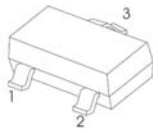
SI2328

N-Channel Enhancement Mode Field Effect Transistor

FEATURE

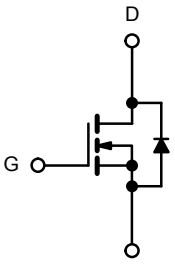
- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

SOT-23



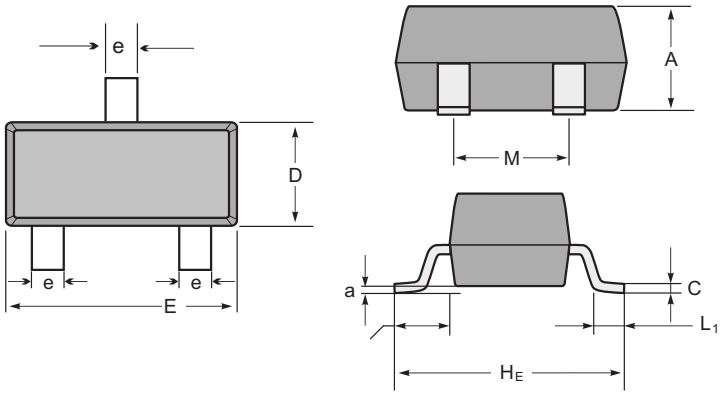
1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



Marking

Type number	Marking code
SI2328	D8***



SOT-23 mechanical data

UNIT		A	C	D	E	H_E	e	M	L	L_1	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	5 sec	Steady State	Unit
Drain-Source Voltage		V_{DS}	100		V
Gate-Source Voltage		V_{GS}	±20		
Continuous Drain Current *1	Ta=25℃	I_D	1.5	1.15	A
	Ta=70℃		1.2	0.92	
Pulsed Drain Current *2		I_{DM}	6		
Avalanche Current *2	L=0.1mH	I_{AS}	6		
Single Avalanche Energy		E_{AS}	1.8		mJ
Power Dissipation *1	Ta=25℃	P_D	1.25	0.73	W
	Ta=70℃		0.8	0.47	
Thermal Resistance.Junction- to-Ambient *1 t≤5 sec		R_{thJA}	100		℃/W
Steady State			170		
Thermal Resistance.Junction-to-Foot		R_{thJF}	55		
Junction Temperature		T_J	150		℃
Storage Temperature Range		T_{stg}	-55 to 150		

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

*2 Pulse width limited by maximum junction temperature

SI2328

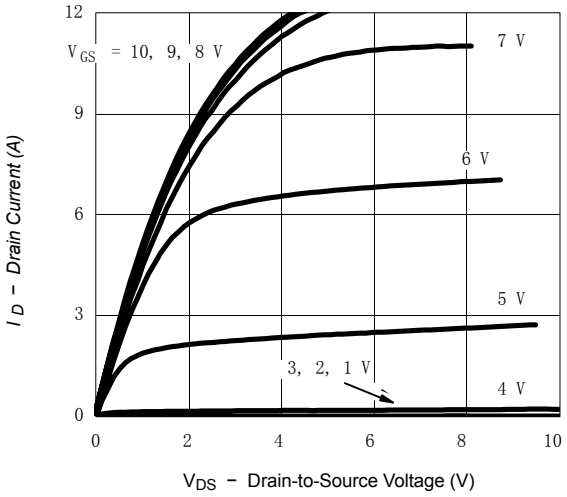
■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=1mA, V_{GS}=0V	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
		V_{DS}=100V, V_{GS}=0V, Ta=70℃			75	
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=250μA	2		4	V
On-State Drain Current *1	$I_{D(on)}$	V_{DS} ≥ 15 V, V_{GS} = 10 V	6			A
Static Drain-Source On-Resistance *1	$R_{DS(ON)}$	V_{GS}=10V, I_D=1.5A		195	250	mΩ
Forward Transconductance *1	g_{FS}	V_{DS}=15V, I_D=1.5A		4		S
Gate Resistance	R_g		0.5		2.4	Ω
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=50V, I_D=1.5A		3.3	4	nC
Gate Source Charge	Q_{gs}			0.47		
Gate Drain Charge	Q_{gd}			1.45		
Turn-On DelayTime	$t_{d(on)}$	I_D=0.2A, V_{DS}=50V, ,V_{GEN}=10V R_L=33Ω,R_G=6Ω		7	11	ns
Turn-On Rise Time	t_r			11	17	
Turn-Off DelayTime	$t_{d(off)}$			9	15	
Turn-Off Fall Time	t_f			10	15	
Body Diode Reverse Recovery Time	t_{rr}	I_F= 1.5A, dI/dt= 100A/μs		50	100	
Maximum Body-Diode Continuous Current	I_S				1.0	A
Diode Forward Voltage	V_{SD}	I_S=1.0A,V_{GS}=0V		0.8	1.2	V

