

### FEATURES

- RDS(ON) < 55mΩ @ VGS = -10V
- RDS(ON) < 68mΩ @ VGS = -4.5V
- Trench Power LV MOSFET technology
- High density cell design for Low RDS(ON)
- High Speed switching

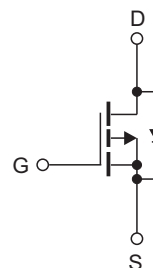
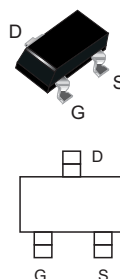


Product Summary			
V <sub>DS</sub>	R <sub>DS(on)</sub> (mΩ) Typ	I <sub>D</sub> (A)	Q <sub>g</sub> (Typ)
-30V	40 @ -10V	-4.1	6.8nc
	53 @ -4.5V	-3.5	

### MECHANICAL DATA

- Case: SOT-23(TO-236)
- Terminals: Plated solderable per MIL-STD-750, method 2026
- Mounting Position: Any

SOT-23



P-channel MOSFET

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

Parameters	Symbol	Value	Unit
Drain-Source voltage	V <sub>DS</sub>	-30	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current (T <sub>J</sub> = 150°C)	I <sub>D</sub>	T <sub>A</sub> =25°C	-4.1
		T <sub>A</sub> =70°C	-3.2
Pulsed Drain Current <sup>1)</sup>	I <sub>DM</sub>	-15	A
Maximum Power Dissipation @T <sub>A</sub> =25°C	P <sub>D</sub>	1.2	W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

### Thermal Resistance Ratings

Parameters	Symbol	Typ	Max	Unit
Junction to Ambient, Steady State <sup>2)</sup>	R <sub>θJA</sub>	-	104	°C/W

### Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)

Parameters	Symbol	Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =-250μA	-30	-	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V, T <sub>C</sub> =25°C	-	-	-1	μA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = 20V, V <sub>DS</sub> =0V	-	-	100	nA
Gate-Source Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =-250μA	-1.0	-1.5	-2.4	V
Drain-Source On-State Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> =-3.5A	-	53	68	mΩ
		V <sub>GS</sub> = -10V, I <sub>D</sub> =-4.1A	-	40	55	
Dynamic						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, f=1MHz	-	580	-	pF
Output Capacitance	C <sub>oss</sub>		-	98	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	74	-	
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-4.1A	-	6.8	-	nC
Gate-Source Charge	Q <sub>GS</sub>		-	1.0	-	
Gate-Drain Charge	Q <sub>GD</sub>		-	1.4	-	
Turn-on Delay Time	t <sub>D(on)</sub>	V <sub>GS</sub> =-10V, V <sub>DD</sub> =-15V, R <sub>L</sub> =15Ω, R <sub>GEN</sub> =2.5Ω	-	14	-	ns
Turn-On Rise Time	t <sub>r</sub>		-	61	-	
Turn-off Delay Time	t <sub>D(off)</sub>		-	19	-	
Turn-Off Fall Time	t <sub>f</sub>		-	10	-	
Drain-Source Body Diode Characteristics						
Maximum Body-Diode Continuous Current	I <sub>S</sub>		-	-	-4.1	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V	-	-0.8	-1.2	V

Notes: 1. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.  
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

### Typical Characteristics

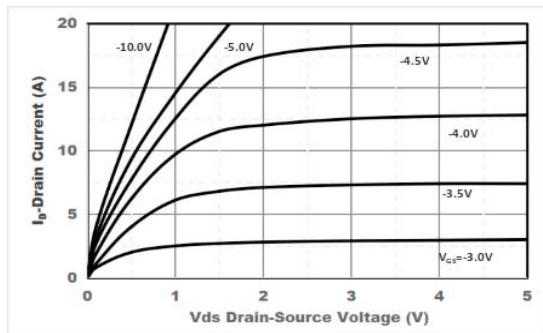


Figure1. Output Characteristics

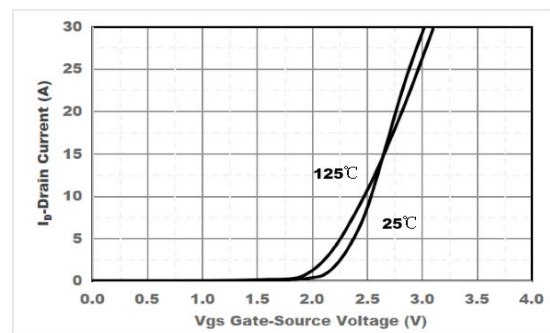


Figure2. Transfer Characteristics

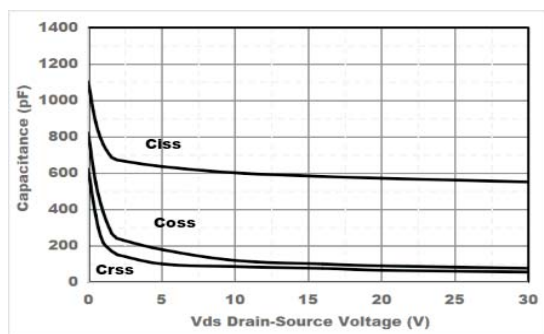


Figure3. Capacitance Characteristics

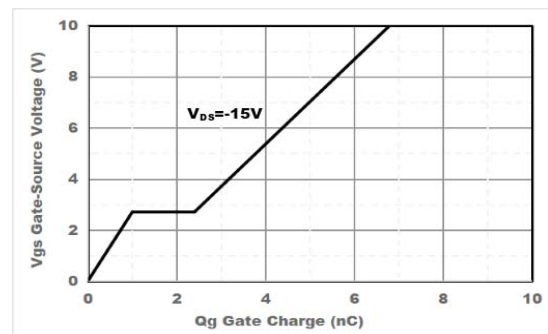


Figure4. Gate Charge

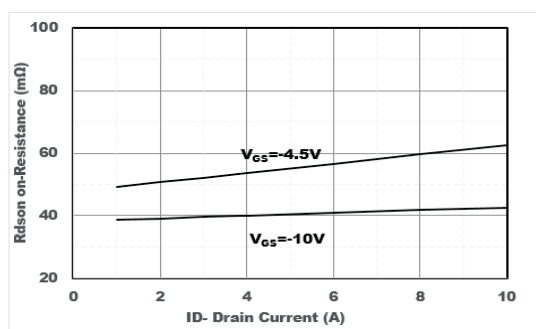


Figure5. Drain-Source on Resistance

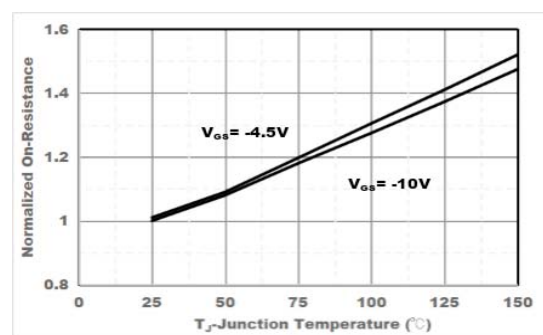


Figure6. Drain-Source on Resistance

## Typical Characteristics

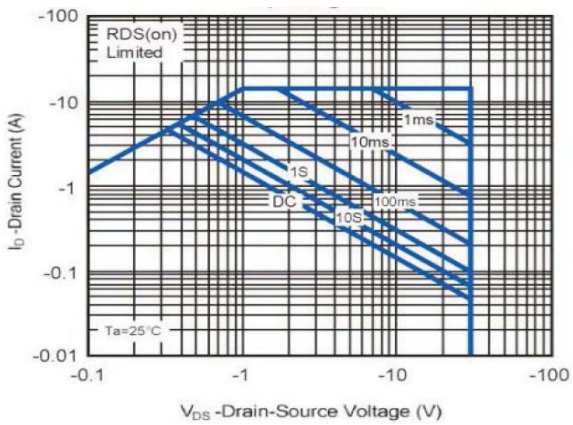


Figure7. Safe Operation Area

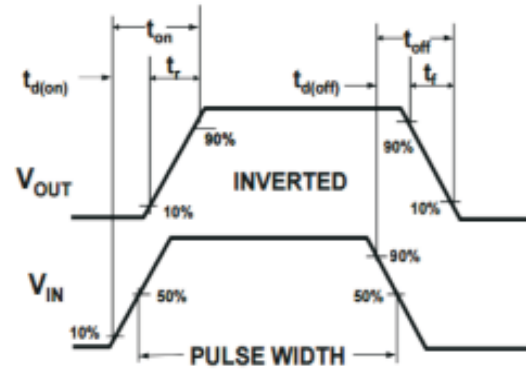
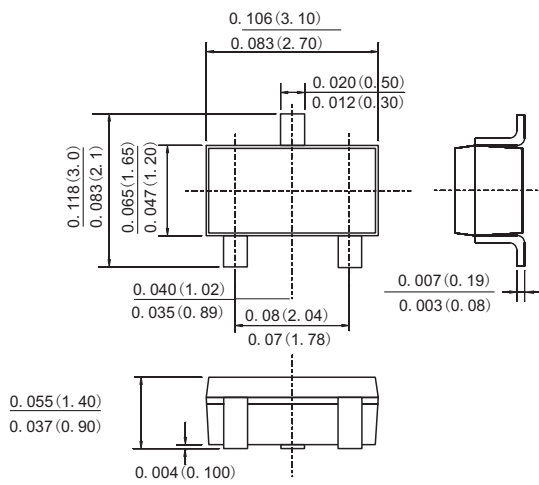


Figure8. Switching wave

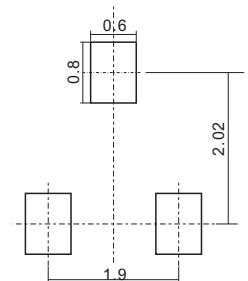
## PACKAGE OUTLINE DIMENSIONS

### SOT-23



Dimensions in inches and (millimeters)

### Suggested Pad Layout



Dimensions in millimeters

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