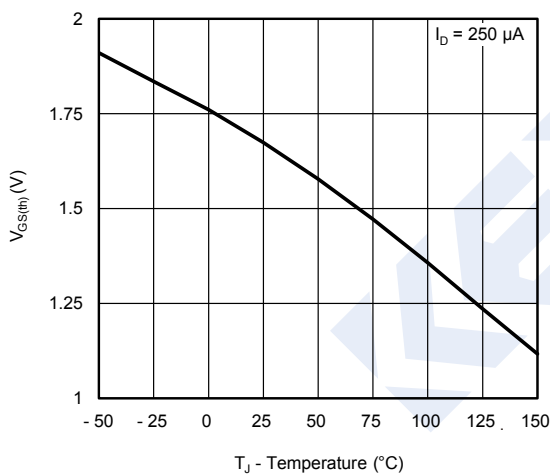
P-Channel MOSFET

SI2369DS (KI2369DS)

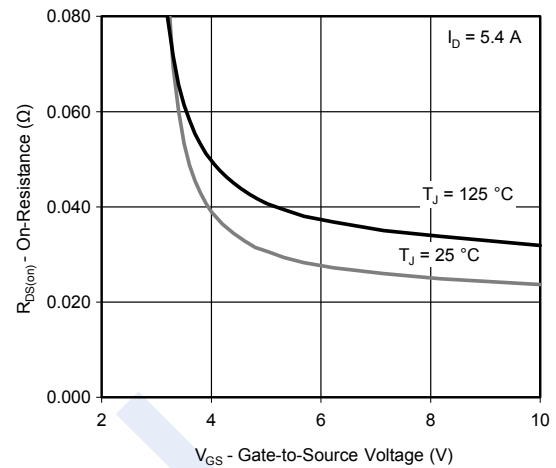
Typical Characteristics



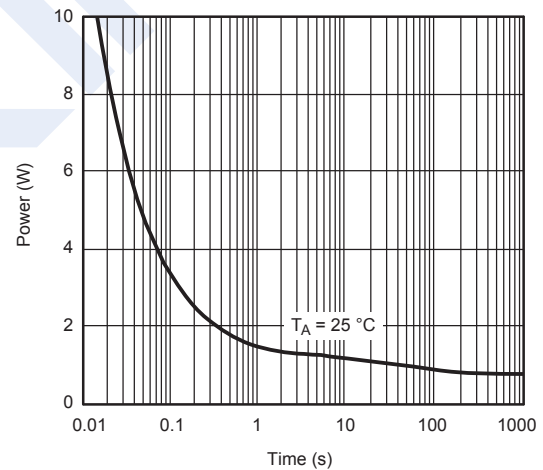
Source-Drain Diode Forward Voltage



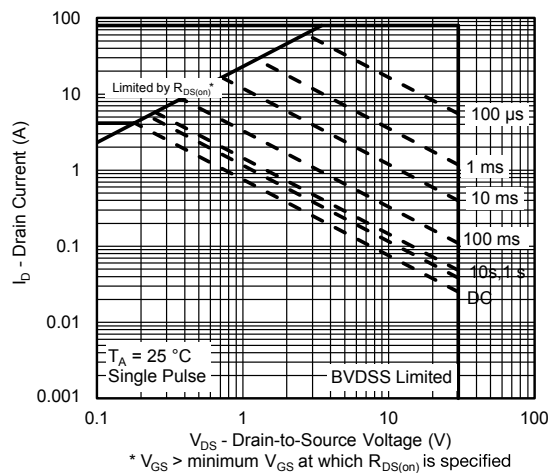
Threshold Voltage



On-Resistance vs. Gate-to-Source Voltage



Single Pulse Power (Junction-to-Ambient)

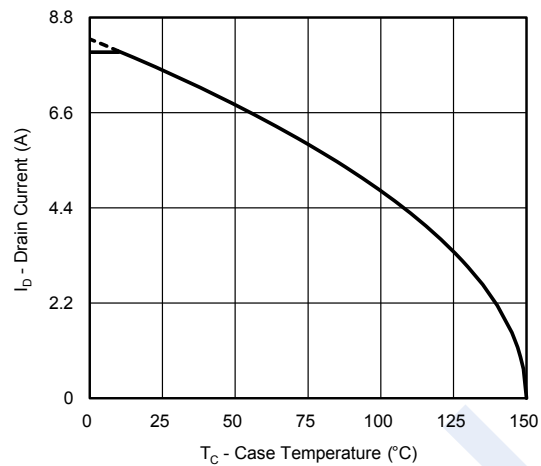


Safe Operating Area, Junction-to-Ambient

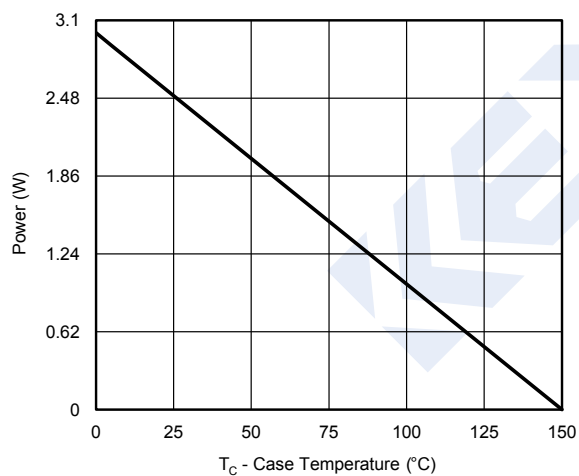
P-Channel MOSFET

SI2369DS (K12369DS)