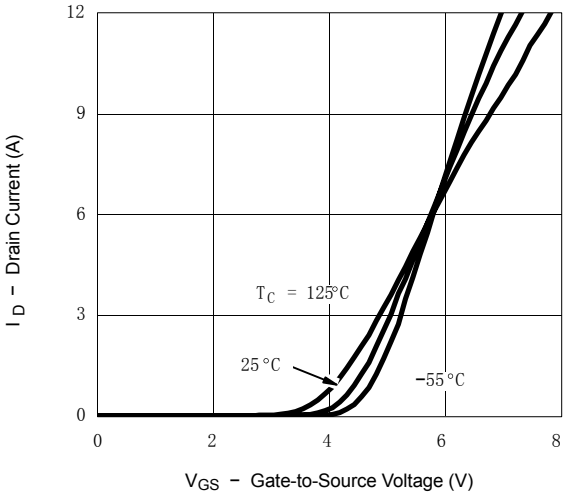
*1 Pulse test: PW ≤ 300us duty cycle≤ 2%.

RATING AND CHARACTERISTIC CURVES (SI2328)

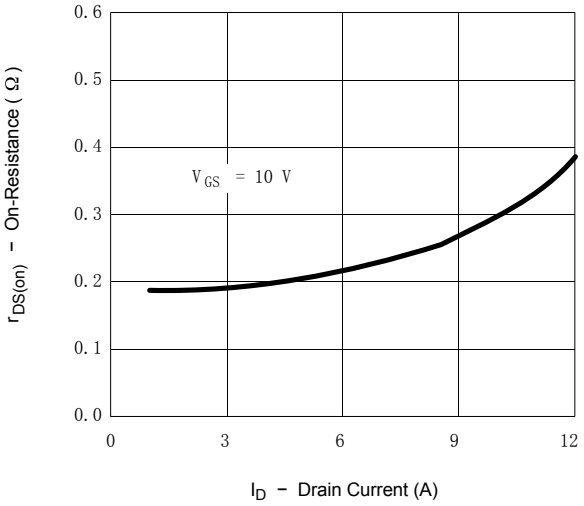
Output Characteristics



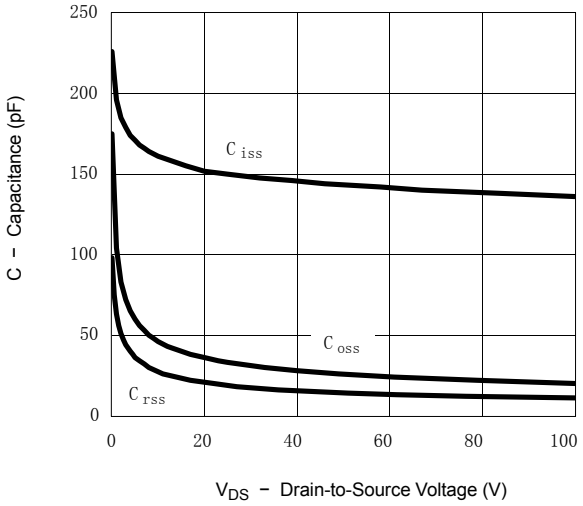
Transfer Characteristics



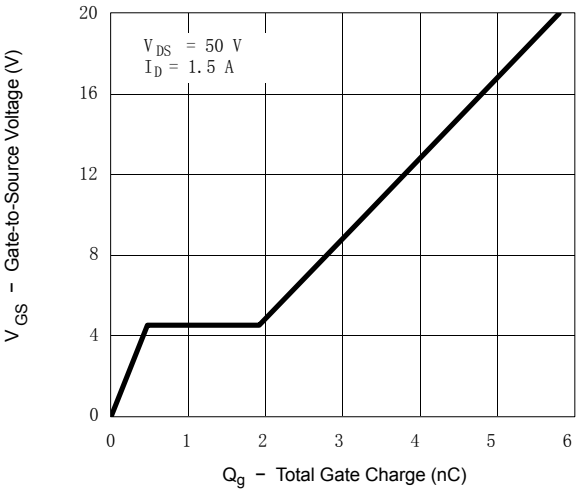
On-Resistance vs. Drain Current



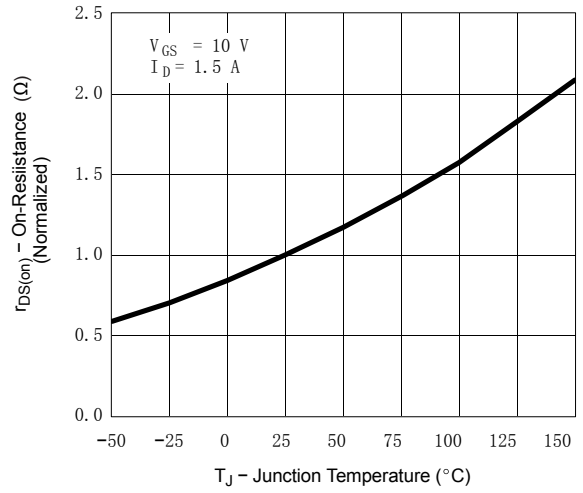
Capacitance



Gate Charge

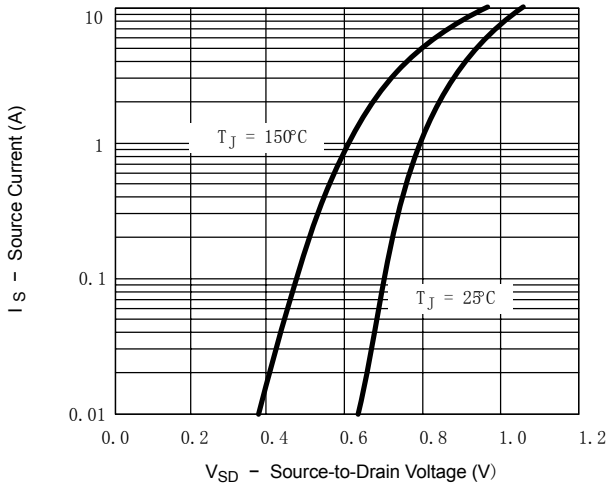


On-Resistance vs. Junction Temperature

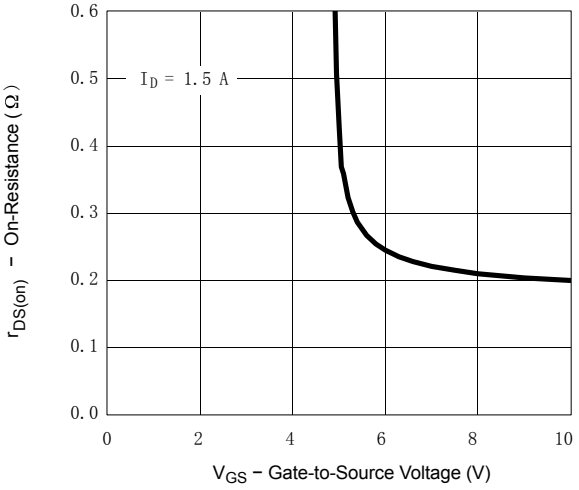


RATING AND CHARACTERISTIC CURVES (SI2328)

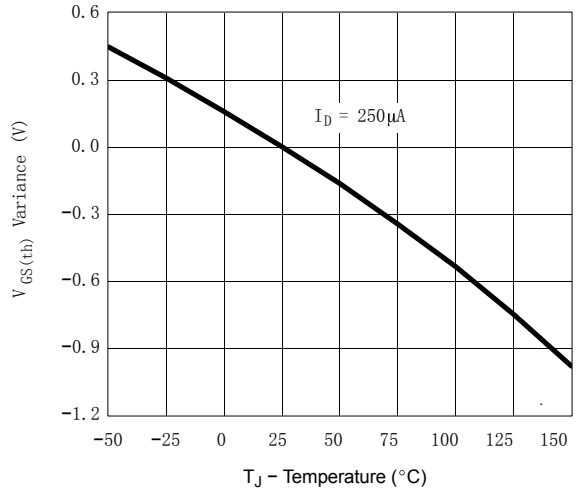
Source-Drain Diode Forward Voltage



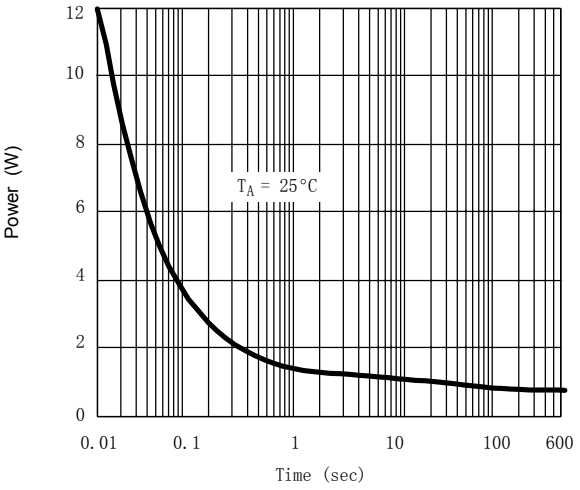
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient