LIXI

Leading Circuit Protection Products and Solutions

FEATURES

- $R_{DS(ON)}$ ≤ 45mΩ(35mΩ Typ.)
  @V_{GS}=-4.5V
- $R_{DS(ON)}$ ≤ 0mΩ(mΩ Typ.)
  @V_{GS}=-2.5V
- $R_{DS(ON)}$ ≤ 90mΩ(50mΩ Typ.)
  @V_{GS}=-1.8V

APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter

MARKING

- MARKING:3415

1 : G
2 : S
3 : D
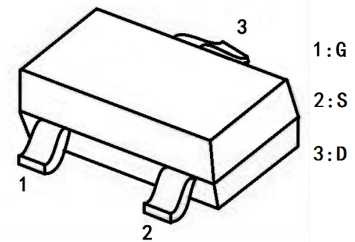
SOT-23

Maximum ratings (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±12	
I_D	Continuous Drain Current	-4.1	A
I_{DM}	Pulsed Drain Current	-16	
P_D	Maximum Power Dissipation	0.83	W
$R_{θJA}$	Thermal Resistance from Junction to Ambient(t ≤5s)	150	℃/W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55 ~+150	

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MOSFET ELECTRICAL CHARACTERISTICS Ta=25 ℃ unless otherwise specified

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
Static						
$V_{(BR)DSS}$	Drain-source breakdown voltage	V_{GS} = 0V, I_D =-250µA	-20	-21.5		V
$V_{GS(th)}$	Gate-source threshold voltage	V_{DS} =V_{GS}, I_D =-250µA	-0.4	-0.7	-1	
I_{GSS}	Gate-source leakage	V_{DS} =0V, V_{GS} =±10V			±100	nA
I_{DSS}	Zero gate voltage drain current	V_{DS} =-16V, V_{GS} =0V			-1	µA
$R_{DS(on)}$	Drain-source on-state resistance note1	V_{GS} =-4.5V, I_D =-3.5A		35	45	mΩ
		V_{GS} =-2.5V, I_D =-3A		38	70	
		V_{GS} =-1.8V, I_D =-2A		50	90	
V_{SD}	Body diode voltage	I_S=-3.3A		-0.9	-1.2	V
Dynamic[note2]						
C_{iss}	Input capacitance	V_{DS} =-4V,V_{GS} =0V,f =1MHz		740		pF
C_{oss}	Output capacitance			290		
C_{rss}	Reverse transfer capacitance			190		
Q_g	Total gate charge	V_{DS}=-4V,V_{GS}=-2.5V I_D=-4.1A		4.5	9	nC
Q_{gs}	Gate-source charge			1.2		
Q_{gd}	Gate-drain charge			1.6		
$t_{d(on)}$	Turn-on delay time	V_{DS}=-4V, R_L=1.2Ω, I_D =-3.3A, V_{GEN}=-4.5V,R_G=1Ω		13	20	nS
t_r	Rise time			35	53	
$t_{d(off)}$	Turn-off delay time			32	48	
t_f	Fall time			10	20	

Notes: 1. Pulse Test : Pulse Width < 300µs, Duty Cycle ≤2%.

2 . Guaranteed by design, not subject to production testing.

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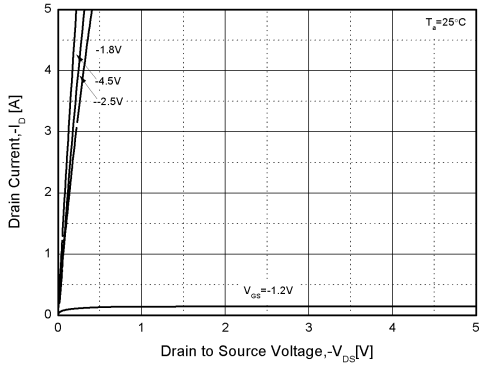## Typical Performance Characteristics