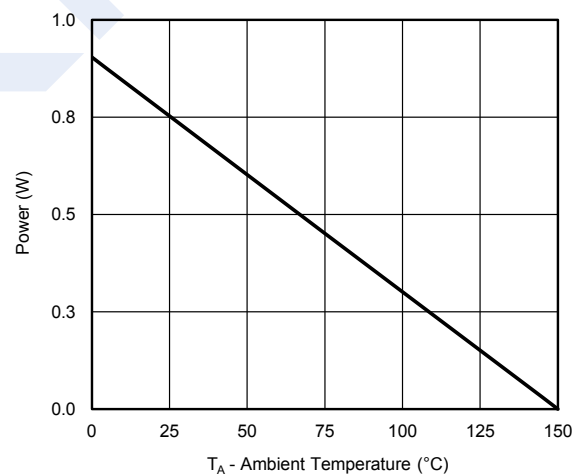
■ Typical Characteristics



Current Derating*



Power, Junction-to-Foot

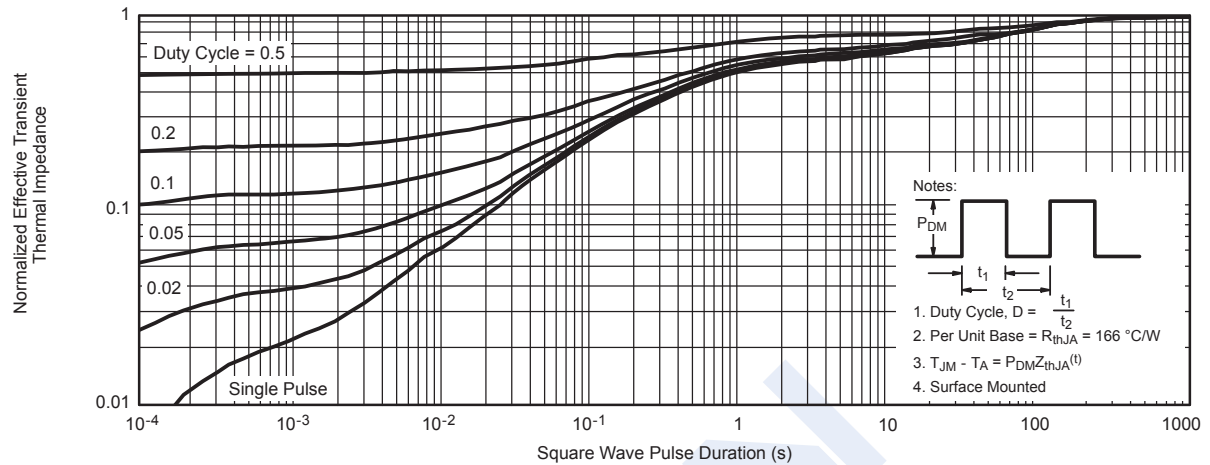


Power, Junction-to-Ambient

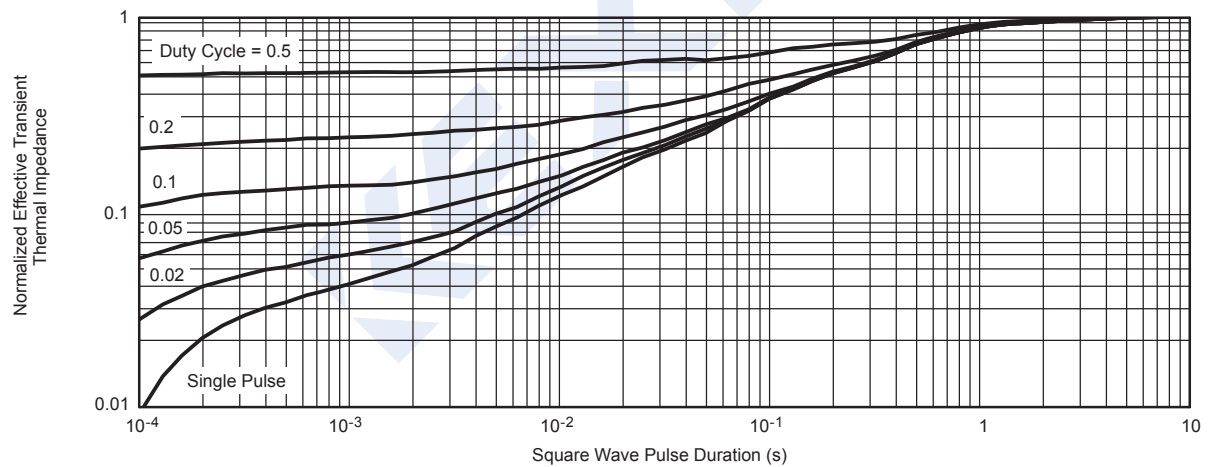
P-Channel MOSFET

SI2369DS (KI2369DS)

■ Typical Characteristics



Normalized Thermal Transient Impedance, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot