

### FEATURES

- $R_{DS(ON)} < 105m\Omega @ V_{GS} = -4.5V$
- $R_{DS(ON)} < 85m\Omega @ V_{GS} = -10V$

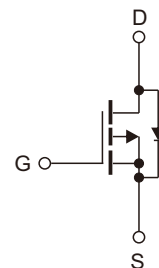
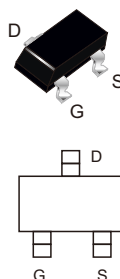


Product Summary			
$V_{DS}$	$R_{DS(on)}$ (m $\Omega$ ) Typ	$I_D$ (A)	$Q_g$ (Typ)
-30V	60 @ -10V	-3.0	4.2nC
	80 @ -4.5V	-2.0	

### 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 ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameters	Symbol	Value	Unit
Drain-Source voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current ( $T_J = 150^\circ\text{C}$ )	$I_D$	$T_A = 25^\circ\text{C}$	-3.0
		$T_A = 70^\circ\text{C}$	-2.4
Pulsed Drain Current <sup>1)</sup>	$I_{DM}$	-13	A
Maximum Power Dissipation @ $T_A = 25^\circ\text{C}$	$P_D$	1.1	W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

### Thermal Resistance Ratings

Parameters	Symbol	Typ	Max	Unit
Junction to Ambient, Steady State <sup>2)</sup>	$R_{\theta JA}$	-	96	$^\circ\text{C}/\text{W}$

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

Parameters	Symbol	Conditions	Min	Typ	Max	Unit
<b>Static</b>						
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> =-2.0A	-	80	105	mΩ
		V <sub>GS</sub> = -10V, I <sub>D</sub> =-3.0A	-	60	85	
<b>Dynamic</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, f=1MHz	-	375	-	pF
Output Capacitance	C <sub>oss</sub>		-	63	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	47	-	
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, I <sub>D</sub> =-3.0A	-	4.2	-	nC
Gate-Source Charge	Q <sub>GS</sub>		-	1.0	-	
Gate-Drain Charge	Q <sub>GD</sub>		-	1.3	-	
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	-	
<b>Drain-Source Body Diode Characteristics</b>						
Maximum Body-Diode Continuous Current	I <sub>S</sub>		-	-	-3.0	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-3.0A, V <sub>GS</sub> =0V	-	-0.8	-1.2	V

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

### Typical Characteristics

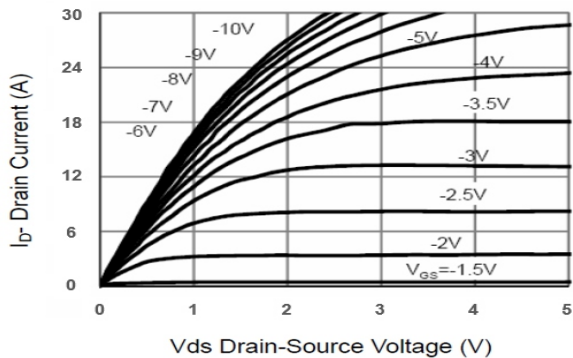


Figure1. Output Characteristics

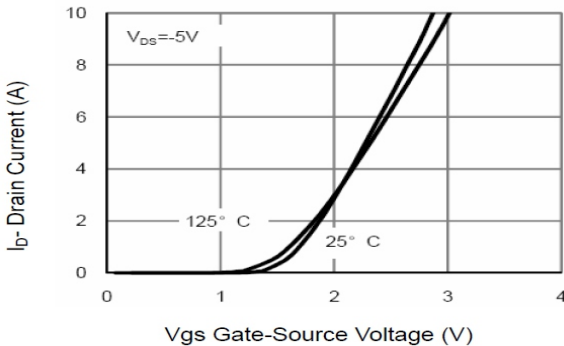


Figure2. Transfer Characteristics

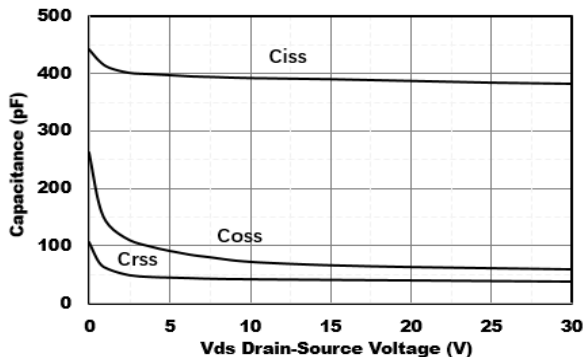


Figure3. Capacitance Characteristics

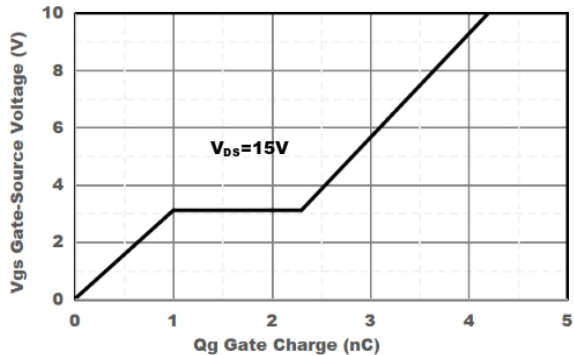


Figure4. Gate Charge

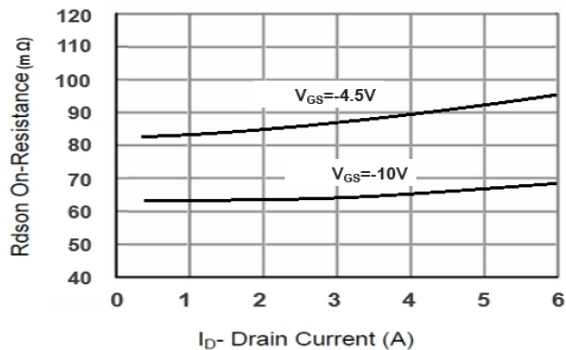


Figure5. Drain-Source on Resistance

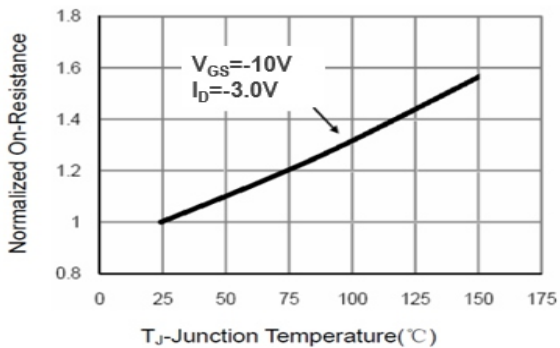


Figure6. Drain-Source on Resistance

### Typical Characteristics

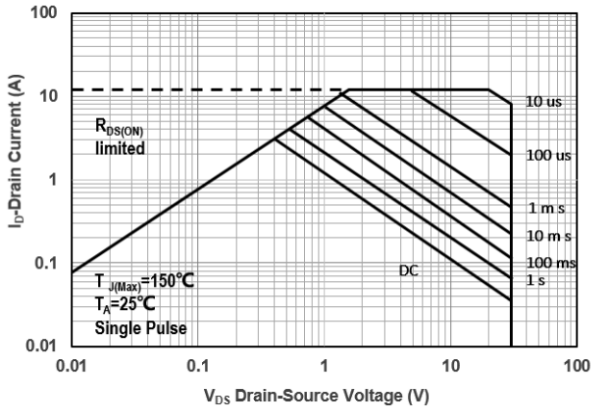


Figure7. Safe Operation Area

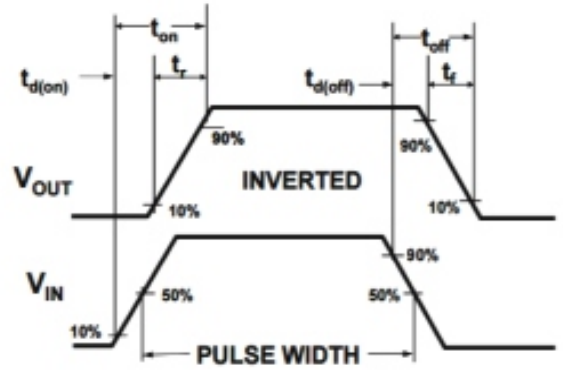
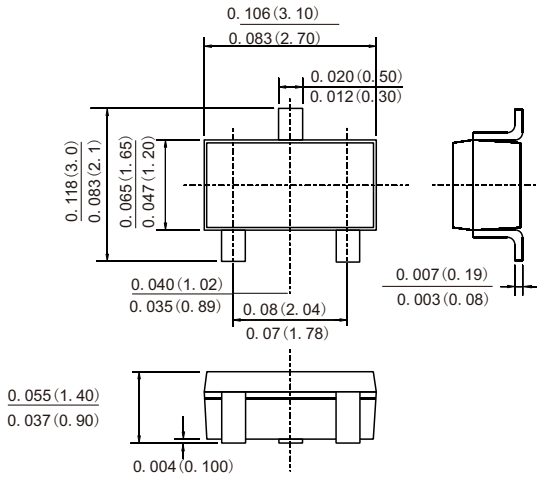


Figure8. Switching wave

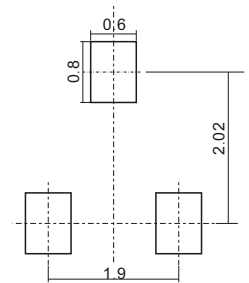
### PACKAGE OUTLINE DIMENSIONS

#### SOT-23



Dimensions in inches and (millimeters)

#### Suggested Pad Layout



Dimensions in millimeters

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