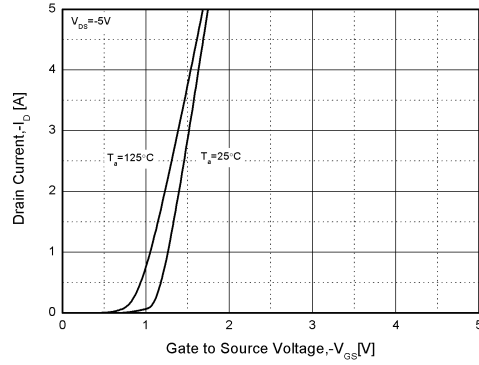Figure1. Output Characteristics
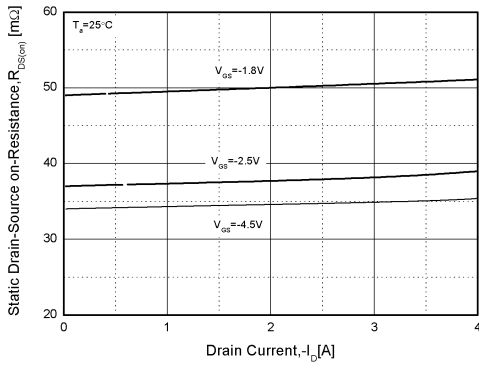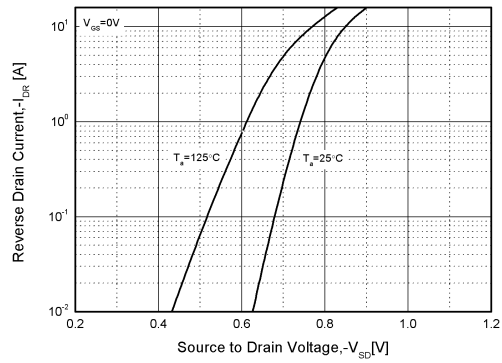
Figure2. Transfer Characteristics

Figure3. Rdson-Drain Current

Figure4. Typical Source-Drain Diode Forward Voltage

Figure5. Capacitance Characteristics
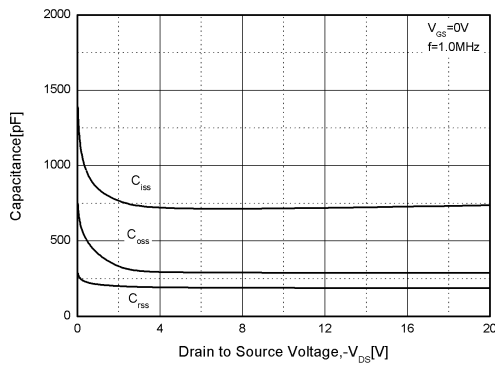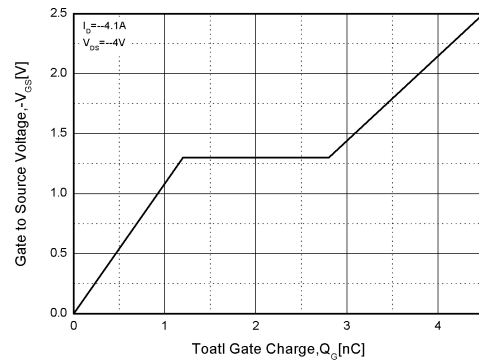
Figure6. Gate Charge

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Typical Performance Characteristics (cont.)
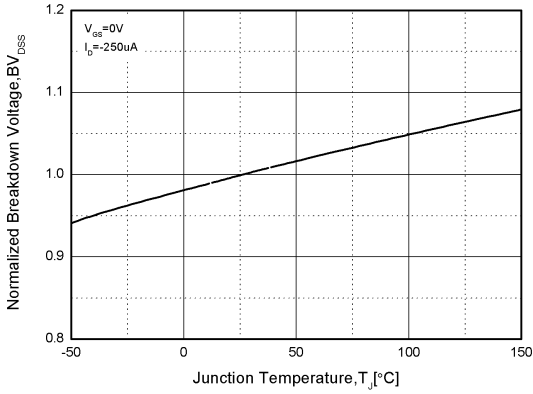
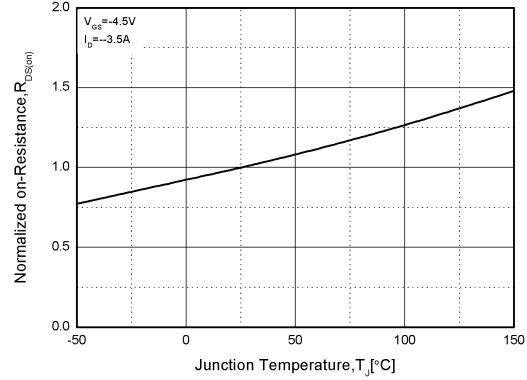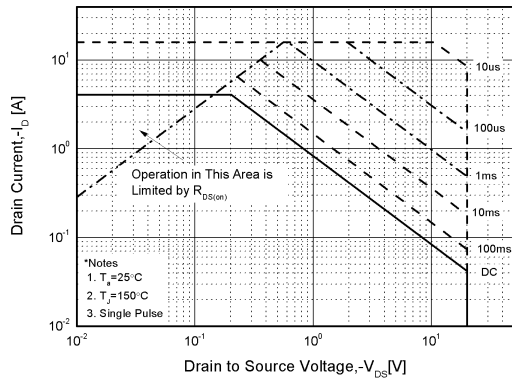Figure7. Normalized Breakdown Voltage vs. Temperature

