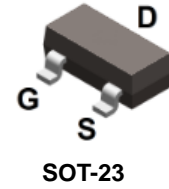


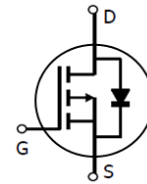
## Features

- High-speed switching
- Drive circuits can be simple
- Parallel use is easy



## Typical Applications

- Power management in note book.
- Switching application.
- Battery powered system
- Load switch



## Mechanical Data

- Case: SOT-23
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

## Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>	-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>	±12	V
Continuous Drain Current	I <sub>D</sub>	-4.1	A
Pulsed Drain Current (t <sub>p</sub> = 10μs) *1	I <sub>DM</sub>	-33	A

## Thermal Characteristics

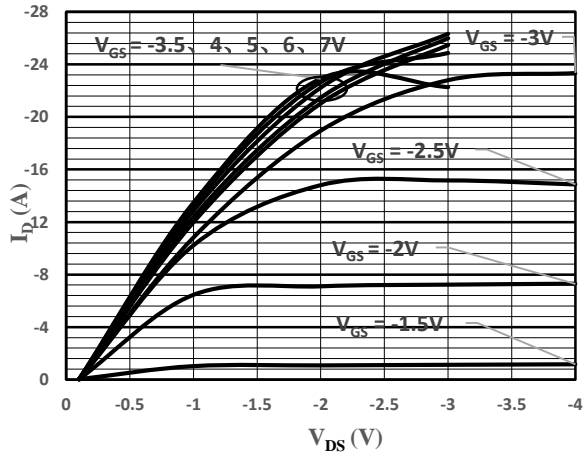
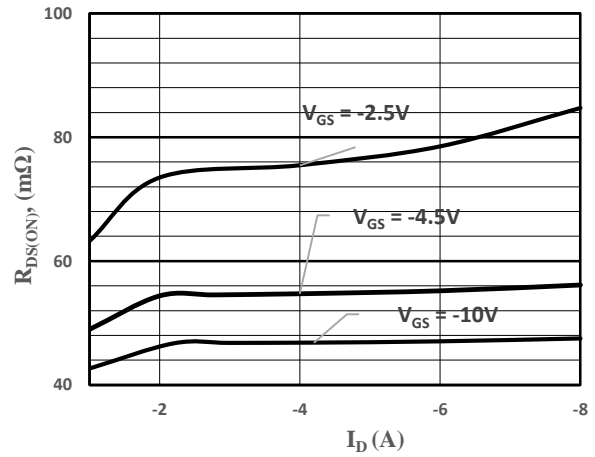
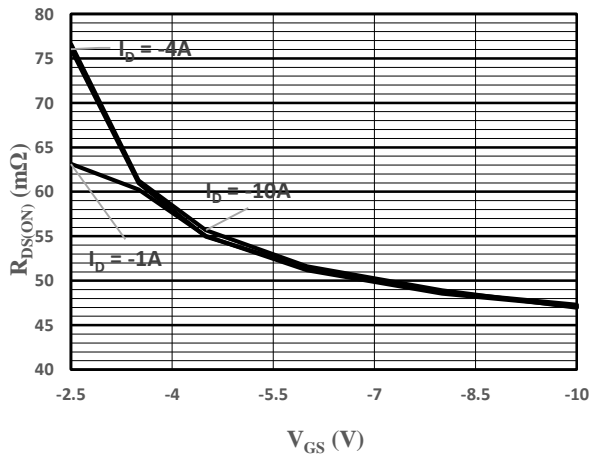
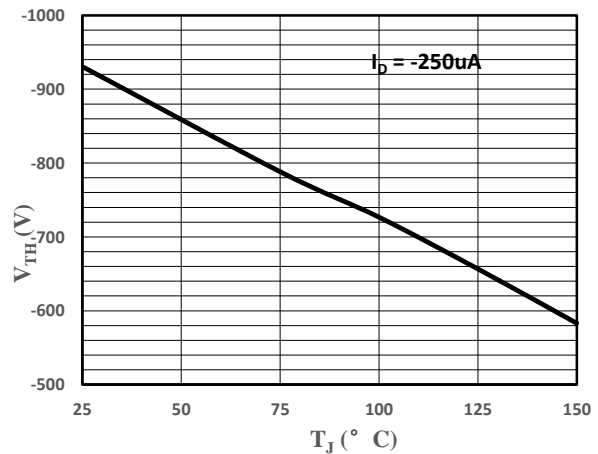
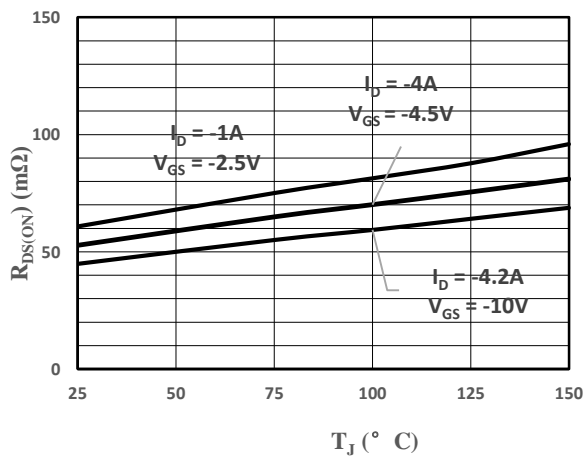
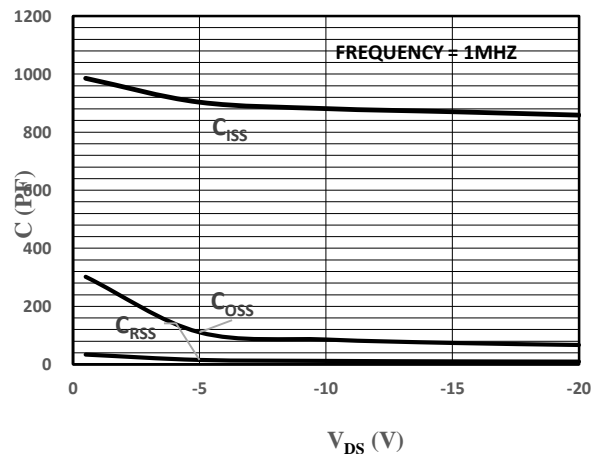
Parameter	Symbol	Value	Unit
Power Dissipation	$P_D$	1.25	W
Thermal Resistance Junction-to-Air <sup>*2</sup>	$R_{\theta JA}$	95	°C/W
Thermal Resistance Junction-to-Lead	$R_{\theta JL}$	60	°C/W
Thermal Resistance Junction-to-Case <sup>*2</sup>	$R_{\theta JC}$	30	°C/W
Operating Junction Temperature Range	$T_J$	-55 ~ +150	°C
Storage Temperature Range	$T_{STG}$	-55 ~ +150	°C

## Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
$V_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = -250\mu A$	-30	-	-	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = -20V, V_{GS} = 0V$	-	-	-1000	nA
$I_{GSS}$	Gate-Body Leakage Current	$V_{GS} = \pm 12V, V_{DS} = 0V$	-	-	$\pm 100$	nA
<b>On Characteristics <sup>*1</sup></b>						
$R_{DS(ON)}$	Static Drain-Source On-resistance	$V_{GS} = -10V, I_D = -4.2A$	-	39	50	mΩ
		$V_{GS} = -4.5V, I_D = -4A$	-	54	65	
		$V_{GS} = -2.5V, I_D = -1A$	-	73	90	mΩ
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.7	-1.0	-1.3	V
<b>Dynamic Characteristics</b>						
$C_{ISS}$	Input Capacitance	$V_{GS} = 0V$ $V_{DS} = -15V$ $f = 1.0MHz$	-	870	-	pF
$C_{OSS}$	Output Capacitance		-	74	-	
$C_{RSS}$	Reverse Transfer Capacitance		-	10	-	
<b>Source-Drain Diode Characteristics</b>						
$V_{SD}$	Diode Forward Voltage <sup>*1</sup>	$I_D = -1A, V_{GS} = 0V$	-	-0.8	-1	V

Notes:

1. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$
2. Surface-mounted on 1 inch<sup>2</sup> FR-4 board with 2OZ copper

**Ratings and Characteristics Curves** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)

**Fig 1 On-Region Characteristics**

**Fig 2 On-Resistance vs. Drain Current and Gate Voltage**

**Fig 3 On-Resistance vs. Gate-Source Voltage**

**Fig 4 Gate Voltage vs. Junction Temperature**

**Fig 5 On-Resistance vs. Junction Temperature**

**Fig 6 Capacitance Characteristics**

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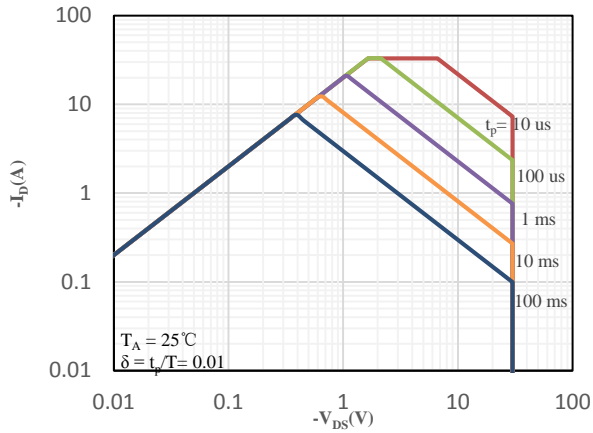


Fig 7 Safe Operation Area

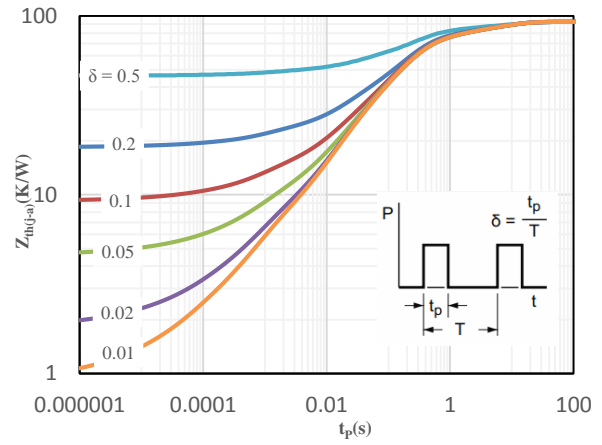
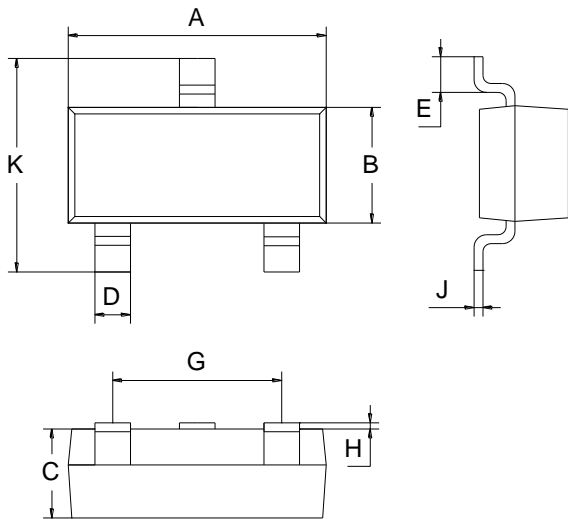


Fig 8 Maximum transient thermal impedance

## Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

## Mounting Pad Layout (Unit: mm)