Figure8. Normalized on Resistance vs. Temperature

Figure9. Safe Operation Area

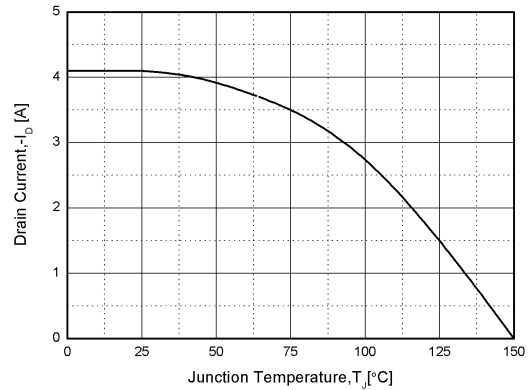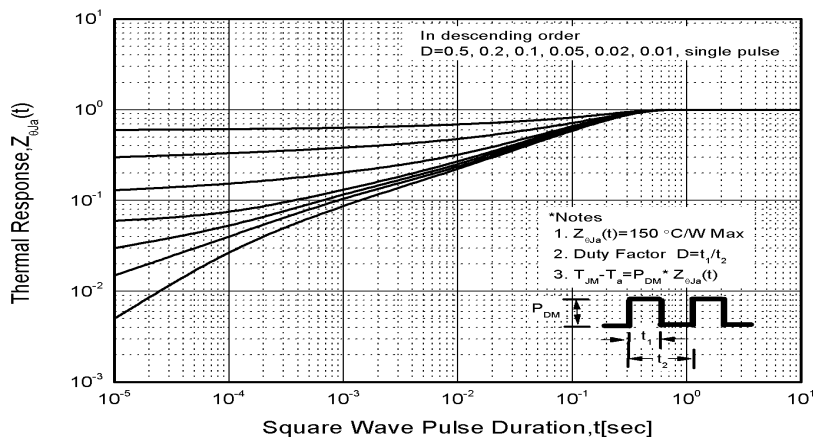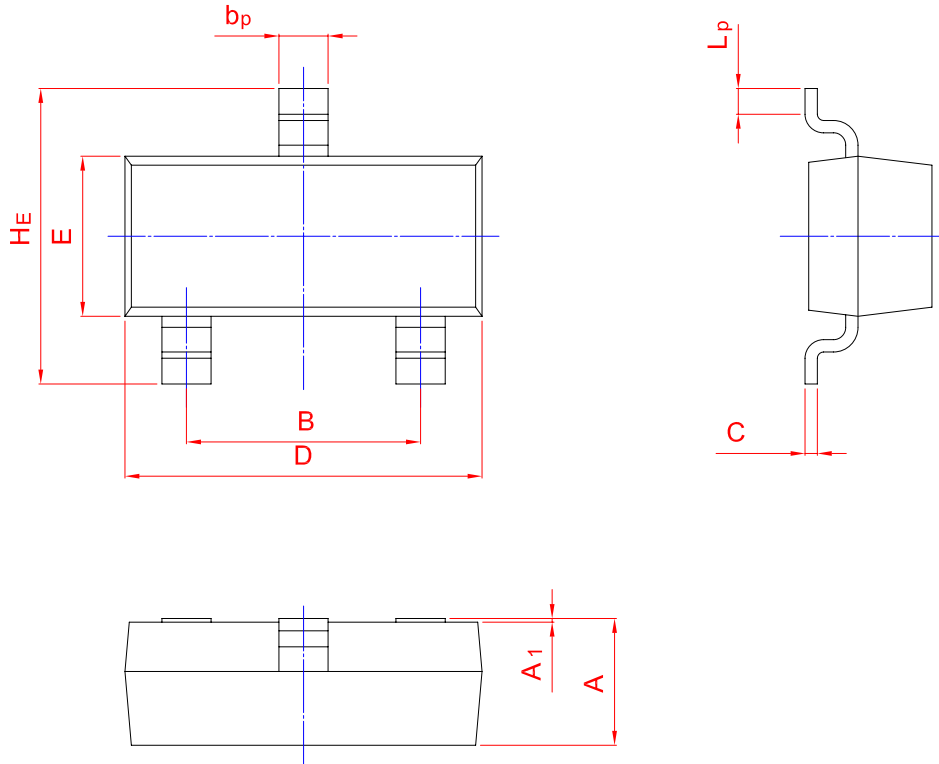Figure10.   Drain Current vs. Case Temperature

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads   **SOT-23**
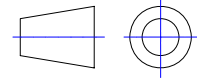
UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20

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